

***Sui Generis* Protection of Traditional Knowledge of Indigenous Peoples of  
the Amazon**

**Thesis submitted for the degree of Doctor of Philosophy  
At the University of Queensland  
In January 2007**



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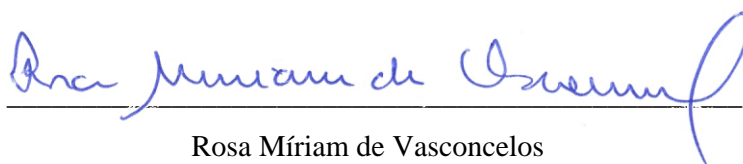
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## Statement of originality

The work presented in this thesis is, to the best of my knowledge and belief, original and my own work, except as acknowledged in the thesis itself. The material has not been submitted, either in whole or in part, for a degree at this or any other university.



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Rosa Míriam de Vasconcelos

## **Acknowledgements**

I wish to express my appreciation to several colleagues and members of my family for assisting me in completing this thesis.

First and foremost, I am infinitely grateful to my husband, Lucio Brunale, my lovely partner. Despite the demands of his own PhD studies, he has sustained me through both the ups and downs of the winding path that led to this thesis with love and generosity of spirit. Furthermore, my son and daughter, Rodrigo and Marina, the roots of my heart, must be sincerely thanked for their ongoing support throughout the entire process of leaving Brazil to start a new life in Australia, and also for their enormous patience, encouragement and understanding in hard times.

I am very grateful to my mother, brothers, sisters and nephews for their affection, encouragement and emotional support during the PhD process.

I wish to express my deep gratitude to my supervisor, Professor Brad Sherman, for enthusiastically sharing his knowledge with me and for his patient and unstinting support and encouragement throughout my PhD candidature. His knowledge and insight in the field of intellectual property rights have enhanced my thesis immensely. I also acknowledge the contributions of my associate supervisor, Dr. Jennifer Corrin Care, for her advice and assistance during the latter part of my doctoral research. I could not have hoped for more supportive academic supervision.

I also acknowledge the contributions made by Professor Kamal Puri and Dr. Amanda McBratney for their initial assistance in clarifying my research topic and in assisting me through the PhD confirmation process.

Further, I wish to express my appreciation and gratitude to my Academic Counselors at the place of my employment, Embrapa, who include Dr. Maria Jose Sampaio and Elza Brito da Cunha for their support and for contributing their own ideas in the area of my PhD research. I express my thanks to these colleagues for encouraging me to undertake postgraduate legal research.

Thanks all to my dear friends, near and far, old and new and to my colleagues and friends at the T.C. Beirne School of Law and the Australian Centre for Intellectual Property in

Agriculture (ACIPA), in particular Dr. Kanchana Kariyawasam and Mariela Alarco for help, encouragement and intellectual stimulation.

Special thanks to Rita Mortiss, Vivienne Campion, Helen Klæbe, Lesley Synge, Gisele Noce, Lydia Peschel, and Scott Guy for assistance in editing my thesis at several stages of its development.

Finally, I express my gratitude to my employer, the Brazilian Agricultural Research Corporation (EMBRAPA) for its financial support to undertake PhD studies. I am grateful to my close friends and colleagues at Embrapa, namely Fátima Pellegrini, Rizoleide Santos, Simone Nunes Ferreira, Marlene França and Gorete Medeiros for their ongoing friendship and support.

## **Dedication**

This thesis is dedicated to my dear parents Everaldo Wolmar (in memoriam) and Maria Jacinta, who were my first educators and who taught me some of the most important lessons in love and life.

## Abstract

The basic problem addressed in this thesis is the increased misappropriation of traditional knowledge held by Amazonian indigenous peoples and the lack of effective mechanisms to protect that knowledge. This thesis critically examines whether and how, if at all, traditional knowledge associated with genetic resources can be protected. It focuses on traditional knowledge held or shared by different indigenous people. The ultimate aim of this thesis is to present a set of core recommendations for the creation of a regional *sui generis* regime for the protection of traditional knowledge held by two or more groups of Amazonian indigenous people.

The thesis is divided into four parts. Part One introduces key concepts and ideas such as characteristics of traditional knowledge, its cultural significance and its interface with biological diversity. Part Two assesses the desirability and feasibility of protecting traditional knowledge. This thesis presents five reasons why Amazonian countries should protect traditional knowledge. These include the following:

- improve the livelihoods of traditional knowledge holders and to preserve the cultural integrity of indigenous peoples;
- promote social equity, equality and non-discrimination;
- recognize the valuable contributions of traditional knowledge and to promote its uses and development;
- promote the conservation and sustainable use of biological diversity; and
- ensure compliance with international legal and moral obligations.

Part Three of the thesis examines the different ways of protecting traditional knowledge. Firstly, the extent to which the patent regime may be utilized to protect traditional knowledge is evaluated and its limitations in accommodating traditional knowledge protection are identified. Secondly, the more prominent alternative *sui generis* regimes are examined. This analysis concludes that none of the existing alternative *sui generis* models provides a solution to the problem of traditional knowledge held or shared by indigenous peoples from different countries. Thirdly, the use of customary law as a means of protecting traditional knowledge is evaluated. The thesis concludes that the use of customary law to regulate access to, and protection of, traditional knowledge is desirable as it can help to protect indigenous peoples' rights, as well as ensure a fairer application of the rule of law.

One of the main recommendations of this thesis is that a common set of norms, rules and principles from customary law should be identified and used as the basis for developing a community protocol which should, in turn, be formally adopted under a regional *sui generis* regime. Finally, the current legal and administrative measures at the national, regional and international levels adopted by Amazonian countries to protect traditional knowledge are critically examined. This examination reveals that the Amazonian countries have made considerable progress in the development of a framework to protect traditional knowledge at a national level. However, there is neither a standard mechanism to ensure the effective articulation of different national regulations nor a mechanism to deal with overlapping of rights recognized and/or granted over the same, or similar, traditional knowledge to different holders. Further, there is no legislation dealing with traditional knowledge held or shared by more than one indigenous people. The current challenge for Amazonian countries is to create a framework to protect traditional knowledge held or shared by more than one indigenous people not only within national borders but also across borders of the Amazon region.

Part Four of the thesis recommends that the Amazonian countries should establish a regional and unitary *sui generis* regime for the protection of traditional knowledge which is owned by more than one indigenous people. Such a regime should be the sole and the exclusive form of protection of traditional knowledge associated with genetic and/or biological resources held or shared by more than one indigenous people. It also recommends that rights over traditional knowledge should be vested in all indigenous peoples owning such knowledge and those who could have supplied the same, or similar, knowledge. In addition, it contains several other recommendations that it is hoped will assist the Amazonian countries to develop a suitable regional regime.



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## **PART ONE**



## CHAPTER 1

### INTRODUCTION

#### I OVERVIEW

Over the years, traditional knowledge held by Amazonian indigenous peoples has been used as a starting point for many new agricultural, pharmaceutical and botanical products and processes. Unfortunately, there are numerous and well-known examples of the misappropriation of this traditional knowledge. These include efforts to patent products and processes based on the use of the ayahuasca, biribiri, cumaniol, toxin of the Amazonian frog, cupuaçu, copaiba, andiroba tree, cat's claw, maca, sangre de drago, quebra pedras, wormseed, cinchona tree, curare, muirapuama, pilocarpa and jenipapo.<sup>1</sup> In all of these cases, patents were claimed and/or obtained without gaining prior informed consent from traditional knowledge holders, and without provision for contractual sharing of any potential benefits with these indigenous peoples.<sup>2</sup> In addition, the genetic resources associated with traditional knowledge were also obtained without an access contract.<sup>3</sup> The misappropriation of traditional knowledge has occurred largely because of the inadequacies of the existing intellectual property regime to protect such knowledge. Further, it will be argued, the existing patent regime currently operates to facilitate and legitimize the appropriation of traditional knowledge by non-indigenous people.

While misappropriation of traditional knowledge is a global problem for indigenous peoples,<sup>4</sup> it has an even more significant impact on Amazonian countries because of their exceptional

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<sup>1</sup> See Chapter 2 [IV] of this thesis for more information about the misappropriation of traditional knowledge and associated genetic resources.

<sup>2</sup> Center for International Environmental Law (Ciel), *Genetic Resources, Traditional Knowledge and Intellectual Property Rights: Promoting Synergies for Sustainable Development* (2002) CIEL <<http://www.ciel.org/Publications/iprights.pdf>> at 22 August 2005.

<sup>3</sup> The term 'genetic resource' is used to refer to any genetic material, within or among any material of plant (including medicinal, food-crop, agricultural, agro-forestry and ornamental plants, unexploited plants and wild relatives), animal, microbial, or other origin, containing functional units of heredity with actual or potential value. See further, Chapter 3 for more information about the interface between the concepts of 'genetic resources' and 'biological resources'.

<sup>4</sup> Around the globe, numerous examples of the misappropriation of such knowledge exist. These include efforts to patent uses of the neem tree and turmeric from India; basmati rice from India and Pakistan; the soapberry from Africa; the kava from the South Pacific, and the enola from Mexico. More information about these cases can be found in Michael J. Balick and Paul Alan Cox, *Plants, People, and Culture: The Science of Ethnobotany*, *Scientific American Library Series* (1996) 37, 38. See also Karen Dean, 'Amazonian Shamans Confront the U.S. Patent Office on South American Plant' (2000) (48) *HerbalGram The Journal of the American Botanical Council* 28. See also Philip Schuler, 'Biopiracy and Commercialization of Ethnobotanical Knowledge' in Joseph Michael Finger and Philip Schuler (eds), *Poor People's Knowledge. Promoting Intellectual Property in Developing Countries* (2004) 159-82.

biological and cultural diversity.<sup>5</sup> The misappropriation of traditional knowledge and associated genetic resources operates within a social culture of prejudice and disregard for the customary law of indigenous peoples, particularly with respect to their systems for the protection and transmission of traditional knowledge. Consequently, indigenous peoples have been exploited and impoverished both economically and culturally.<sup>6</sup> This has elicited the need to create a regime that will protect traditional knowledge against misappropriation. This also highlights the need to empower the indigenous peoples with right to decide and authorize when, where, and how their traditional knowledge can be accessed, as well as the right to an equitable share in any benefits which arise from the use of their knowledge. As a result, in recent years the indigenous peoples and governments of the Amazonian countries have begun to ask why traditional knowledge should be considered to be a public good, when the products and processes based on traditional knowledge fall under the monopoly control of intellectual property protection.<sup>7</sup> More specifically this questioning has brought to light the injustice of the situation and the importance of traditional knowledge which has led to calls for the protection of such knowledge. A legal mechanism to protect traditional knowledge is needed to prevent access to traditional knowledge without the prior informed consent of the indigenous peoples and to suppress commercial or industrial exploitation of any product or process consisting of, or developed from traditional knowledge, without just and equitable compensation for the holders of such knowledge.

The debate, to date, has focused on the protection of traditional knowledge at a national level. This thesis, however, aims to examine how traditional knowledge held by two or more different indigenous peoples should be protected.<sup>8</sup> The main aim of the thesis is to provide a set of core recommendations for the creation of a *sui generis* regime that promotes cross-border protection of regional traditional knowledge held or shared by Amazonian indigenous peoples.

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<sup>5</sup> See Chapter 2 of this thesis for more information about the biological and cultural diversity in the Amazon region.

<sup>6</sup> Ikechi Mgbeoji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge* (2006) 179.

<sup>7</sup> The term 'Amazonian countries' in this thesis refers exclusively to the countries that are signatories of the *Treaty for Amazon Cooperation*. These countries are Brazil, Bolivia, Colombia, Ecuador, Guyana, Peru, Surinam, and Venezuela. For more information about the *Treaty for Amazon Cooperation*, see <[http://www.internationalwaterlaw.org/RegionalDocs/amazonian\\_cooperation.htm](http://www.internationalwaterlaw.org/RegionalDocs/amazonian_cooperation.htm)>. See also World Intellectual Property Organization, 'Intellectual Property Needs and Expectations of Traditional Knowledge Holders, WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)' (WIPO, 2001) 217. See also Jean Christie, 'Indigenous Peoples, Biodiversity and Intellectual Property Rights' (1995) *Australasian Biotechnology* 241-42.

<sup>8</sup> See Chapter 3 of this thesis for more information about the meaning of the term 'traditional knowledge' and its characteristics and values.

## II RESEARCH PROBLEMS

The central issue orienting this thesis relates to the inadequacy of existing national intellectual property regimes in Amazonian countries to protect regional traditional knowledge. Presently, protection of traditional knowledge remains grounded in the national legal system of each state, while traditional knowledge extends beyond national borders and its protection is an issue of regional or international scope and importance.

This underlying problem is evidenced by the fact that a regime aimed at protecting traditional knowledge, like all intellectual property law, is based on the nation-state and the principle of territoriality.<sup>9</sup> The territorial limits of sovereignty preclude a country from giving extraterritorial effect to its regime to protect traditional knowledge. This means that each legislative protection of traditional knowledge has a separate existence in each sovereign state in which it is issued. The key problem here is that as communities in neighboring countries may lay claim to the same or similar traditional knowledge, the national recognition of their rights will overlap with rights given to other communities, by other countries, over the same or similar traditional knowledge. The overlapping of rights is due to the simultaneous recognition of the rights of different holders by different national legal systems over the same or similar traditional knowledge.<sup>10</sup> Given that a national framework is not suitable to solve this issue, the ultimate solution would be the creation of a regional (supranational) *sui generis* regime for the protection of traditional knowledge held or shared by indigenous peoples of the various nations within a region, as is the case in the Amazon region, across national borders. In other words, a regional regime is essential to achieve coordinated legal effect in the various jurisdictions.

In light of these issues, it is argued in this thesis that when two or more different indigenous peoples claim overlapping traditional knowledge rights, none of these peoples should own the entire or exclusive rights over such knowledge. It is also argued that traditional knowledge held or shared by more than one indigenous people should be protected by a single and unitary *sui generis* regime on behalf of all indigenous peoples claiming such knowledge and

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<sup>9</sup> Through international agreements some intellectual property rights arising in one jurisdiction may also be enforced in other jurisdictions.

<sup>10</sup> Álvaro Zerda-Sarmiento, *Derechos de Propiedad Intelectual Sobre Conocimiento Vernaculo* (Doctoral thesis, Universidad Nacional de Colombia, 2002) 56. Zerda-Sarmiento notes that norms are promulgated by countries, in consideration of their particular conditions; however, such norms ignore the situation in which many indigenous communities are located on national borders with other countries. Nor do they consider that much knowledge is shared by communities that share the same habitat but in some cases are located in different countries, as can be the case with some Amazonian indigenous peoples.

those who could have supplied the same or similar knowledge. For that reason, it is also argued that a regional and unitary *sui generis* regime for the protection of traditional knowledge should be established by the Amazonian countries as the sole and exclusive form of property protection for traditional knowledge associated with genetic resources. Such a regional *sui generis* regime should have uniform effect and validity throughout the Amazonian countries.

Further, a regional regime is needed to ensure equitable distribution of benefits for those indigenous communities who hold the same or similar traditional knowledge. Otherwise, the appropriation of the benefits by one community or one indigenous people is unfair to the other peoples who hold the same, or similar, knowledge. It can hardly be denied that unequal distribution of benefits would lead to social injustice. Further, the unfair distribution of benefits among the holders of traditional knowledge may provoke conflict between different indigenous peoples, particularly when several communities or peoples have traditionally used the same knowledge, but only one of them transfers its knowledge to a corporation or an individual and appropriates the benefits.<sup>11</sup> A regional *sui generis* regime would provide a comprehensive mechanism capable of equitably distributing the benefits within and among all holders of traditional knowledge, whether or not they are parties to an access contract for the use of their knowledge. Additionally, the adoption of a regional *sui generis* regime seems the best alternative to prevent competition between Amazonian indigenous peoples and countries that share common or similar genetic resources and associated traditional knowledge in such a way as to least undermine their common interests.<sup>12</sup>

### **III RESEARCH AIMS AND RESEARCH QUESTIONS**

While it is intended in this thesis to take full account of the need to preserve, maintain and respect traditional knowledge, the main aim of the thesis is to support the recognition of the rights of the Amazonian indigenous peoples to control access to traditional knowledge.

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<sup>11</sup> Corinna Heineke and Franziska Wolff, 'Access to Genetic Resources and the Sharing of Benefits: Private Rights or Shared Use for Biodiversity Conservation?' (2004) 26(28) *Environmental Law Network International* 26-28. See also Cynthia M. Ho, 'Biopiracy and Beyond: A Consideration of Socio-Cultural Conflicts with Global Patent Policies' (2006) 39 *Michigan Journal of Law Reform* 433-63. See also Erica-Irene Daes, *Protection of the Heritage of Indigenous People*, Human Rights Study Series (1997) 33.

<sup>12</sup> Convention on Biological Diversity, United Nations on Environment Programme, Conference of the Parties, *Decision VIII/5. Article 8(j) and Related Provisions*, 8th mtg. [Section II E (Para.1)], (2006). Decision VIII/5 invites countries with transboundary distribution of some biological and genetic resources and associated traditional knowledge to consider the establishment of regional *sui generis* frameworks for the protection of traditional knowledge, with the full and effective participation of indigenous and local communities.

Therefore, the emphasis is on protecting traditional knowledge shared or held by different indigenous peoples and the fair and equitable sharing of the benefits arising out of the use of traditional knowledge. In light of these issues, this thesis considers the need for developing a regional *sui generis* regime. It is argued that this regime should be based on the premise that all indigenous peoples who have a key role in developing and/or preserving traditional knowledge should share the rights over and the benefits arising from the shared knowledge.

The main objective of this thesis is to provide a set of core recommendations for creating a regional *sui generis* regime to protect traditional knowledge held or shared by more than one Amazonian indigenous people. To comply with this objective, this research answers two questions. These are:

- Why should traditional knowledge be protected?
- How should traditional knowledge held or shared by more than two Amazonian indigenous people be protected?

In this context, the research aims to:

- (i) examine the evolution of the traditional knowledge of the Amazon region in the various human and physical environments;
- (ii) examine the nature and the main characteristics of traditional knowledge;
- (iii) examine the reasons for the protection of traditional knowledge;
- (iv) examine whether the patent regime can be used as a means to protect the traditional knowledge of Amazonian indigenous peoples or whether the stock of traditional knowledge can itself be the subject-matter of protection through the mechanism of patents;
- (v) analyze the existing alternative *sui generis* models proposed for the protection of traditional knowledge;
- (vi) explore the feasibility of utilizing the framework of customary laws to regulate access to and protection of traditional knowledge; and
- (vii) examine the legal and administrative measures that Amazonian countries are adopting to protect traditional knowledge.

This information is then used to elaborate a set of core recommendations for the creation of a regional *sui generis* regime for the protection of traditional knowledge held or shared by more than one Amazonian indigenous people.

#### IV SCOPE OF THE THESIS

There are three limitations on the scope of this thesis regarding the subject matter of the analyses, the geographic area, and the holders of rights.

Firstly, this thesis is particularly concerned with the legal protection of traditional knowledge associated with genetic resources and its derivatives, such as bio-molecules, genes and extracts, and related biological resources.<sup>13</sup> Attention will be given to derivatives of the genetic resources in light of the fact that what is accessed is often not so much the physical genetic material as the knowledge of its use and properties.<sup>14</sup> Another reason why this thesis is focused on genetic resources and its derivatives is because the Bonn Guidelines call for benefit-sharing from the commercial and other utilization of genetic resources and their derivatives and products.<sup>15</sup>

The second limitation is that this thesis focuses on the Amazon region which includes portions of Brazil, Bolivia, Colombia, Ecuador, French Guyana, Guyana, Peru, Surinam, and Venezuela. It should be noted that the role of French Guyana has not been considered in this thesis, notwithstanding the fact that it shares part of the Amazon region. This is because French Guyana is an overseas 'department' of France which belongs to the European Union,<sup>16</sup>

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<sup>13</sup> The term 'associated' is used in this thesis to establish a link between traditional knowledge and genetic resource about its useful application.

<sup>14</sup> Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies, and Institutions* (2003) 18.

<sup>15</sup> United Nations on Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Decision VI/24: Access and Benefit-sharing as Related to Genetic Resources. Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*, 6<sup>th</sup> mtg, [Art. 44 (i)], (2002).

<sup>16</sup> Although the French Constitution of 1958 (Arts 74 and 75) already recognized the specific social and cultural characteristics of the French overseas collectivities, it was only in the 1990s that the French State recognized the existence of indigenous Amerindian communities or peoples in French Guiana. Currently, indigenous communities possess the rights recognized under the constitutional principle of the equality of all citizens before the law (Art. 1 of the Constitution), including the enjoyment of intellectual property rights. They also have the right to support themselves and to ensure their continuity and cultural development. They also have rights to use their customary law. The customary authorities were officially recognized by the regional council in 1988 and currently they have been granted an official place in the public institutions of the overseas collectivities. In French Guiana, customary leaders receive allowances from public funds. Initiatives to support regional languages are being conducted in overseas collectivities. The State has a special interest in preserving the traditional lifestyle of the Amerindian and Maroon communities living in French Guiana. For this reason, the State has conditioned the access to the upper reaches of the rivers to a prefectorial authorization. The State has



and because it is not a party to the *Treaty for Amazon Cooperation*.<sup>17</sup> However, it should be noted that many of the recommendations of this thesis can also be applied to traditional knowledge held by indigenous peoples from French Guyana.

Another limitation of the thesis is that notwithstanding the fact that Article 8(j) of the *Convention on Biological Diversity* (CBD) refers to 'indigenous and local communities',<sup>18</sup> this thesis refers exclusively to indigenous peoples. It is acknowledged, however, that local communities also have their systems of knowledge. The main reason why this thesis focuses on indigenous peoples rather than on indigenous peoples and local communities is that although there are some commonalities between indigenous peoples and local communities regarding the misappropriation of their knowledge and genetic and biological resources, there are also significant differences in their cultures, social institutions and values and also in terms of their concerns and expectations in this regard.<sup>19</sup> In general, indigenous peoples' claims and statements are based on the need for recognition of, and/or respect for their rights to self-determination, self-government and the rights to control their economic and cultural development, including their cultural rights. These extend to the rights to maintain and express distinct culture and language, and their demands for territory rights relating to land and resources therein. Unlike indigenous peoples, local communities do not usually claim to be distinct peoples or to have rights to self-determination. In addition, local communities' demand for lands is related to issues of land tenure rather than rights to territory.<sup>20</sup> Another reason for the exclusive focus of this thesis is that special rights have already been recognized and granted to the Amazonian indigenous peoples by Amazonian countries, while local communities have not been, in general, the subject of recognition of special rights or

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also guaranteed to these communities basic social security and health cover and, since 1987, has given them the right to be granted lands along with common user rights. These communities also enjoy all rights over natural resources. Indigenous peoples living in the State-administered lands in French Guiana had their common use rights for hunting, fishing and any other activity essential to their subsistence acknowledged by different documents, as such: Decree 87,287 of 14 August 1987, Law of 30 December 1989, Decree 92,246 of 16 January 1992. The recognition was geography-based rather than by ethnic group, and thereby avoided the impossibility of recognizing the former occupation of a population on French territory. French law includes no specific legal standards to protect the rights of indigenous communities to their intellectual property. Source: Compiled from Laurence Bérard, Marie Cegarra, Marcel Djama, Sélim Louafi, Philippe Marchenay, Bernard Roussel and François Verdeaux (eds), *Biodiversity and Local Ecological Knowledge in France* (2005)

<sup>17</sup> *Treaty for Amazon Cooperation*, opened for signature 3 July 1978, (entered into force 3 July 1978) (TCA).

<sup>18</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, (entered into force 5 June 1992) (CBD) Art. 8(j).

<sup>19</sup> Darrell Addison Posey, Graham Dutfield, K. Plenderleith, T. Willard and S. Mcfall, 'Indigenous Peoples and Farmers: Identifying Commonalities and Divergencies Between Indigenous Peoples and Farmers' Groups' (GRAIN, 1996) Part A.

<sup>20</sup> Darrell Addison Posey, 'Mind the Gaps: Identifying Commonalities and Divergences between Indigenous Peoples and Farmers Groups' (Paper presented at the Conference on Protecting Knowledge. Traditional Resource Rights in the New Millennium, 1996).

treatment at national or international level.<sup>21</sup> The regional *sui generis* regime envisaged in this thesis would aim not only to recognize indigenous peoples' rights over their traditional knowledge, but also to give practical and efficient effect to the rights already recognized by the Amazonian countries. It would do this by recognizing and respecting indigenous peoples' ability and authority to control the ownership of, and access to their traditional knowledge together with the right to decide, determine, and authorize when, where and how their traditional knowledge could be accessed. In summary, because the values, needs and concerns of indigenous peoples differ from those pursued by local communities, no attempt to provide protection of traditional knowledge held by local communities is made in this thesis.

## V RESEARCH METHODOLOGY

This thesis is essentially an analysis of the most effective ways of protecting traditional knowledge associated with genetic resources held by indigenous peoples of the Amazon region. It also examines the key criteria related to the efficiency and fairness of the existing laws and regulations governing intellectual property laws where these are used as a means to protect traditional knowledge held by more than one indigenous people. The thesis relies on the assumption that efficiency is a goal which the law should reflect, and that laws should be changed when they fail to achieve this end. It follows, therefore, that a positive approach is important because the research aims to ascertain and evaluate the current and potential efficacy of existing legal regimes in protecting traditional knowledge. Further, a normative approach is also important as the main objective of this thesis is to generate recommendations for the development of a regional *sui generis* regime for protection of traditional knowledge.

The search of the literature is designed to provide answers to the questions of 'why traditional knowledge should be protected and how traditional knowledge held or shared by more than one Amazonian indigenous people should be protected.' These questions are addressed in Parts Two and Three of the thesis. The literature search involves an extensive study of the Amazon region and its indigenous peoples, their conditions, concerns and desires, and their

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<sup>21</sup> Note should be made on the fact that, Brazilian Provisional Act No 2,186-16 recognizes that the descendants of Quilombo communities can be subject of the rights over traditional knowledge. Further, the *Andean Community of Nations Decision 391* recognizes that members of the Afro-American communities also have rights over traditional knowledge. See *Act Regulating Access to the Genetic Heritage, Protection of and Access to Associated Traditional Knowledge, Provisional Act No 2,186-16, 2001*, (Brazil) (Art. 8), (Provisional Act No 2,186-16) <<http://www.mma.gov.br/port/cgen/index.cfm>>. See also *Andean Community of Nations Decision 391: Common Regime on Access to Genetic Resources*, opened for signature 2 July 1996, (entered into force 2 July 1996) (Decision 391). See also Crucible Group, *Seeding Solutions. Volume 2. Options for National Laws Governing Access to and Control over Genetic Resources* (2001) Sec. 2 (Part One).

customary law; the nature and value of traditional knowledge of these peoples; the issues of their individual and collective identification, equity and cultural survival, the utilitarian values of traditional knowledge, and existing legislation and proposed *sui generis* regime for protecting the rights of the holders of traditional knowledge in the Amazon region.

While direct consultation and discussions with Amazonian indigenous peoples and/or their representative organizations is not undertaken in this thesis, detailed information about indigenous peoples' needs, interests and expectations is obtained from reliable first-hand sources, such as declarations and statements made by indigenous peoples and by representative organizations, including the Coordinator of Indigenous Organizations of the Amazon Basin (COICA); as well as the results of WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999).

The methodology adopted in this thesis involves a preliminary phase of reviewing the vast array of relevant literature about traditional knowledge protection. The relationship among intellectual property, biodiversity and genetic resources and traditional knowledge has been the subject of several studies and has occasioned intense and complex international debates which, to date, however, have not led to consensus. To gather appropriate information on which to base the formulation of this thesis, official documents and reports from relevant international fora is also considered. These sources include official reports, meeting reports and minutes, as well as submissions from member countries within the contexts of the *Convention on Biological Diversity* (CBD), the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) of the World Intellectual Property Organization (WIPO), the World Trade Organization (WTO), specially the implications of the *Agreement on Trade Related Aspects of Intellectual Property Rights* (TRIPs Agreement) in relation to traditional knowledge, the United Nations Conference on Trade and Development (UNCTAD), the International Labour Organization (ILO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO), and the *International Treaty on Plant Genetic Resources for Food and Agriculture* (FAO Treaty)<sup>22</sup>. In addition, refereed academic articles on indigenous peoples and intellectual property rights, the Amazonian countries' reports about indigenous peoples and traditional knowledge, proceedings of various symposia and seminars, as well as other

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<sup>22</sup> International Treaty on Plant Genetic Resources for Food and Agriculture, opened for signature 3 November 2001, (entered into force 29 June 2004) (FAO Treaty). Available at <http://www.fao.org/ag/cgrfa/itpgr.htm> at 17 March 2005.

relevant publications, monographs and papers are also considered.<sup>23</sup> Further, the literature reviews that undertaken also cover the constitutions and the legislation of the Amazonian countries in relation to the recognition of indigenous peoples' cultural diversity and special rights granted to them, such as rights to self-government over natural resources within their lands. It also involves critical analysis of the measures adopted to protect and regulate access to, and use of, traditional knowledge. This analysis aims to assess the adequacy, relevance and efficacy of those legal mechanisms adopted for the protection of traditional knowledge, as well as to consider how such measures could be improved in order to achieve more efficient protection of traditional knowledge. The results of the research and the analyses of the existing and proposed *sui generis* regimes are then used as a guide for the development of the foundation of a regime to give effective protection to the rights of indigenous peoples of the Amazon region over their traditional knowledge in cases where two or more indigenous peoples, in the same or different countries, or trans-boundary situations have and/or share the same traditional knowledge.

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<sup>23</sup> For instance, paper by the Genetic Resources Action International (GRAIN), the Center for International Environmental Law (CIEL), the Crucible Group, and the Rural Advancement Foundation International (RAFI) among others were considered by this thesis.

## VI STRUCTURE OF THE THESIS AND OVERVIEW OF THE CHAPTERS

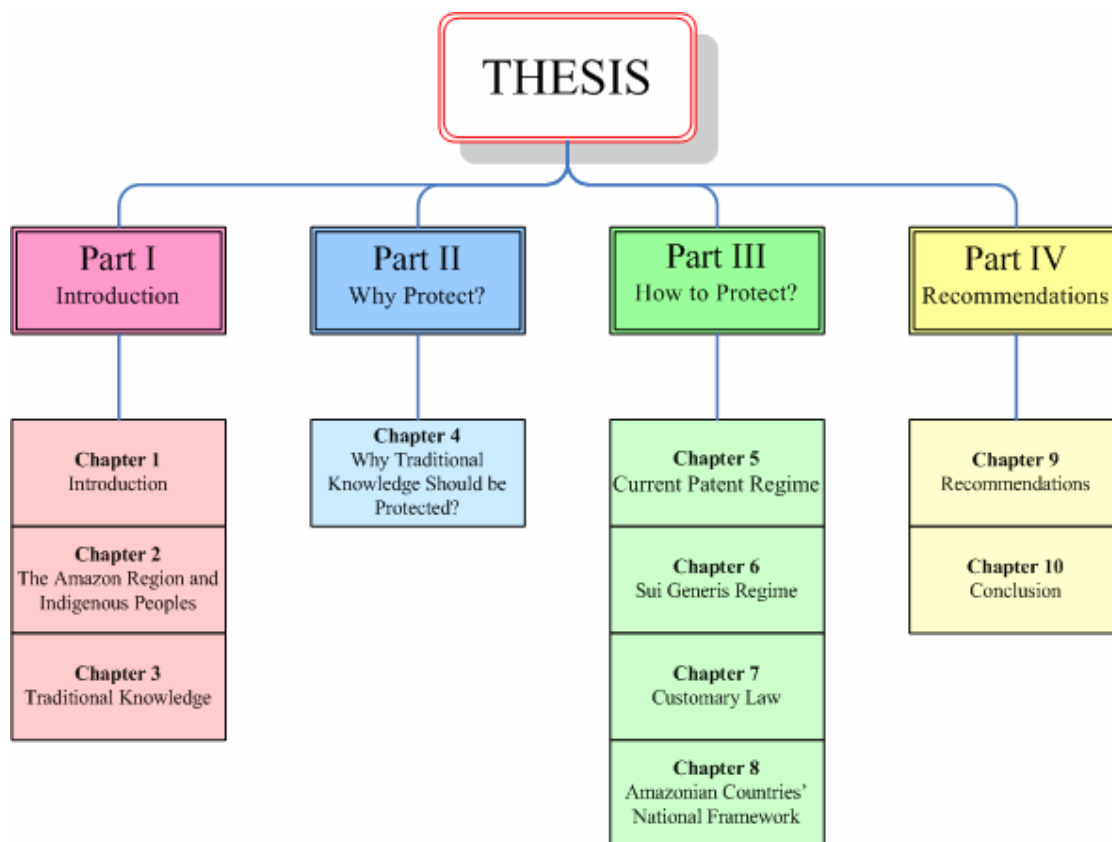


Figure 1: Diagram of the thesis structure

The thesis is divided into four parts. Part One sets out the aims of the thesis, provides relevant background information and defines some of the key issues covered. This part consists of three chapters. Chapter 1, which is the introductory chapter, sets out an overview of the research problems, aims and scope of the thesis. It also contains the research methodology. Chapter 2 focuses on the Amazon region and the Amazonian indigenous peoples. It is divided into six sections. The first section is introductory, while the second provides general background on the Amazon region. It also provides an overview of the importance of the biological diversity within the Amazon rainforest. The conclusion reached in this section is that the Amazonian countries represent an important case through which to examine the possibility of adopting a regional *sui generis* regime for the protection of traditional knowledge held by more than one indigenous people. The third section illuminates the ethnic and cultural diversity of the Amazon region. Special attention is given to the issue of the individual identity of an indigenous person and the collective identity of an ethnic group. One

of the key problems identified in this section is that there are some ambiguities regarding membership in and boundaries between Amazonian indigenous groups. Another problem is the absence of efficient criteria for classifying and identifying indigenous peoples. It is argued in this section that these problems can make it difficult to identify the source of knowledge and pinpoint which clans, families, groups or people have authority over certain knowledge. The fourth section provides an overview of the main principles, values and basic tenets of the belief systems which comprise the culture of the Amazonian indigenous peoples. It also shows that, in general, Amazonian indigenous peoples still maintain and preserve their culture, values and institutions. The fifth section demonstrates the current concerns and expectations of the Amazonian indigenous peoples regarding the protection and access to their traditional knowledge. The sixth section presents the summary of findings.

Chapter 3 examines the inherent nature, main characteristics and types of traditional knowledge that need to be considered when attempting to identify why and how such knowledge should be protected. This chapter is divided into four sections. The first section is introductory. The second section examines the ways in which such knowledge has been both described and defined and its main characteristics. It also deals with indigenous peoples' concept of ownership and shows that the lack of clear demarcation between what belongs to the general community, a specific community or communities, or individuals within these communities, makes it difficult to identify those who have authority over significant traditional knowledge. This lack of clear demarcation also makes it difficult to identify those clans, families, groups or peoples who are entitled to share the benefits derived from traditional knowledge. The third section addresses the question of whether the notions of the 'commons' and 'public good' can be applied to traditional knowledge. It also examines the impact which the concept of 'public domain' has in delimiting or in defining the boundaries of the protection of traditional knowledge. It also demonstrates the inextricable link between biological diversity and traditional knowledge. The fourth section presents a summary of findings.

Part Two of the thesis deals with the question of why traditional knowledge should be protected. Part Two consists of one chapter, Chapter 4, in which five answers to this question are presented. This chapter is divided into seven sections. The first section is introductory, while the second deals with the first justification for the protection of traditional knowledge is based on the need for improving the livelihood of traditional knowledge holders and for

preserving the cultural integrity of indigenous peoples. The third section examines the second justification refers to the need to reinforce and to promote equity, equality and non-discrimination with regard to protecting traditional knowledge. The fourth section examines the third justification for the protection of traditional knowledge which is based on the recognition of potential contribution that traditional knowledge can make to the development of new agricultural, pharmaceutical and botanical products and processes. The fifth section presents the fourth justification for the protection of traditional knowledge. It is argued that traditional knowledge should be protected because it plays an important role in the conservation of biological diversity, in combating desertification and in achieving other environmental goals. The sixth section examines another reason to protect traditional knowledge. Here, the argument is that the Amazonian countries need to protect traditional knowledge to fulfill both legal and moral obligations posed by international treaties which they have ratified. The seventh section presents the summary of findings.

Part Three of the thesis addresses the question of how traditional knowledge can be protected. This part consists of four chapters. Chapter 5 critically examines whether the patent regime provides the appropriate intellectual property structure to protect the traditional knowledge of Amazonian indigenous peoples. The chapter is divided into four sections. The first section is introductory, while the second section examines whether traditional knowledge fulfils the requirement of patentability. This analysis suggests that there are a number of difficulties in trying to fit traditional knowledge within the requirements for patent protection. It is also concerned with the appropriation by a third person of traditional knowledge through the patent process. It is argued that the current concept of prior art within the patent regime undermines indigenous peoples' rights over their traditional knowledge. The third section briefly examines the use of other intellectual property regimes as mechanisms to protect traditional knowledge. This analysis shows that even though trademarks, collective, and certification marks, geographical indications and designation of origin are useful to protect products based on traditional knowledge, they are not able to protect the knowledge (itself) on which the product is based. As regards plant breeders' rights, it was concluded that landraces or traditional cultivars do not fulfill the requirement for protection under such regime. Finally, databases were considered to be useful as a mechanism to protect traditional knowledge from unwanted property rights filed by non-indigenous persons and also companies and to conserve, promote and as part of a legislative system for the assertion of rights over traditional knowledge and management of such knowledge.

Chapter 6 critically examines some of the more significant *sui generis* regimes which have been developed as alternative means to protect traditional knowledge and/or to compensate indigenous peoples for the use of traditional knowledge. The aim of this chapter is to examine whether such regimes are capable of providing protection to traditional knowledge held by the Amazonian indigenous peoples. This chapter is divided into four sections. The first section is introductory. The second section examines the feasibility of using a number of alternative mechanisms – namely, Traditional Resources Rights (TRR); a Territory-based Approach; a Community Intellectual Rights Regime (CIR-Regime); Traditional Intellectual Property Rights (TIP rights); Property Rights in Traditional Biocultural Contribution; the Collective Bio-Cultural Heritage, and the Integrated System for the Protection of Traditional Knowledge – to protect traditional knowledge. This section illustrates the strengths and weaknesses of these proposed models and concludes that while there are positive features in these alternative proposals, they also suffer from a number of problems. To some extent, all these alternative proposals of *sui generis* regime are suitable for protecting traditional knowledge held by indigenous peoples within a state jurisdiction. However, none of them provides any solution to the problem of traditional knowledge held or shared by indigenous peoples from different countries. The third section examines whether the alternative compensatory regimes – namely, the Indigenous Medicinal Knowledge Regime (IMK-Regime), the Community Knowledge Fund, and the Compensatory Liability Regime (CLR) – are suitable to compensate indigenous peoples for the use of their knowledge. All these models simply suggest financial redress to indigenous peoples rather than granting them the right to control access to traditional knowledge. The fourth section presents the summary of findings.

Chapter 7 critically examines the potential use of customary law as a means to protect and regulate access to traditional knowledge. This chapter is divided into six sections. The first section is introductory. The second part provides an overview of the Amazonian indigenous peoples' rights to autonomy or self-government. The third section evaluates the feasibility of using customary law as the basis for the regulation of access to and protection of traditional knowledge. This analysis shows that there are a number of difficulties in using customary law as a means to protect traditional knowledge. The fourth section examines the more significant differences between statutory/common law systems and customary law systems. The fifth section considers the extent of the application of customary law in the creation of a regional *sui generis* regime aimed at protecting traditional knowledge. It is argued that a set of common principles and rules found within customary laws governing the access to and use of



traditional knowledge would facilitate the application of customary laws; further, it would provide the basis for developing a *sui generis* regime. Therefore, it is recommended that a set of common principles and rules of customary law, regarding the protection of traditional knowledge, should be identified and codified. The sixth section presents the summary of findings.

Chapter 8 critically examines the legal and administrative measures adopted by Amazonian countries to protect traditional knowledge. The chapter is divided into three sections. The first section is an introduction. The second section examines the measures that the Amazonian countries have adopted jointly at the international and the regional levels, and individually at the national level, to protect traditional knowledge. This section provides a review and critique of the strengths and weaknesses of the national legislations enacted by Peru and Brazil. The third section presents the summary of findings and outlines a number of political conditions which can be considered as favorable for the drawing up of a proposal for a regional *sui generis* system. Some practical conditions which support the adoption of a regional system as a mechanism for the equitable distribution of benefits among the holders of traditional knowledge are also highlighted.

Part Four of the thesis consists of two chapters. Chapter 9 considers how traditional knowledge held or shared by more than one Amazonian indigenous people should be protected. The chapter is divided into five sections. The first section is an introduction. The second section sets out general recommendations linked to the issues of the creation and implementation of the Amazonian *sui generis* regime, as well as those matters affecting the use, exercise and administration of rights and interests in and the monitoring of the regime. The third section presents specific recommendations on several actions that require prior attention and consideration in order to achieve the goals of designing and implementing the Amazonian *sui generis* regime. The fourth section sets out the specific guiding recommendations which are linked to the issues of the implementation of the Amazonian *sui generis* regime, as well as those matters affecting the use, exercise and administration of rights and interests in and the monitoring of the regime. The fifth section summarized the benefits arising from the adoption of a *sui generis* regime. Chapter 10 concludes with a summary of the main findings and suggests issues for future research.

## CHAPTER 2

### THE AMAZON REGION AND THE AMAZONIAN INDIGENOUS PEOPLES

#### I INTRODUCTION

One of the aims of this chapter is to explain why the Amazon region was chosen as the focus for this thesis when the misappropriation of traditional knowledge is a world wide problem. In this context, it explores and assesses the importance of the Amazon rainforest and provides relevant information about the Amazon region. It also aims to show the ethnic and cultural diversity of the Amazon region and to demonstrate the current concerns and expectations of the Amazonian indigenous peoples regarding the protection and access to their traditional knowledge.<sup>1</sup> A detailed review of the social, economic, political and legal situation of indigenous peoples in Amazonian countries lies beyond the scope of this thesis.<sup>2</sup>

While the focus is on ethnic and cultural diversity, it should be noted that to deal with indigenous peoples of the Amazon region is a complex and difficult task. There are a number of reasons for this including: the geographic enormity of the Amazon region; the extreme cultural, social, economic, political and ecological diversity within the region; and the absence of accurate data about the identification of the indigenous peoples, who they are, where they live and the size of their population. The existing criteria for classifying and identifying indigenous peoples are not, in a broader context, capable of assessing the full ethnic and cultural diversity of the Amazonian indigenous peoples or obtaining precise information about the size of their population. There is still some ambiguity regarding membership in, and boundaries between, indigenous groups.<sup>3</sup> It is argued in this chapter that the precise identification of the demographic factors relating to the Amazonian indigenous peoples is of vital importance given that special rights are to be recognized and/or granted to them based on their distinctive identity.

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<sup>1</sup> The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines the term 'culture' as 'a set of distinctive spiritual, material, intellectual and emotional features of a society or a social group. It encompasses, in addition to art and literature, lifestyles, ways of living together, values systems, traditions and beliefs, at <[http://portal.unesco.org/culture/en/ev.php-URL\\_.html](http://portal.unesco.org/culture/en/ev.php-URL_.html)> at 06 December 2005.

<sup>2</sup> For more information about the social, economic, political and legal situation of indigenous peoples in Amazon countries, see Chirif A., P. Garcia and R. Smith, *El Indígena y su Territorio Son Uno Sólo. Estrategias para la Defensa de los Pueblos y Territorios Indígenas en la Cuenca Amazónica* (1991) 35. See also Comisión Amazónica De Desarrollo Y Medio Ambiente, *Amazonía sin Mitos* (2 ed, 1994) .

<sup>3</sup> Stephen B. Brush, 'A Non-Market Approach to Protecting Biological Resources' in Tom Greaves (ed.), *Intellectual Property Rights for Indigenous Peoples. A Sourcebook* (1994) 133, 136.

The overarching aim of this chapter is to prepare the ground for the development of a set of core recommendations for the protection of identical or similar traditional knowledge held by indigenous peoples living in the Amazon region. The main contribution of this chapter will be to demonstrate the difficulties and importance of identifying who are the indigenous people who hold and/or share the rights over traditional knowledge. Further, understanding the differences between the cultures and the social, economic, political and legal situations of indigenous and the non-indigenous peoples is a prerequisite to any attempt to protect traditional knowledge.

## **II THE AMAZON REGION**

The Amazon region was chosen as the focus region for this thesis because of its outstanding biological and cultural diversity.<sup>4</sup> This diversity has resulted in the generation of a vast body of traditional knowledge of vital importance to both indigenous peoples and the rest of the world. The Amazon rainforest is the largest forest in the world and represents one third of all tropical forest left on the Earth. It covers nearly 8 million square kilometers, and includes portions of Brazil, Bolivia, Colombia, Ecuador, French Guyana, Guyana, Peru, Surinam, and Venezuela.<sup>5</sup> In addition, the Amazon River is the second longest river in the world, after the Nile, and it is the largest river system on the planet in terms of the volume of its watershed which is comprised of 1,100 rivers flowing through the Amazonian countries. The Amazon basin has about 20 per cent of the Earth's fresh water and at least 40 per cent of the world's freshwater fish, and approximately 25 per cent of the world's bird species are found there.<sup>6</sup>

The Amazon rainforest is the earth's richest source of biological resources.<sup>7</sup> It has arguably half of all the plant and animal species left on Earth.<sup>8</sup> Six of the Amazonian countries are listed among the fifteen most megadiverse countries in the world: Brazil is at the top of the list, followed by Colombia in second position, Peru in fourth, Ecuador in eighth, Venezuela in

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<sup>4</sup> Amazon Cooperation Council, *Recommendations for the ACTO Strategic Plan and Concept Paper for the Formulation on Agenda for Amazon Sustainability and an Amazon Sustainable Development Strategy* (2004) The World Conservation Union (UICN). Available at <<http://www.sur.iucn.org/publicaciones/documentos/documentos/165.pdf>> at 20 July 2004.

<sup>5</sup> Ibid

<sup>6</sup> Ibid.

<sup>7</sup> The term 'biological resources' is used to refer to genetic resources, organisms or parts thereof, populations, or any other biotic component of an ecosystem with actual or potential use or value for humanity.

<sup>8</sup> Russell A. Mittermeier and Cristina Goettsch Mittermeier, *Megadiversity Earth's Biologically Wealthiest Nations* (1997) 37.

tenth, and Bolivia in eleventh place.<sup>9</sup> The Amazon region is also the centre of origin of maize, potato, cassava, groundnut, beans and sweet potato.<sup>10</sup>

The Amazon rainforest is still largely untouched. Around 25 per cent of its total area has been demarcated as indigenous peoples' lands and a further 25 per cent is covered by areas of nature conservation, such as national parks and ecological reserves.<sup>11</sup> However, around 15 per cent of the Amazon rainforest's total area has been destroyed as a result of the opening of roads, colonization, timber exploitation, encroachment of the agricultural frontier, mining and logging activities.<sup>12</sup> This has introduced elements that have changed the hinterlands. As a result, in some cases, Amazonian indigenous peoples are abandoning or changing their traditional lifestyle and, consequently, the traditional diversity of food crops and medicinal plant resources is gradually being lost. In addition, indigenous peoples' contact with other cultures has provoked other changes which have resulted in the creation of alternative social structures and loss of traditional lifestyle.<sup>13</sup>

The Amazon and Andean regions were the homelands of some of the most developed civilizations of antiquity, including the Incas and Mayas. During this period, large empires and nations were created, hundreds of different languages evolved and knowledge related to agriculture and sciences was developed.<sup>14</sup> An estimated 7-10 million indigenous people lived in the Amazon rainforest at the time of European arrival.<sup>15</sup> However, in the late fifteenth and sixteenth centuries, indigenous populations from different ethnic groups were greatly reduced. The most cited estimate is that today there are 671 indigenous peoples recognized as such by Latin America states. In the Amazon basin, there are about 390 different ethnic groups speaking some 500 languages.<sup>16</sup> Estimates of the total indigenous population of the Amazon

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<sup>9</sup> Mittermeier and Mittermeier, above n 8, 31. The authors mention that the top 15 Megadiversity Countries are: Brazil, Colombia, Indonesia, Peru, Mexico, China, Australia, Ecuador, India, Venezuela, Bolivia, Madagascar, Democratic Republic of the Congo, the Philippines and South Africa.

<sup>10</sup> Jack Ralph Kloppenburg and Daniel L. Kleinman, 'Seeds of Controversy: National Property Versus Common Heritage' in Jack Ralph Kloppenburg (ed.), *Seeds and Sovereignty: The Use and Control of Plant Genetic Resources* (1988) 182, 182. See also David Cooper, Jan Engels and Emile Frison, *A Multilateral System for Plant Genetic Resources: Imperatives, Achievements and Challenges. Issues in Genetic Resources No 2* (1994) IPGRI <<http://www.ipgri.cgiar.org/Publications/pdf/464.pdf>> at 18 May 2006.

<sup>11</sup> Roger Plant and Soren Hvalkof, 'Land Titling and Indigenous Peoples' (Inter-American Development Bank, 2001) 44.

<sup>12</sup> Amazon Cooperation Council, *Recommendations for the ACTO Strategic Plan*, above n 4.

<sup>13</sup> Darrel A. Posey, *Kayapó Ethnoecology and Culture, Studies in Environmental Anthropology* (2002) 26.

<sup>14</sup> Rhett A. Butler, *Tropical Rainforests: Human Inhabitants. American Peoples of the Rainforest* (2006) Mongabay.com <[ainforests.mongabay.com/0704.htm](http://ainforests.mongabay.com/0704.htm)> 23 April 2006.

<sup>15</sup> Ibid.

<sup>16</sup> Coordinator of Indigenous Organizations of the Amazon Basin (COICA), *Amazon Indigenous Agenda. Returning to the Maloca* (2005) 10.

region range from 1 million to 2.8 million.<sup>17</sup> Further, there is evidence pointing to the possibility that there are about 80 groups of people that are still isolated, that is, not yet in contact with others cultures. Many of these isolated peoples are within frontier zones of Ecuador-Peru and Peru-Brazil.<sup>18</sup>

The biological diversity and associated traditional knowledge in the Amazon are sources of remarkable potential for economic purposes.<sup>19</sup> However, in general, the Amazonian countries still possess only limited scientific and technological capacity, along with similarly limited industrial development, to enable them to use and/or modify genetic resources and associated traditional knowledge in ways and capacities that are capable of protection. As a result, few of them have been able to collect, classify, record, and investigate their biological diversity and associated traditional knowledge.<sup>20</sup> Therefore, it has been said that 'is likely that access to and use of genetic resources and associated traditional knowledge will continue to be made mainly by technology-rich countries.'<sup>21</sup>

Further, traditional knowledge is essential throughout much of the Amazon region, especially in the forest and remote areas, because of the high dependence of the population on traditional knowledge related to agriculture, traditional medicine and food production as economic and subsistence activities. The Amazonian indigenous peoples' traditional knowledge already generates a wide range of products and services which have contributed to the global market economy. The value of such knowledge to the economies of the Amazonian countries is inestimable. Accordingly, the Amazonian countries present an important opportunity to examine the efforts made by them to regulate the access to their genetic resources and associated traditional knowledge. In general, all Amazonian countries have attempted to

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<sup>17</sup> According to census information collected in 2000, the total indigenous population in the Latin America was over 30 million.

<sup>18</sup> COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 16, 38.

<sup>19</sup> The term 'biological diversity' is used to refer to the variability among all living organisms and ecosystems or habitats, including the variety within species, between species and of ecosystems.

<sup>20</sup> Food and Agriculture Organization of the United Nations (Fao), *Global Forest Resources Assessment 2000* (2000) Chapter 43. The Food and Agriculture Organization (FAO) estimates that the contribution of the forest resource to the national economies of the Amazon region is still very low, providing less than 2 per cent of GNP, except for Brazil where it is estimated to be 5 per cent. See also Jack Ralph Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology, 1492-2000* (1988) 189.

<sup>21</sup> Boniface Guwa Chidyausiku, 'Article 27.3(b) of the TRIPS Agreement: the Review Process and Developments at National and Regional Levels' in Christophe Bellmann, Graham Dutfield and Ricardo Meléndez-Ortiz (eds), *Trading in Knowledge. Development Perspectives on TRIPS, Trade and Sustainability* (2003) 101-03. Chidyausiku note that 'the great majority of patents are granted to corporations, institutions and individuals from the North. For example, almost all biotechnology-related patents originate from industrialized countries with 37 per cent coming from the United States, 37 per cent from Japan and 19 per cent from Western Europe.'

develop a legal and/or contractual framework for protecting and/or controlling access to genetic resources and associated traditional knowledge, and ensuring benefits arising from their use are shared fairly. Thus, their national experiences will provide lessons that may assist in developing, implementing, and enforcing a regional *sui generis* regime governing the protection and access to traditional knowledge. Together, the Amazonian countries represent a wide range of cultural, legal, and socio-economic contexts. As a result, the outcomes of this analysis may be applicable to other indigenous peoples and nations, particularly where traditional knowledge is shared by several ethnic groups or communities which live across national borders, as is the case, for example, in Africa where the same tribe lives in parts of South Africa, parts of Swaziland and parts of Mozambique.

The Amazonian countries have already recognized the importance of adopting a joint position at international level on the subjects of access to genetic heritage and access to and protection of indigenous peoples' traditional knowledge.<sup>22</sup> Meantime, the Andean Community has established a common legislation which provides the main nexus enabling access to the genetic resources and their intangible components or traditional knowledge.<sup>23</sup> The Andean Community has also stated the member countries' intention of formulating a special regime, or harmonizing their legislation with the aim of reinforcing the protection of the traditional knowledge held by indigenous peoples.<sup>24</sup> These actions provide an excellent base from which to begin research into whether a regional *sui generis* regime could be effectively pursued by Amazonian countries.

For these reasons, the Amazonian countries present an important case study to examine the possibility of adopting a regional *sui generis* regime for the protection of traditional knowledge. This thesis seeks to provide a clear picture of what has been done by the

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<sup>22</sup> *Declaration of Manaus*, opened for signature 14 September 2004, (entered into force 14 September 2004) (Declaration of Manaus) <<http://www.otca.org.br/en/institucional/index.php?id=1084>> at 15 September 2005.

<sup>23</sup> The Andean Community (CAN) was created through the *Andean Subregional Integration Agreement*, opened to signature 1969, (entered into force 1969) (Cartagena Agreement). It started operating in 1997. The main objectives of this Agreement are to promote the balanced and harmonious development of the Member Countries under equitable conditions, through integration and economic and social cooperation; to accelerate their growth and the rate of creation of employment; and to facilitate their participation in the regional integration process, looking ahead toward the gradual formation of a Latin American Common Market. The CAN enjoys regulatory authority through decisions and resolutions. As a rule, Decisions need no national-internal approval processes and become law automatically upon their publication in the Community's Official Journal. Until April 2006, Venezuela was also part of the Andean Community (CAN). On 22 April, Venezuela formally denounced the Cartagena Agreement, and withdrew from the Andean Community. Therefore, the term 'Andean Community' refers collectively to Bolivia, Colombia, Ecuador and Peru.

<sup>24</sup> *Andean Community of Nations Decision 391: Common Regime on Access to Genetic Resources*, opened for signature 2 July 1996, (entered into force 2 July 1996) ('Decision 391') <<http://www.comunidadandina.org/INGLES/normativa/D391e.htm>> at 4 April 2006.

Amazonian countries to protect traditional knowledge, and how effective those measures have been,<sup>25</sup> as well as to highlight some of the gaps and unresolved challenges. Finally, it aims to provide a set of core recommendations for the development of a regional *sui generis* regime to protect traditional knowledge at Amazon region level.

### III THE AMAZONIAN INDIGENOUS PEOPLES

#### A *Definition of the Term 'Indigenous Peoples'*

The *Convention Concerning Indigenous and Tribal Peoples in Independent Countries* (ILO 169) is the only international treaty which provides a working definition of the term 'indigenous peoples'.<sup>26</sup> In fact, Article 1 of ILO 169 does not provide a definition; rather it contains a statement of coverage, indicating that the Convention applies to:

- (a) Tribal peoples in independent countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations;
- (b) Peoples in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present State boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions.

In general, the term 'indigenous peoples' has been used to refer to the original inhabitants of the Americas, Australia, and the Pacific, while the term 'tribal peoples' is commonly used to refer, for example, to Afro-descended tribal peoples in Central America and to tribal peoples in Africa, such as the San or Maasai, who may not have lived in the region they inhabit longer than other population groups.<sup>27</sup> However, neither of these concepts has met with universal

<sup>25</sup> See Chapter 8 of this thesis for more information about the measures adopted by Amazonian countries to protect traditional knowledge.

<sup>26</sup> *Convention Concerning Indigenous and Tribal Peoples in Independent Countries*, opened for signature 27 July 1989, (entered into force 27 July 1989) ('ILO 169') <<http://www.unhchr.ch/html/menu3/b/62.htm>> at 17 October 2005.

<sup>27</sup> United Nations, Department of Economic and Social Affairs, Secretariat of the Permanent Forum on Indigenous Issues, 'The Concept of Indigenous Peoples. PFII/2004/WS.1/3' (Paper presented at the Workshop on Data Collection and Disaggregation for Indigenous Peoples, New York, 2004).

acceptance.<sup>28</sup> In light of this, the necessity of defining indigenous people has been discussed by states in different international arenas, without achieving consensus.<sup>29</sup>

Given the fact that the recognition of indigenous peoples' rights over traditional knowledge is often based on their distinctive identity and culture, from a legal standpoint the effective identification of an indigenous person as well as their collective identity is necessary for the legitimacy of their claims to rights. In approaching this task, it is important to note, in the last few years the recognition of and respect for indigenous peoples' rights have led to an increase in the number of claims by individuals or communities to be officially recognized as indigenous people. This has particularly been the case in Brazil, Bolivia and India.<sup>30</sup>

In the context of traditional knowledge protection, other concerns remain regarding the issue of the identification and definition of indigenous people. The central concern here is not only to identify or define who is an indigenous person and who is not, or to identify to which clan, family, group or people they actually belong, but rather to identify which clans, families, groups or peoples maintain their traditional lifestyle and their traditional knowledge, and then to determine which of these have authority over traditional knowledge. This sequential process of identification is an essential pre-condition to determine the holders of the rights over traditional knowledge.

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<sup>28</sup> Darrell A. Posey, 'Biodiversity, Genetic Resources, and Indigenous Peoples in Amazonia: (Re) Discovering the Wealth of Traditional Resources of Native Amazonians' (Paper presented at the Conference: Amazonia 2000: Development, Environment, and Geopolitics, Institute of Latin American Studies of the University of London, 1998).

<sup>29</sup> For more information about countries' positions about the issue of definition of the term 'indigenous people', see Russel Lawrence Barsh, 'Indigenous Peoples and the UN Commission on Human Rights: A Case of the Immovable Object and the Irresistible Force' (1996) 18.4 *Human Rights Quarterly* 782-92.

<sup>30</sup> According to a study made by the Brazilian Institute of Geography and Statistics (IBGE), from the data obtained by the population census of 1991 and 2000, the number of Brazilians considered to be indigenous grew by 150 per cent in the decade of the 1990s (this rate is almost six times greater than that of the non-indigenous persons). In 1991, the percentage of indigenous people in relation to the total population of Brazil was 0.2, which is equivalent to 294,000 people. In 2000, that percentage went up to 0.4 per cent of the population or 734,000 people. IBGE considers that the natural population growth (by giving birth) is not capable of justifying the phenomenal growth rate of the indigenous peoples' population. Therefore, IBGE considers that other factors would have contributed to this. The first hypothesis considered by IBGE is about the increase in the proportion of people that self-identified themselves as indigenous in the census of 2002. Previously, this portion of the population was classified as non-indigenous persons. The second possible justification considered refers to the immigration of other indigenous people from neighbouring countries such as Bolivia, Ecuador, Paraguay and Peru. See <[http://www.ibge.gov.br/home/estatistica/populacao/tendencia\\_demografica/indigenas/default.shtm](http://www.ibge.gov.br/home/estatistica/populacao/tendencia_demografica/indigenas/default.shtm)>. See also Instituto Socioambiental, *Emerging Identities* (2005) Instituto Socioambiental, <<http://www.socioambiental.org/pib/english/whwhhow/who/idemergi.shtm#t2>> at 06 November 2005.



Another concern is that, from the perspective of the *Convention on Biological Diversity* (CBD),<sup>31</sup> the cornerstone concept underlying the identification of indigenous people is the requirement that indigenous people maintain their traditional lifestyle by living in close contact with nature.<sup>32</sup>

## **B      *Individual Identity and Size of the Indigenous Peoples' Populations***

South America has a diverse ethnic and cultural mix. This is a result of a rich racial and cultural mixture of various ethnic origins, such as European (including Portuguese, Spanish, German, Italian, Polish), African, Indigenous peoples from about 390 distinct ethnic groups and Mestizos - descendants of all of these groups. As a result, Brazil, Peru and Colombia are classified, respectively, as seventh, tenth and eleventh among the 12 countries in the world with the greatest degrees of human cultural diversity.<sup>33</sup>

The size of the indigenous population in the Amazon region varies according to the criteria adopted or indicators used for data collection in the assessment of the size of its population.<sup>34</sup> The most commonly cited estimate is that there are about one million indigenous persons in the Amazon region. However, the Coordinator of Indigenous Organizations of the Amazon Basin (COICA) estimates that there are roughly 2.8 million indigenous persons living in the

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<sup>31</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, (entered into force 5 June 1992) (CBD) Art. 8(j) <<http://www.biodiv.org>. at 11 October 2005.

<sup>32</sup> CBD, above n 31, Art. 8. It can be inferred from Art. 8 that, from the perspective of the CBD, the fundamental objective of accessing and sharing of the benefits arising from the use of traditional knowledge is to support the conservation and sustainable use of biological diversity, in particular in in situ conditions.

<sup>33</sup> Mittermeier and Mittermeier, above n 8. Accordingly, the top 12 countries in the world for human cultural diversity are: 'Papua New Guinea, India, Indonesia, USA, Democratic Republic of the Congo, Mexico, Brazil, Australia, the Philippines, Peru, Colombia and China.'

<sup>34</sup> Fabiana Del Popolo and Susana Schkolnik, 'Census and Indigenous Peoples in Latin America: A Regional Methodology' (Paper presented at the IAOS Satellite Meeting Measuring Small and Indigenous Populations, Wellington, New Zealand, 14-15 April 2005). According to Del Popolo, in general, data collection concerning indigenous peoples is mainly based on common ancestry, current cultural traits and self-identification criteria. The common ancestry criterion refers to the existence of a native common historical root from which the group descends. It includes indicators related to territory, colour, race and mother tongue. The criterion of current cultural traits refers to those cultural elements or characters which can be weak because of the assimilation or globalization (for example, the loss of the use of the native language in the younger generations). The self-determination criterion has been considered by indigenous peoples as the main criterion for their identification. See also United Nations, 'Principles and Recommendations for Population and Housing Censuses. Statistical Paper No 67. Sales No E.98.XVII.8' (1998) Para. 2.116.

Amazon region.<sup>35</sup> In addition, a large number of Latin American people have an indigenous heritage, but do not identify themselves as indigenous persons.<sup>36</sup>

Each of the Amazonian countries applies different criteria for collecting data. Further, they have adopted different ethnicity response formats, including different terminology and concepts for terms related to ethnicity, nationality, indigenous status/tribe, or race, as well as different definitions of 'indigenous'.<sup>37</sup> Brazil<sup>38</sup> and Venezuela<sup>39</sup> have adopted the concept of self-perception or self-identification<sup>40</sup> as the main criterion for identifying indigenous peoples.

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<sup>35</sup> Colombian, Brazilian and Bolivian indigenous peoples, successively, are the largest populations in the Amazon rainforest. See COICA, Amazon Indigenous Agenda. Returning to the Maloca, above n 16, 10. See also Serge Bahuchet and Pierre Grenand, *Analysis of the Interactions Between Human Populations and the Tropical Forest* (1992) Centre d'Anthropologie Culturelle of the Université Libre de Bruxelles, the Laboratoire des Langues et Civilisations à Tradition Orale of the CNRS, and the Environment, Nuclear Security and Civil Protection of the European Community Commission <[http://lucy.ukc.ac.uk/Sonja/RF/Ukpr/Report\\_t.htm](http://lucy.ukc.ac.uk/Sonja/RF/Ukpr/Report_t.htm)> at 15 August 2004. Colombian, Brazilian and Bolivian indigenous peoples, successively, are the largest populations in the Amazon rainforest.

<sup>36</sup> Alison Brysk, *From Tribal Village to Global Village. Indians' Rights and International Relations in Latin America* (2000) 6.

<sup>37</sup> For more information about the census carried out by some Amazonian countries in 2000, see Del Popolo and Schkolnik, above n 34. See also United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities*, [Para.11], UNEP/CBD/WG8J/3/INF-10, (2003). See also Ann Morning, 'Ethnic Classification in Global Perspective: A Cross-National Survey of 2000 Census Round' (Paper presented at the United Nations Expert Group Meeting on the 2010 World Programme on Population and Housing Censuses, New York, 22-26 August 2005).

<sup>38</sup> In Brazil, the existing official definition of 'indigenous' is given by the *Indigenous People Statute* of 1973 since no new complementary legislation has been enacted to regulate the new concepts concerning indigenous peoples' rights established by the 1988 Constitution. <[http://www.iadb.org/sds/ind/ley/brasil\\_leg.pdf](http://www.iadb.org/sds/ind/ley/brasil_leg.pdf)> at 4 October 2005.

<sup>39</sup> Under Venezuelan Law, the term 'indigenous people' refers to those people who recognize themselves and are also recognized by others as indigenous, belonging to an indigenous community with its own language, social, cultural and economic characteristics. See *Law of Demarcation and Guarantee of the Habitat and Territories of the Indigenous Peoples*, 2001, (Venezuela) (Law of Demarcation) <[http://www.iadb.org/sds/ind/ley/venezuela\\_leg.pdf](http://www.iadb.org/sds/ind/ley/venezuela_leg.pdf)> at 27 May 2004.

<sup>40</sup> Article 2 of the *Convention concerning Indigenous and Tribal Peoples in Independent Countries* (ILO 169) states that, 'Self-identification as indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of this Convention apply.' See also Silke Von Lewinski and A. V Hahn, *Indigenous Heritage and Intellectual Property: Genetic Resources, Traditional Knowledge, and Folklore* (2004) 11. According to Lewinski and Hahn, 'the self-determination concept consists of two elements: the group-consciousness of persons who believe they belong to a certain indigenous group, and the group's acceptance that the respective individual is a part of their community.'

Bolivia,<sup>41</sup> Colombia,<sup>42</sup> Ecuador, and Guyana have adopted certain functional criteria, such as a close relationship with ancestral territories, and maintenance of traditional lifestyle, language and own uses and customs. Surinam does not have a definition since it does not recognize its ethnic and cultural diversity, even though some ethnic questions are included in its population census.<sup>43</sup>

Perhaps, as a result of the different criteria applied and definitions adopted, there is a significant variation in the number of people who have been recognized as being indigenous by the Amazonian countries.<sup>44</sup> For example, it is estimated that about 60 to 70 per cent of Bolivians and 30 to 38 per cent of Ecuadorians are indigenous,<sup>45</sup> while less than one per cent of Brazilians and two per cent of Colombians are considered to be indigenous.<sup>46</sup>

An indigenous population census in Amazon region also presents other challenges. Some indigenous peoples cannot be contacted easily, owing to factors such as large and unnavigable rivers or the absence of roads in the region.<sup>47</sup> Further, many indigenous groups live on the boundaries of several countries. As a result, they are not always included in the available data

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<sup>41</sup> *Supreme Decree No. 23,858, Territorial Base Organizations Regulation*, 1994, (Bolivia) (Art. 1(II a)), (Supreme Decree No. 23,858) <[http://www.iadb.org/sds/ind/ley/bolivia\\_leg.pdf](http://www.iadb.org/sds/ind/ley/bolivia_leg.pdf)> at 27 May 2004. Under Bolivian law, indigenous peoples are 'those that are descended from the populations settled prior to conquest or colonization, whose members have their own history, organization, and language by means of which they are recognized as belonging to the same sociocultural unit.'

<sup>42</sup> *Decree No. 2,164, Regulation of Chapter XIV of the Law 160*, 1995, (Colombia) (Art. 2), (Decree No. 2,164) <[http://www.iadb.org/sds/ind/ley/colombia\\_leg.pdf](http://www.iadb.org/sds/ind/ley/colombia_leg.pdf)> at 13 July 2004. Colombian legislation recognizes as indigenous communities, or parts thereof, the group, or sets of groups, which have indigenous ancestry and identify with it, by sharing and maintaining the characteristics, the uses and their own values of their traditional culture, as well as their own forms of government and social control which distinguish them from other communities.

<sup>43</sup> Section and Demographic of the Social and Housing Statistics, Social Statistics Branch of the United Nations Statistic Division, 'Ethnicity: A Review of Data Collection and Dissemination' (2003).

<sup>44</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(j) and Related Provisions, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations, and Practices of Indigenous and Local Communities. Regional Report: Latin America, Central and the Caribbean. Note by the Executive Secretary*, 4th mtg, [page 26], UNEP/CBD/WG8J/4/INF/5, (2005).

<sup>45</sup> The Danish Agency notes that the data of the last census undertaken in Bolivia (2001) intended to identify the exact percentage of indigenous peoples, based on the criteria of mother tongue, languages currently spoken and self-identification has not been published by the National Institute of Statistics. See Danish International Development Agency (Danida), *Best Practices for Including Indigenous Peoples in Sector Program Support* (2004) 12.

<sup>46</sup> Beto Ricardo mentions that indigenous populations residing beyond the boundaries of Brazil were not included. For example, 99 per cent of the Kampa people live in Peru, 70 per cent of the Guarani live in Paraguay, Bolivia and Argentina, 50 per cent of the Yanomami live in Venezuela, 45 per cent and 35 per cent, respectively, of the Wapixana and Makuxi peoples live in Guyana. For more information see Beto Ricardo, 'Contemporary Native Sociodiversity in Brazil and Biodiversity in the Amazon' in Adalberto Veríssimo et al (eds), *Biodiversity in the Brazilian Amazon* (2004) 192, 200.

<sup>47</sup> UNEP/CBD/WG8J/3/INF-10, *Composite Report*, above n 37, 26.

in any country, or sometimes they may be counted more than once.<sup>48</sup> Because of this, the available data relating to the identity and indigenous population density are only estimates.<sup>49</sup> For example, there is no information available on those cases of 'emerging groups', such as the Kantaruré, Kariri, Pitaguari and Kaxixó from Brazil, nor about the isolated population groups around the Amazon region.

### C *Indigenous Peoples' Collective Identity and Transnational Border Identity*

According to Stephen, 'the form, content and boundaries of ethnicity are created and re-created in response to specific political, economic and social contexts, both past and present.'<sup>50</sup> Further, Byrsk suggests that indigenous ethnicity is socially constructed and re-constructed in a permanent process of dialectical negotiation.<sup>51</sup> These approaches suggest that identification of an indigenous people's collective identity, or of the boundaries among distinct indigenous peoples, also varies according to the methodology used.<sup>52</sup> In this context, Taylor notes that groups sharing the same geographic space and having their own institutions have the most favorable social conditions for collective identity. Conversely, it is difficult to identify groups where their members are dispersed geographically or do not have their own institutions.<sup>53</sup>

In approaching the issue of the identity of the indigenous peoples living in the Amazon region it is necessary to consider some historical facts. While the issues of the Latin American colonization and indigenous peoples' resistance are outside the scope of this thesis, it should be noted that Spanish and Portuguese policies did not allow for indigenous peoples' legal

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<sup>48</sup> Permanent Forum on Indigenous Issues, 'Report of the Workshop on Data Collection and Disaggregation for Indigenous Peoples' (United Nations, Economic and Social Council, 2004) IV (31). The Report of the Workshop on Data Collection and Disaggregation for Indigenous Peoples has concluded that 'indigenous peoples who migrated to other countries (either voluntarily or as result of expulsion or fleeing conflict) were often faced with the dilemma of no longer having the opportunity of identifying as indigenous in their new country. This was also an issue for the new host country and was increasingly complex because of the increasing amount of migration, both documented and undocumented.'

<sup>49</sup> Bahuchet and Grenand, above n 35.

<sup>50</sup> Lynn Stephen, 'The Creation and Re-creation of Ethnicity. Lessons From the Zapotec and Mixtec of Oaxaca' (1996) 23(89) *Latin American Perspectives* 23. Stephen notes that anthropologists have moved away from rigid definitions of ethnicity tied to discrete groups characterized by a language, common ceremonies, material artefacts, and residential territories. Currently, they seek subjective definitions tied to specific historical, political and social contexts.

<sup>51</sup> Stefano Varese, 'The Ethnopolitics of Indian Resistance in Latin America' (1996) 23(89) *Latin American Perspectives* 58-64.

<sup>52</sup> Bahuchet and Grenand, above n 35.

<sup>53</sup> Donald M. Taylor, *The Quest for Identity. From Minority Groups to Generation Xers* (2002) 45.

existence apart from the institutions of the dominant society.<sup>54</sup> Thus, the process of colonization (or its effects) and the consequent governments' political commitments to integrate indigenous peoples' cultures into the dominant culture, have had a negative impact over indigenous culture.<sup>55</sup> As a consequence, indigenous peoples were not only deprived of their land and traditional environment; but also many of the distinctive and unique elements of their culture were diluted, transformed, lost and/or assimilated.<sup>56</sup> Following colonization, missionaries have also damaged some aspects of the Amazonian indigenous peoples' culture, in their attempts to Christianize them.

Throughout the process of colonization, and more recently as a result of conflicts with miners and drug dealers, many indigenous peoples were displaced from their ancestral lands.<sup>57</sup> In many cases, communities were broken up completely or separated, by imposed national or other territorial boundaries.<sup>58</sup> In other cases, tribes were reduced to small communities and individuals were relocated to non-indigenous areas.<sup>59</sup>

With the dispersal of indigenous groups, domesticated and semi-domesticated species and associated knowledge and traditional management strategies also spread.<sup>60</sup> Other consequences of these policies were the loss of culture and language, the erosion of traditional authorities and institutions, traditional knowledge systems and social structures of

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<sup>54</sup> José Paulo Kastrup, 'Internationalization of Indigenous Rights from the Environmental and Human Rights Perspective, The Symposium on Sustainable Development in Latin American Rainforests and the Role of Law' 32 *Texas International Law Journal* 97-102.

<sup>55</sup> Roque Roldan Ortega, 'Models for Recognizing Indigenous Land Rights in Latin America.' (The World Bank Environment Department, 2004) 13. See also Josephine R. Axt, M. Lynne Corn, Margaret Lee and David M. Ackerman, *Biotechnology, Indigenous People, and Intellectual Property Rights* (1993) Congressional Research Service, Library of Congress <[http://www.ipmall.fplc.edu/hosted\\_resources/crs/93-478.pdf](http://www.ipmall.fplc.edu/hosted_resources/crs/93-478.pdf)> at 18 November 2003.

<sup>56</sup> Manuel Ruiz Muller, *La Protección Jurídica de los Conocimientos Tradicionales: Algunos Avances Políticos y Normativos en América Latina* (2006) 30.

<sup>57</sup> UNEP/CBD/WG8J/4/INF/5, *Regional Report: Latin America, Central and the Caribbean*, above n 44, 57. The Report mentions that in Colombia, over three million people, mostly indigenous and local communities, have been displaced since 1985; in Peru, about 600,000 people were displaced between 1980 and 2000, and less than 10 per cent have returned to their original settlements.

<sup>58</sup> For more information about the effect of European colonization on indigenous peoples, see Posey, *Kayapó Ethnoecology and Culture*, above n 13. See also Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies, and Institutions* (2003) 29. The authors mention that during the 19th and early 20th centuries, as the colonial power in Africa precipitated the in many instances the fragmentation of contiguous local communities and in other cases the clustering of disparate communities by imposing new demarcation of their territories.

<sup>59</sup> Siegfried Wiessner, 'Rights and Status of Indigenous Peoples: A Global Comparative and International Legal Analysis' (1999) 12(SPRING) *Harvard Human Rights Journal* 58-58. Wiessner has noted that despite the fact that indigenous peoples had been subjugated, marginalized, dispossessed, excluded and discriminated against, their cultures have survived.

<sup>60</sup> Posey, *Kayapó Ethnoecology and Culture*, above n 13, 27.

communities.<sup>61</sup> In some cases, the consequences were even more drastic, in so far as they led to the erosion of indigenous identity, dignity and values, and ultimately to the total disappearance of some ethnic groups.<sup>62</sup> In addition, when indigenous peoples' rights over their ancestral lands were acknowledged, in many cases indigenous peoples were arbitrarily settled without due consideration being accorded to their previous traditional or ancestral lands and neighbors.<sup>63</sup> As a result, different peoples often coexist as a mixed population in the same village.<sup>64</sup>

After many decades of cultural degradation and disintegration of groups, indigenous peoples have collectively mobilized to demand respect for their autonomy and self-determination and the recognition of their cultural distinctiveness. This has enabled some of them to reintegrate to form a unified community and to recreate their ethnic and collective identity, as well as to reconstruct their own society and internal form of authority.<sup>65</sup> In many cases, indigenous peoples have been able to revitalize their culture and group status, and are currently evolving with the transformations taking place in the larger society.<sup>66</sup> A good example of the indigenous peoples' political mobilization to recreate their collective identity is the case of the Guarani people, whose communities are spread over Argentina, Bolivia, Brazil, Paraguay and

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<sup>61</sup> UNEP/CBD/WG8J/4/INF/5, *Regional Report: Latin America, Central and the Caribbean*, above n 44, 18 and 27.

<sup>62</sup> Mittermeier and Mittermeier, above n 8, 37. The authors mention that many indigenous peoples disappeared in the first four centuries of European colonization in South America. For example, in Brazil, from 1900 and 1957 around 80 indigenous peoples were destroyed, among them the Oti-Xavante, the Carijó and the Tupinambá. During this period, the indigenous population collapsed from about one million to only 200.000.

<sup>63</sup> Jose Aylwin, 'El Derecho de los Pueblos Indígenas a la Tierra y a los Recursos Naturales en América Latina' (Paper presented at the Conference on Indigenous Peoples in Latin America: The Challenge of Poverty Reduction, Land Rights and Natural Resources Control, Center for Latin American Studies, 2004). For instance, in Brazil, as a result of the process of recognition of indigenous peoples' land rights, about 17 different indigenous peoples, belonging to the four main language groups of indigenous peoples in Brazil: Aruwak, Karib, Ge and Tupi, were settled in the Parque Nacional Indígena do Xingu. For information about indigenous peoples living in Xingu Park, see <<http://www.socioambiental.org/pib/indexenglish.htm>> at 13 July 2005. There are other cases where indigenous peoples share, totally or partially, the same area with other groups. This is the case with the Issé, Witoto, Miranha, Kaixana and Kambeba of the Méria, Miratu and Barreira da Missão indigenous areas; the Ajuru, Arikapu, Aruá, Kanoe, Jaboti, Makurap, Mequem and Columbiara of the Guaporé and Rio Branco indigenous areas; and the Xereu, Katuena, Mawayana, Kaxuyana, Hyxkaryana, Karafawayana of the Nhamundá indigenous area. For more information, see Ricardo, above n 46.

<sup>64</sup> Naomi Roht-Arriaza, 'Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities' (1996) 17(Summer) *Michigan Journal of International Law* 919-63.

<sup>65</sup> For more information about the influence of European colonization over indigenous peoples' population and culture, see Ramón Pajuelo Teves, *Identidades en Movimiento. Tiempos de Globalización, Procesos Sociopolíticos y Movimientos Indígenas en Los Países Centroandinos*, Colección Monografías (2004) 283-88. See also Emanuele Amodio, 'Los Indios Metropolitanos: Identidad Étnica, Estrategias Políticas y Globalización entre Los Pueblos Indígenas de América Latina' in Daniel Mato, Maritza Montero and Emanuele Amodio (eds), *América Latina en Tiempos de Globalización: Procesos Culturales y Transformaciones Sociopolíticas* (1996) 100-13.

<sup>66</sup> Yvan Breton and Brian Davy, 'Analytical Insights, Lessons and Recommendations' in van Breton et al (eds), *Coastal Resource Management in the Wider Caribbean. Resilience, Adaptation, and Community Diversity* (2006) Chapter 8.

Uruguay. In February of 2006, they have agreed to joint efforts aimed at reviving the memory of the diaspora of the Guaraní people, in order to reflect, learn and continue fighting for their rights, principally the right to land. In order to so, they have set up a permanent committee.<sup>67</sup>

In many cases, the Amazonian indigenous peoples' process of recreation of their collective identity and reconstruction of their own society was facilitated by particular ethnic conditions such as the long history of interethnic relationships and, in some cases, the maintenance of the language, territory and customs.<sup>68</sup> A number of examples of how indigenous communities were identified as ethnic groups were provided by Bahuchet and Grenand.<sup>69</sup> These include: The Araweté and Piaroa peoples who were identified as an ethnic group because of the overlap of territory, language and culture. Others, such as the Kokama and Arawak-Lokono peoples were identified by linguistic and cultural criteria, since their populations are dispersed over wide areas. In other cases, despite speaking different languages, some indigenous peoples were considered as one single ethnic group because of their sole territorial, political, cultural and ritual entity. This is the case, for example, of the identification of the Xinguano peoples which include nine small ethnic groups. Other groups were identified on the basis of their marriage tradition (or compulsory exogamy), such as the Tukano peoples which include 18 sub-groups. There is also the situation of some ethnic groups that were autonomous until recently, but who are at present merging together, and are presented as a single entity, though their various names have been preserved, such as the Wayana/Apalai peoples.

In other cases, after many years of separation and cultural degradation, some groups have not been able to reintegrate their culture. In light of this, it is common to find two groups with different names, speaking the same language or, conversely, groups bearing a common name but speaking different languages.<sup>70</sup> For instance, the Yanomami people are linguistically heterogeneous, consisting of speakers of four related languages namely Sanumá, Yanomam, Yanomami and Yaman.<sup>71</sup> There are also cases where ethnic groups speaking a common language are separated into various dispersed sub-groups.<sup>72</sup> In other cases, an ethnic group may be divided into several autonomous sub-groups (each being based on a lineage, for

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<sup>67</sup> For more information about the Guaraní people's ethnic-political mobilization, see <[http://www.quechuanetwork.org/news\\_template.cfm?lang=s&news\\_id=4057](http://www.quechuanetwork.org/news_template.cfm?lang=s&news_id=4057)> at 12 August 2006.

<sup>68</sup> Teves, above n 65, 18.

<sup>69</sup> Bahuchet and Grenand, above n 35.

<sup>70</sup> Ibid.

<sup>71</sup> Laura R. Graham, 'How Should An Indian Speak? Amazonian Indians and the Symbolic Politics of Language in the Global Public Sphere' in Kay B. Warren and Jean E. Jackson (eds), *Indigenous Movements, Self-Representation, and the State in Latin America* (2002) 181-83.

<sup>72</sup> Bahuchet and Grenand, above n 35.

example), and the distinct sub-groups may or may not be in touch with each other.<sup>73</sup> Finally, some indigenous peoples are still completely ‘detribalized’, meaning that they are not linked to the ethnic group to which they originally belonged.<sup>74</sup> Moreover, in some cases, the ethnic group has a name but the people themselves prefer to use the name of a sub-group or of a lineage, though recognizing this common name.<sup>75</sup> However, sometimes it is difficult to determine the exact name of an ethnic group, as many of the classic names mentioned in the literature are not the names used by the peoples to refer to themselves.<sup>76</sup>

In relation to the re-creation of collective identity, there have also been discussions over the process of construction and recognition of transnational border identities.<sup>77</sup> This is a result of the international borders that nations have set up across the former territories of particular ethnic groups. For the purposes of the present analysis, it is relevant to note that about 65 per cent of the Amazonian indigenous peoples are concentrated in nine areas which are located on the periphery of and often cut across international boundaries of two, or even, three countries. Along with this, around 100 different ethnic groups have their members actually living in more than one country.<sup>78</sup> The map below shows the major areas of the indigenous peoples’ settlements in the Amazon rainforest.<sup>79</sup>

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<sup>73</sup> Ibid.

<sup>74</sup> Ibid.

<sup>75</sup> Ibid.

<sup>76</sup> Ibid.

<sup>77</sup> Meetings have been conducted with Brazil, Ecuador, Guatemala, Mexico, Panama and Venezuela to discuss the topics of comprehensive assistance to indigenous peoples in border areas, dual nationality, and establishment of binational indigenous organizations, international cooperation projects and problems in border areas. At present, only Ecuadorian and Colombian legislation guarantee, in some exceptional circumstances, the right to have dual nationality to indigenous peoples from neighbouring countries. The Colombian Constitution provides for dual nationality for indigenous people from countries that share borders with Colombia, if the principle of reciprocity is accepted by the other country. The Ecuadorian constitution provides for dual nationality for indigenous people from neighbouring countries who may belong to the same Ecuadorian ancestral community, subject to the bilateral agreements or international treaties. See Colombia State, *Colombian Report Submitted to Committee on the Elimination of Racial Discrimination, International Convention on the Elimination of all forms of Racial Discrimination, CERD/C/332/Add.1* (United Nations, 1998) <[http://www.unhchr.ch/tbs/doc.nsf/898586b1dc7b4043c1256a450044f331/c00e4598b76ec663c1256d2c00326c75/\\$FILE/G0244670.pdf](http://www.unhchr.ch/tbs/doc.nsf/898586b1dc7b4043c1256a450044f331/c00e4598b76ec663c1256d2c00326c75/$FILE/G0244670.pdf)> at 18 October 2005.

<sup>78</sup> Bahuchet and Grenand, above n 35.

<sup>79</sup> This figure is a modification of the original map “‘Carta 2 Les Grandes Zones de Peuplement Indigene de Amazonie’”, designed by Bahuchet and Grenand, above n 35.



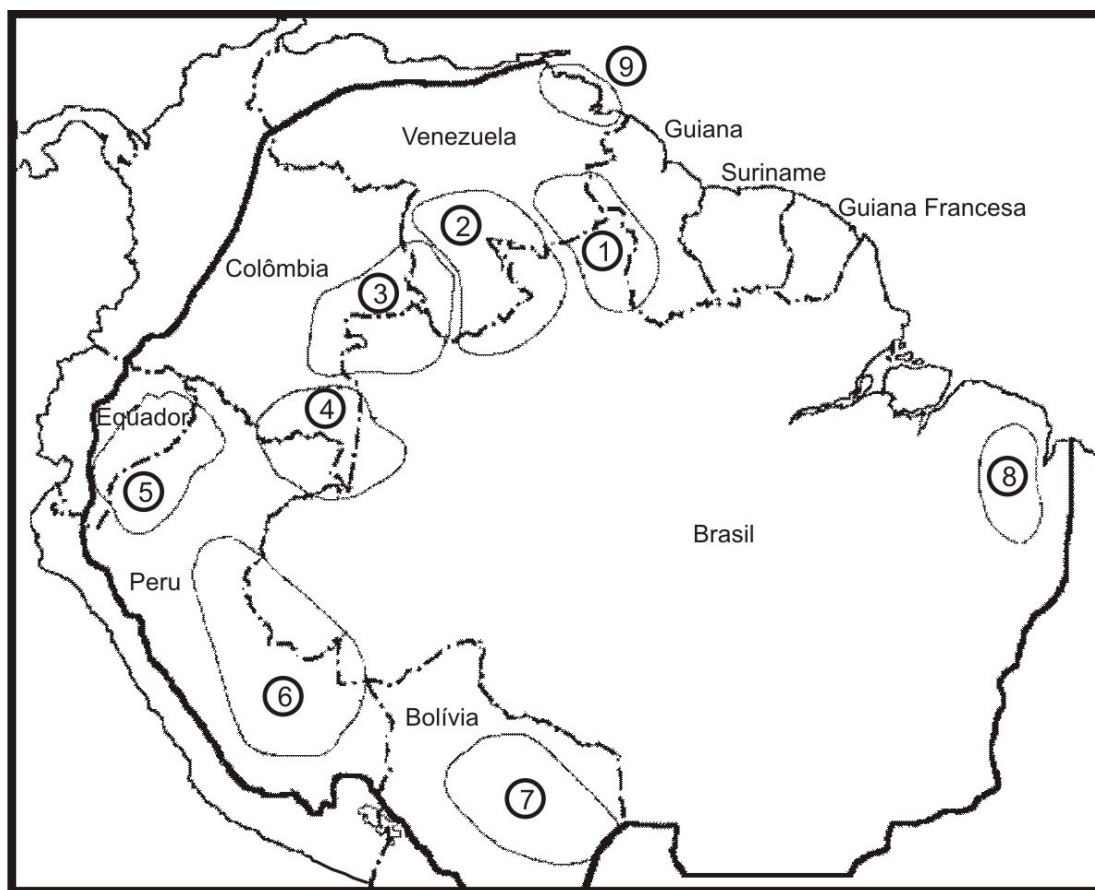


Figure 2: Schematic overview of the major areas of the indigenous peoples' settlements in the Amazonian rainforest.

In short, the movement of Amazonian indigenous peoples has generally achieved positive results by empowering the recovery and endorsement of their distinctive identity. The main evidence of their success is that all Amazonian countries, except Surinam, have recognized indigenous peoples' rights to self-determination and their own political and cultural autonomy.

#### IV SOME CULTURAL CHARACTERISTICS OF THE AMAZONIAN INDIGENOUS PEOPLES

This section demonstrates aspects of the Amazonian indigenous peoples' culture which need to be taken into account when seeking protection of traditional knowledge. Studies on indigenous culture in Latin American confirm that the Amazonian indigenous peoples do not consider humankind as the centre of the universe. Faundez notes that in indigenous peoples' view the individual is just one other being who is expected to live in harmony with

other creatures and Mother Earth.<sup>80</sup> As with many other indigenous peoples from around the world, the core of Amazonian indigenous peoples' beliefs and values systems is that the land is sacred. The land is viewed as 'the unifying force in indigenous peoples' social, political, spiritual, cultural and economic lives'.<sup>81</sup> In other words, land provides the basis of their existence and sustenance, as well as the basis of their culture. Because of this, indigenous peoples recognize the importance of protecting their lands and believe that land cannot be speculated, bought, sold, mortgaged or claimed by one individual or state.<sup>82</sup> Further, indigenous peoples argue that the recognition of and respect for their rights over their lands and resources are necessary to support their physical, cultural, economic and spiritual well-being, survival and integrity.<sup>83</sup>

Indigenous peoples in the Amazon rainforest have a particular spiritual connection with nature. Given this indigenous peoples see themselves as the natural custodians of the Amazon rainforest and the biological diversity therein. In addition, they believe that the present generation has no right superior to that of any future generation. As a result, they utilize natural resources while keeping in mind the needs of the generations to come.<sup>84</sup>

While there is a significant cultural diversity in the Amazon region, a study undertaken by the Coordinator of Indigenous Organizations of the Amazon Basin (COICA) asserts that there are significant similarities and consistencies in the Amazonian indigenous peoples' social organization. Further, there are also certain common customs and principles that govern their relationship both within kinship groups and between members of different communities and which affect how each person interacts with nature and uses its natural resources. Customary principles related to genetic resources have a strong spiritual character and are closely interlinked with belief systems associated with sustainability and fairness. Further, they are

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<sup>80</sup> Julio Faundez, 'Non-State Justice Systems In Latin America. Cases Studies: Peru and Colombia' (University Of Warwick, 2003) <<http://siteresources.worldbank.org/INTLAWJUSTINST/Resources/Faundez.pdf>> at 25 June 2006.

<sup>81</sup> D. Hoggan, 'Indigenous Philosophy and Land' (Paper presented at the International NGO Conference on Indigenous Peoples and the Land, 1981).

<sup>82</sup> George Manuel and Michael Posluns, *The Fourth World: An Indian Reality* (1974) 54.

<sup>83</sup> S. James Anaya and Jr. Robert A. Williams, 'The Protection of Indigenous Peoples' Rights over Lands and Natural Resources Under the Inter-American Human Rights System' (2001) 14 *Harvard Human Rights Journal* 34-49.

<sup>84</sup> Kastrup, above n 54, 121.

often based on fundamental values of respect for nature or Mother Earth.<sup>85</sup> The key principles that are shared by the Amazonian indigenous peoples include the principles of reciprocity, equity, equilibrium and duality.<sup>86</sup>

The first similarity among Amazonian indigenous peoples is the common use of the principles of equilibrium and reciprocity. This means that in general these peoples believe that all aspects of life and existence are interconnected, as they have a completely holistic view of the integral relationship between all living things on earth.<sup>87</sup> As a result of these principles, traditional knowledge has been characterized as holistic and intuitive, being derived from 'cumulative, collective and often spiritual experiences.'<sup>88</sup> The second similarity arises from of common use of the principles of reciprocity and equity. These principles are mainly encompassed by the communal nature of knowledge, and of genetic and biological resources. According to these principles, land and resources are communally owned, managed and shared.<sup>89</sup> Access to genetic and biological resources is governed by traditional systems of governance and decision-making.<sup>90</sup> The principle of equity is applied to ensure that genetic or biological resources and associated traditional knowledge are equally shared among the members of the community.<sup>91</sup> The collective character of the rights over land, knowledge and traditional resources is balanced by the principles of duality which requires respect for both the individual, as part of a group and respect for a group, as an entity of individuals.<sup>92</sup> In general, within the Amazonian indigenous peoples there is no recognition of private property over the productive resources. Thus, all members of the community have equal access to these

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<sup>85</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Prior Elements*, UNPE/CBD/WG8j/5/6.(2007).

<sup>86</sup> Alejandro Argumedo, "The Potato Park as a Sui Generis System for the Protection of Traditional Knowledge".

<sup>87</sup> COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 16, 12. See also UNEP/CBD/WG8J/3/INF/10, *Composite Report*, above n 37, 40.

<sup>88</sup> Graham Dutfield, *The Public and Private Domains: Intellectual Property Rights in Traditional Ecological Knowledge* (1999) *Oxford Electronic Journal of Intellectual Property Rights* WP 03/99 <<http://users.ox.ac.uk/~mast0140/EJWP0399.html>> at 26 April 2006.

<sup>89</sup> Alvaro Zerda-Sarmiento and Clemente Forero-Pineda, 'Intellectual Property Rights Over Ethnic Communities' Knowledge' (2002) 54(171) *International Social Science Journal* 99-104.

<sup>90</sup> Marcus Colchester, 'Forest Peoples, Customary Use and State Forests: The Case for Reform. Forest Peoples Programme: Paper for IASCP' (Paper presented at the 11th Biennial Congress of the International Association for the Study of Common Property. Panel on Resurgent Commons within Public or Private Property of Working Group Tenure, Centre of Agrarian Studies (PKA)-IPB and ICRAF-SEA, Bali, Indonesia, 2006).

<sup>91</sup> Zerda-Sarmiento and Forero-Pineda, above n 89, 100.

<sup>92</sup> Jose R. Martinez Cobo, *Special Rapporteur. Study of the Problem of Discrimination against Indigenous Populations*, [34], E/CN.4/Sub.2/1986/7/Add.4, (1986).

resources.<sup>93</sup> The appropriation of the natural resources by one individual lasts as long as does the use of them or the effective enjoyment of them, without signifying the acquisition of any definitive right over these resources. In addition, free exchange and sharing of landraces among relatives and neighbors are common practices within Amazonian indigenous peoples.<sup>94</sup>

The third similarity among Amazonian indigenous peoples is largely based on the common use of the principles of equity and reciprocity to form the foundation of the economic systems often adopted by the Amazonian indigenous peoples. In general, the economic system, including production, distribution and consumption, is articulated within the social organization where each family nucleus (in each community) represents a small unit of production and consumption.<sup>95</sup> Such an economic system is founded on the principles of reciprocity and exchange among the members of a community and their network of relationships. The obligation to give something in exchange maintains the flow of goods and services between givers and receivers. Therefore, in order to strengthen the exchange network of the members of the group, every family unit must offer goods or services to the community.<sup>96</sup> In a system of generalized reciprocity each member of the community assumes that the other members will act in the same way and fulfill their obligation to reciprocate in the future.<sup>97</sup> Generally, economic activity is based on small-scale agriculture, hunting, fishing, gathering, and domestic manufactures. The Amazonian indigenous peoples' economic system does not pursue wealth accumulation, nor seek to improve the living standards of individuals.<sup>98</sup> In general, the Amazonian indigenous peoples' customary laws contain rules

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<sup>93</sup> Richard Chase Smith, 'GIS and Long Range Economic Planning for Indigenous Territories', (1995) 18 *Cultural Survival Quarterly*.

<sup>94</sup> A. Zaid, H.G. Hughes, E. Porceddu and F. Nicholas, *Glossary of Biotechnology for Food and Agriculture - A Revised and Augmented Edition of the Glossary of Biotechnology and Genetic Engineering*, FAO Research Paper 9 (2001) 10. According to the Food and Agriculture Organization (FAO) the terms 'landraces' or 'traditional varieties' refer to 'an early, cultivated form of a crop species, evolved from a wild population, and generally composed of a heterogeneous mixture of genotypes.' Landraces are improved by indigenous peoples, and/or farmers, over many generations, without the use of modern techniques. These varieties are generally very diverse within species, because each is adapted to a specific environment. Broadly speaking, it can be said that landraces are themselves the product or embodiment of knowledge of the indigenous peoples and farmers who have developed, conserved and improved them. Further, landraces have been identified as part of indigenous peoples' cultural heritage. See also Rene Salazar, Niels P. Louwaars and Bert Visser, 'On Protecting Farmer's New Varieties: New Approaches to Rights on Collective Innovations in Plant Genetic Resources. CAPRI Working Paper No. 45' (International Food Policy Research Institute (IFPRI), 2006) 13.

<sup>95</sup> COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 16, 27.

<sup>96</sup> Ibid 21 and 27. See also Rodrigo De La Cruz, 'Conocimiento Tradicionales y el Derecho Consuetudinario' (UICN and UNU-IAS, 2006) 3.

<sup>97</sup> Richard Chase Smith, 'A Community-Based Resource Control and Management in Amazonia: A Research Initiative to Identify Conditioning Factors for Positive Outcomes' (Paper presented at the Eighth Conference of the International Association for the Study of Common Property, Bloomington, Indiana, USA, 2000).

<sup>98</sup> Zerda-Sarmiento and Forero-Pineda, above n 89, 104. See also COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 16, 21.

based on the principle of duality that prohibit over-harvesting and over-hunting and manifest a general ethic against wasteful activities. Indigenous peoples often avoid the accumulation of surplus so as to increase the resilience of the natural resources, reduce the risk of resources depletion, and thus ensure the survival of their peoples.<sup>99</sup> In addition, customary laws may impose special rules or restrictions for the use of or access to some component of the biological diversity.<sup>100</sup> The access to the mercantile economy has reduced the inter-ethnic commerce (based on exchange) which is still being used.<sup>101</sup> By contrast, the mercantile economy has triggered Amazonian indigenous peoples' participation in the mercantile market, by offering both products of the jungle, as well as services.

The fourth similarity among Amazonian indigenous peoples refers to their social organization which is often based on a strong pattern of kinship groups within the lineage.<sup>102</sup> Smith emphasizes that, in general, indigenous peoples in the Amazon region are not organized in the form of 'community', although in some cases they may have certain correspondence with the traditional economic unit of an ethnic group. Most of the time, communities are the result of the conjunction of several traditional economic units, creating a new type of settlement.<sup>103</sup>

In the Amazon region, a large part of traditional knowledge is orally transmitted from generation to generation, during daily life, such as during rites and celebrations, with clearly defined rules regarding secrecy and who has the right to know.<sup>104</sup> Such knowledge is continually adapted to the changing social, economic, environmental and political conditions of the holders.<sup>105</sup> While interacting with their social and natural environment, Amazonian indigenous peoples have developed significant knowledge about the use and management of a variety of genetic and biological resources. They have also domesticated wild plants and

<sup>99</sup> Ikechi Mgbefji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge* (2006) 66.

<sup>100</sup> Colchester, above n 90. Colchester mentions that the customary laws of the Kalina and Lokono peoples from Surinam prohibit their members from killing or cutting down young animals, birds or fish, or small trees. Community members are allowed to take only what they need and will use. In addition, such customary law also prohibits the hunting of some animal species, such as dolphins, giant river otters and sea turtles. Further, community member are prohibited from cutting down or even coming close to or using particular trees (for example the silk cotton tree), because of their spiritual significance in the Kalina and Lokono culture. Punishment for cutting down valuable fruit trees, for example, may be cleaning or weeding the entire village, resulting in social disgrace.

<sup>101</sup> COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 16, 21. See also De La Cruz, 'Conocimiento Tradicionales y el Derecho Consuetudinario', above n 96, 3.

<sup>102</sup> Zerda-Sarmiento and Forero-Pineda, above n 89, 103 and 104.

<sup>103</sup> Smith R C, 'El Don que Diere: Reciprocidad y Gestión de Proyectos en la Amazonía Indígena.' in Smith R C and Pinedo D (eds), *El Cuidado de los Bienes Comunes* (2002) 155-79.

<sup>104</sup> Michael Davis, 'Indigenous Rights in Traditional Knowledge and Biological Diversity: Approaches to Protection' (1999) 4(4) *Australian Indigenous Law Reporter* 1.

<sup>105</sup> Governing Council of the United Nations Environment Programme, *Environment and Cultural Diversity. Note by the Executive Director*, [11], UNEP/GC.23/INF/23, (2004).

developed a range of diverse varieties from the original species, as much for foods as for medicinal purposes.<sup>106</sup> They have also domesticated and used animals not only for food but also using animal's skins, bones and horns for clothing, shelter and tools.<sup>107</sup> Indigenous peoples as a whole use products coming from many sorts of wild flora, including juices, gums, fatty oils, essential oils, and many other substances of this nature.<sup>108</sup> It has been estimated that Amazonian indigenous people use of some 1,300 medicinal plants for different purposes including antibiotics, narcotics, abortifacients, contraceptives, fungicides, anesthetics and muscle relaxants.<sup>109</sup> Rheumatism, asthma, arthritis, bronchitis, coughs and colds, digestive and intestinal disorders and skin infections are ailments commonly alleviated through medicinal plants in the Amazon region.<sup>110</sup> The most important plants that have been domesticated and/or used by Amazonian indigenous peoples include the Red Pepper (*Capsicum sp.*); Guaraná (*Paullinia cupana*); Cotton (*Gossypium barbadense*); Marañón (*Anacardium occidentale*); Guanábana (*Annona muricata*); Pejibaye (*Bactris gasipaes*); the Brazil nut (*Bertholetia excelsa*); Papaya (*Carica papaya*); Guava (*Inga edulis*); Maracuyá (*Passiflora edulis*); Granadilla (*Passiflora ligularis*); Yuca or Mandioca (*Manihot esculenta*); Camote (*Ipomoea batatas*); Rubber (*Hevea brasiliensis*); Yagé or Ayahuasca (*Banisteriosis caapi*); Cocaine or Ipadu (*Erythroxylum coca*); Zarzaparrilla or Japacanga (*Smilax officinalis*); Ipecacuana (*Ipecacuana Sephaelis*); Malaga (*Xanthosoma sagittifolium*); Maize or Miho (*Zea mays*); the fragmentation hand grenade or pineapple (*Ananas comosus*) and Cupuassú (*Theobroma grandiflorum*).<sup>111</sup> In all the Amazonian countries, many traditional plants have become part of urban popular medicine as an alternative to official medicines, though often with little, if any, acknowledgement of indigenous peoples' contribution and ownership over the knowledge.<sup>112</sup>

Bifani notes that, in general, indigenous peoples still retain their systemic, adaptive and innovative approach towards agriculture. They plant, breed, experiment and conserve; they

<sup>106</sup> UNEP/CBD/WG8J/3/INF/10, *Composite Report*, above n 37, 42.

<sup>107</sup> Zerda-Sarmiento and Forero-Pineda, above n 89, 104. See also COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 35, 21.

<sup>108</sup> Elaine Elisabetsky, 'The Status of Ethnopharmacology in Brazil' (1993) 38 *Journal of Ethnopharmacology* 137.

<sup>109</sup> Kenton R. Miller, Walter V. Reid and Charles V. Barber, 'Deforestation and Species Loss: Responding to the Crisis.' in Jessica Tuchman Mathews (ed.), *Preserving the Global Environment: The Challenge of Shared Leadership* (1991) 78, 97.

<sup>110</sup> UNEP/CBD/WG8J/3/INF-10, *Composite Report*, above n 37, 12.

<sup>111</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities*, 9 and 42.

<sup>112</sup> UNEP/CBD/WG8J/3/INF-10, *Composite Report*, above n 37, 12.

grow food and cash crops, herbs and medicinal plants.<sup>113</sup> However, a significant number of indigenous people have integrated small-scale cattle rearing on the savannah into their livelihood, while maintaining their traditional farms cut in the forest and savannah woodland.<sup>114</sup> As a whole, indigenous peoples' culture, economy, including food security, products for subsistence and income, energy sources and building materials, medicine and overall well-being are still inextricably tied to their lands and resources.<sup>115</sup>

There has however, been significant erosion of indigenous peoples' cultures and traditional knowledge. Even though many indigenous peoples of the Amazon region inhabit territories located far from urban centers, they are undergoing cultural change because of the contact with non-indigenous persons and outside markets. However, their cultures are still vital and their traditional knowledge is still largely transmitted and retained. They also retain a reasonable degree of control over changes to their culture.<sup>116</sup> Those indigenous peoples living in isolation or with limited contact with the mainstream society more closely follow traditional lifestyles and as a consequence maintain a greater degree of preservation of their traditional knowledge.<sup>117</sup> There are the groups living in rural or urban areas. In general, these groups have lost their language and with it the opportunities to transmit their traditional culture and knowledge to younger generations. There are however, among them, some groups who are currently in the process of cultural recovery.<sup>118</sup>

Since there is little documentation about the traditional knowledge held by Amazonian indigenous peoples, it is difficult to measure the extent of the loss of traditional knowledge in the Amazon region. However, the extent of loss can be illustrated by the following examples. In Brazil, around 95 per cent of the documented groups have a population of less than 5,000 individuals.<sup>119</sup> In Colombia, one quarter of indigenous peoples has already lost some of their

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<sup>113</sup> Paolo Bifani, *CARICOM Interests in Relation to Biodiversity and Intellectual Property Rights in the Context of FTAA Negotiations* (2001) IRPonline <<http://www.crn.org/documents/studies/Bifani%20Study.pdf>> at 5 July 2006.

<sup>114</sup> Colchester, above n 90.

<sup>115</sup> Hope Shand, *Human Nature: Agricultural Biodiversity and Farm-Based Food Security* (1997) 23.

<sup>116</sup> COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 16, 11. See also UNEP/CBD/WG8J/4/INF/5, *Regional Report: Latin America, Central and the Caribbean*, above n 44, 60.

<sup>117</sup> See COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 16, 11. See also UNEP/CBD/WG8J/4/INF/5, *Regional Report: Latin America, Central and the Caribbean*, above n 44, 61.

<sup>118</sup> UNEP/CBD/WG8J/4/INF/5, *Regional Report: Latin America, Central and the Caribbean*, above n 44, 61.

<sup>119</sup> Mittermeier and Mittermeier, above n 8, 52. The author notes that, according to data collected in 1996, of the total population of Brazilian indigenous peoples, about 34 per cent of the documented groups have a population of less than 200 individuals, 24 per cent have a population of 201-500, 15 per cent a population of 501-1,000 and 22 per cent populations of 1,001-5,000. Just four groups range between 5,000 and 10,000, three number between 10,000 and 20,000 and two number between 20,000 and 30,000. Only one group exceeds 30,000 individuals.

indigenous heritage.<sup>120</sup> Further, 65 of the indigenous languages in Colombia are on the verge of extinction, including the languages of two northern groups, Tamas and Dujos.<sup>121</sup>

It is important to emphasize that in spite of the biological and ecological richness of the Amazon rainforest, the life of the indigenous peoples in most of the Amazonian countries is marked to a significant degree by isolation, dispossession of lands and resources, poverty, marginalization, discrimination, exclusion, and cultural racism.<sup>122</sup> In general, indigenous communities lack basic infrastructure such as highways, delivery systems for clean water and electricity, communication media and access to health and education services. In addition, indigenous peoples often have limitations in their access to competent public office and, in some cases, to the understanding of the national (official) language.<sup>123</sup> Further, as traditional knowledge currently offers to indigenous peoples little economic return; their only economic options are ranching, cattle, minerals and timber extractions all of which require the destruction of the Amazon rainforest.<sup>124</sup>

## V INDIGENOUS PERSPECTIVES ON TRADITIONAL KNOWLEDGE PROTECTION

In this section an attempt is made to provide a broad overview of the Amazonian indigenous peoples' concerns related to the protection of traditional knowledge.<sup>125</sup> One of the main

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<sup>120</sup> Ibid 124.

<sup>121</sup> Iucn and Inter-Commission Task Force on Indigenous Peoples, *Indigenous Peoples and Sustainability: Cases and Actions* (1997) 60.

<sup>122</sup> High Commissioner for Human Rights of the Convention on the Elimination of All Forms of Racial Discrimination, *Indigenous Peoples. General Recommendation No. 23*, [Para. 3], (1997). The High Commissioner affirms that 'indigenous peoples have been, and are still being, discriminated against and deprived of their human rights and fundamental freedoms and in particular they have lost their land and resources to colonists, commercial companies and State enterprises ... Consequently, the preservation of their culture and their historical identity has been and still is jeopardized.' See also UNEP/CBD/WG8J/4/INF/5, *Regional Report: Latin America, Central and the Caribbean*, above n 44, 23.

<sup>123</sup> Amazon Cooperation Council, *Recommendations for the ACTO Strategic Plan*, above n 4. The Plan notes that although a few of the indigenous peoples enjoy higher than average standards of living, either due to their land's natural wealth or their proximity to outside forces, on the whole they are the poorest of the poor. Recent research by the World Bank concluded that about one quarter of all Latin Americans living in extreme poverty is indigenous. However, this proportion is higher in countries with relatively large indigenous populations such as Bolivia, Peru and Ecuador.

<sup>124</sup> Kristina Plenderleith (ed.), *Indigenous Knowledge and Ethics. A Darrel Posey Reader* (2004) 44.

<sup>125</sup> World Intellectual Property Organization, 'Intellectual Property Needs and Expectations of Traditional Knowledge Holders, WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)' (WIPO, 2001) 217. According WIPO indigenous peoples' concerns related to traditional knowledge include the concerns about: (i) the loss of traditional life styles and of traditional knowledge, and the reluctance of the younger members of the communities to carry forward traditional practices; (ii) the lack of respect for traditional knowledge and holders of traditional knowledge; (iii) the misappropriation of traditional knowledge including use of traditional knowledge without any benefit sharing, or use in a derogatory manner, and (iv) the lack of recognition of the need to preserve and promote the further use of traditional knowledge.



complaints of indigenous peoples is that the traditional knowledge and resources which they have developed over centuries, have been commercially exploited, particularly by the pharmaceutical, botanical, seed and agrochemical industries, often without their authorization and without any benefits flowing back to the indigenous peoples.

The Ayahuasca case is often mentioned in literature as an example of misappropriation of Amazonian indigenous peoples' traditional knowledge.<sup>126</sup> However, the Ayahuasca is not an isolated case. The list of recent cases in which traditional knowledge held by indigenous peoples from the Amazon region has been, directly or indirectly, used in the research and/or development of products and/or processes is long. Here are just a few more examples of use of genetic resources from the Amazon region and associated traditional knowledge, without authorization and without sharing the benefit with the holder of the knowledge.<sup>127</sup>

#### **The Biribiri (*Octotea radioei*) case**

A substance extracted from the seeds of biribiri, an Amazon plant, has been used by the Wapixana people of Roraima, Brazil, as a contraceptive. The Canadian laboratory Biolink patented the rupuninine, a substance extracted from the seeds of biribiri and is doing research with the substance to treat AIDS.

#### **The Cumaniol case**

The same Canadian laboratory abovementioned, Biolink, has also patented as an anesthetic a substance extracted from a poison made from wild manioc that is used by indigenous peoples to catch fish.

#### **The Toxin of the Amazon Frog *Epipedobates tricolour* case**

A toxin of the frog *Epipedobates tricolor* which has been used traditionally by Amazonian indigenous peoples was synthesized by Abbot Laboratory which believes that the drug based on such toxin might become the first of an array of analgesics for pain, able to substitute for the opium derivatives.

<sup>126</sup> For more information about Ayahuasca case see, Center for International Environmental Law (Ciel), *The Ayahuasca Patent Case* CIEL <<http://www.ciel.org/Biodiversity/ayahuascapatentcase.html>> at 7 September 2005. See also Leanne M. Fecteau, 'The Ayahuasca Patent Revocation: Raising Questions about Current U.S. Policy' (2001) 21(1) *Boston College Third World Law Journal* 69-104.

<sup>127</sup> These examples were extracted from [http://www.amazonlink.org/biopiracy\\_cases.htm](http://www.amazonlink.org/biopiracy_cases.htm), <http://www.rain-tree.com/andiroba.htm> and <http://www.grain.org/seedling/?id=234> at 13 September 2006.

### **The Cupauçu (*Theobroma Grandiflorum*) case**

Indigenous peoples and local communities throughout Brazil and Peru have cultivated cupuaçu as a primary food source for generations. They use cupuaçu to make fresh juice, ice cream, jam and tarts. Further, they drink cupuaçu juice to facilitate difficult births. The seeds are utilized by the indigenous Tikuna people for abdominal pains. There are a great number of patents on the extraction of the fat from the cupuaçu seeds and the production of cupuaçu chocolate. Almost all of them were registered by the company ASAHI Foods Co., Ltd. from Kyoto, Japan.

### **The Copaiba case**

Traditional medicine practitioners in Brazil recommend copaiba oil as an anti-inflammatory agent, for treatment of dandruff, all kinds of skin disorders and for stomach ulcers. Copaiba also has diuretic, expectorant, disinfecting and stimulating properties, and is being utilized in the treatment of bronchitis, sore throat, psoriasis, against parasites and as a contraceptive. In some regions people prepare a tea from the bark of the copaiba tree for anti-inflammatory purposes. In the Peruvian Andes, copaiba resin is used for urinary incontinence, syphilis and catarrh. In addition, copaiba oil serves as fuel, replacing the diesel oil in the oil lamps used by Amazonian peoples. Copaiba oil can be used for industrial production of varnish, perfumes and pharmaceutical articles and even for developing photographs. There are several patents over copaiba uses; two of them were registered by Technico-Flor S.A. and one by Aveda Corporation.

### **The Andiroba Tree (*Carapa guianensis* Aubl.) case**

Indigenous peoples and local communities in the Amazon use the oil as a solvent for extracting the plant colorants with which they paint their skin. In addition to using the oil for illumination (oil lamps), traditional forest-dwellers and river and local peoples make a medicinal soap using crude andiroba oil, wood ash and cocoa skin residue. This soap is especially recommended for the treatment of skin diseases and as an insect repellent. The oil is furthermore used for naturopathic treatment of inflammations, tumors and pulled muscles. Andiroba oil also serves as a sun protection. The tree's bark and leaves are being used for rheumatism, cough, influenza, pneumonia and depression. Recently it was discovered that candles with andiroba oil also discourage insects, especially mosquitoes.

that transmit malaria and the disease dengue (*Aedes aegypti*). Some of the more recent research has focused on andiroba's anticancerous actions. The companies Rocher Yves and Morita Masaru, respectively, filed patents for cosmetic or pharmaceutical composition containing an andiroba extract, and ant-proof and insect-proof agents.

### Other cases

Patents have also been granted on Cat's Claw (*Uncaria tomentosa*), Maca (*Lepidium meyenii*), Sangre de Drago (*Croton lechleri*), Quebra Pedras (*Phyllanthus niruri*), Wormseed (*Chenopodium ambrosioides*), Cinchona tree (*Cinchona officinalis*), Curare, Muirapuama, Pilocarpo and Jenipapo. Almost all of these patents were registered by companies or people from the Northern hemisphere. Further, some plant names have also been trademarked (such as Açai<sup>TM</sup>, Sangre de Drago<sup>TM</sup>, and Cupuaçu<sup>TM</sup>). Many names of plant and indigenous peoples have also been registered as internet domains for commercial purposes, such as [www.cupuacu.com](http://www.cupuacu.com), [www.cupuacu-int.com](http://www.cupuacu-int.com), [www.sangrededrago.com](http://www.sangrededrago.com), [www.yanomami.com](http://www.yanomami.com), and [www.ashaninka.com](http://www.ashaninka.com).

Partly as a result of these cases of misappropriation of traditional knowledge, the Amazonian indigenous peoples are demanding respect and recognition of their rights not to sell, commodity, or have expropriated from them, their traditional knowledge, certain sacred places, plants, animals, and objects.<sup>128</sup> They are also demanding respect and recognition for their customary legal systems and the right to self-determination, including the principle of prior and informed consent.<sup>129</sup> Further, they argue that the respect and recognition of their rights, in particular their human rights, including rights to territories and resources will help to prevent further disadvantage by the implementation of negative cultural policies and racism against them.<sup>130</sup>

<sup>128</sup> Darrell A. Posey, Graham Dutfield and Kristina Plenderleith, 'Collaborative Research and Intellectual Property Rights' (1995) 4 *Biodiversity and Conservation* 892-93.

<sup>129</sup> Permanent Forum on Indigenous Issues, 'Report of Technical Workshop on Indigenous Traditional Knowledge' (Permanent Forum on Indigenous Issues, 5th sess, 2005) Para. 32. See also Yozo Yokota and Saami Council, Standard-Setting: Review of the Draft Principles and Guidelines on the Heritage of Indigenous Peoples. Expanded Working Paper Submitted to Working Group on Indigenous Populations, Sub-Commission on the Promotion and Protection of Human Rights, 23rd sess, [Annex (I, n)], E/CN.4/Sub.2/AC.4/2005/3, (2005).

<sup>130</sup> Yozo Yokota and Saami Council, above n 129, [Annex (I, a)]. See also Permanent Forum on Indigenous Issues, 'Report of the Workshop on Data Collection and Disaggregation for Indigenous Peoples', above n 48, Para. 32.

On this basis, indigenous peoples have formally stated that the existing intellectual property regimes are not sufficient to protect traditional knowledge.<sup>131</sup> They have suggested that a *sui generis* regime system must be designed in conformity with their customary laws.<sup>132</sup>

We ask the Permanent Forum to intervene in the various UN fora to ensure that truly *sui generis* systems of protection of Indigenous peoples are protected. These *sui generis* systems are based on our customary laws and traditional resources. Our existing protection systems are legitimate in their own right and any new mechanism for protection, preservation and maintenance of traditional knowledge and associated biological resources must respect and be complementary to such existing systems and not undermine or replace them.<sup>133</sup>

In addition, the Statement made by the Coordinator of Indigenous Organizations of the Amazon Basin (COICA) has pointed out that adjusting indigenous systems to the prevailing intellectual property regime could distort indigenous peoples' own systems of knowledge and protection.<sup>134</sup> In this context, the COICA argues that:

All aspects of the issue of intellectual property (determination of access to natural resources, control of the knowledge or cultural heritage of peoples, control of the use of their resources and regulation of the

<sup>131</sup> Coordinator of Indigenous Organizations of the Amazon Basin (COICA), *Intellectual Property Rights and Biodiversity: The COICA Statement* (1994) <<http://users.ox.ac.uk/~wgtrr/coica.htm>> at 30 September 2003. See also Yozo Yokota and the Saami Council, above n 129, Annex (I, O).

<sup>132</sup> COICA, *Statement*, above n 131. See also Four Directions Council, 'Forests, Indigenous Peoples and Biodiversity: Contribution of the Four Directions Council' (Secretariat for the Convention on Biological Diversity, 1996). See also *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples*, adopted on June 1993. The *Mataatua Declaration* asserted, in Article 2.3, that 'existing protection mechanisms are insufficient for the protection of Indigenous Peoples' cultural and intellectual property rights'.

<sup>133</sup> Indigenous Peoples Council on Biocolonialism (IPCB), *Collective Statement of Indigenous Peoples on the Protection of Indigenous Knowledge. Agenda Item 49(e): Culture* (2004) UN Permanent Forum on Indigenous Issues, 3rd sess <<http://www.ipcb.org/resolutions/htmls/pf2004.html>> 31 July 2006.

<sup>134</sup> COICA, *Statement*, above n 129, Art. 9. In this context, the COICA has formulated short term recommendations, as well as medium term strategies to deal with this issue. The short term recommendations are in general related to the need for identification and evaluation (from the standpoint of the indigenous worlds) of the existing intellectual property regimes, including mechanisms, instruments and forums which are either adverse to or useful for indigenous peoples, as well as studies of the feasibility of alternative systems and mechanisms for protection of their resources and knowledge. They also include the recommendation for establishment of regional and local indigenous advisory bodies on intellectual property and biodiversity with functions involving legal advice, monitoring, production and dissemination of information, and production of materials. As medium term measures, the Statement intends to design mechanisms for maintaining and ensuring rights of indigenous peoples to deny indiscriminate access to the resources of their communities or peoples and making it possible to contest patents or other exclusive rights to what is in essence indigenous. In the medium term, the Statement calls for: (i) the establishment of 'an indigenous programme for the collection, use and protection of biological resources and knowledge'; (ii) the training of indigenous leaders in subject-matters of intellectual property and biological diversity; (iii) the formulation of a 'Legal Protocol of Indigenous Law on the use and community knowledge of biological resources'; (iv) the implementation of a strategy for the broadcasting of this Legal Protocol at national and international levels.

terms of exploitation) are aspects of self-determination. For Indigenous peoples, accordingly, the ultimate decision on this issue is dependent on self-determination.<sup>135</sup>

At present, many indigenous peoples are intent on using the principles of self-determination to assert both their own values and to control access to and protection of traditional knowledge which is considered by them to be a part of their distinct,<sup>136</sup> self-determined, self-identified cultural existence.<sup>137</sup> According to indigenous peoples, ownership over territory and resources and rights to self-determination should lay the foundation for recognizing their rights to:<sup>138</sup>

- (i) be acknowledged as the inventor or author of their traditional knowledge and consequently to gain recognition for their contribution to products that are subsequently developed and commercialized by others;
- (ii) control the ownership of, and access to their traditional knowledge and consequently to decide, determine, and authorize when, where and how their traditional knowledge can be accessed;
- (iii) use their customary law to regulate the protection of, and access to the traditional knowledge;
- (iv) be legally and politically represented by their own institutions;
- (v) decide which of their resources to make available for commercialization;
- (vi) maintain veto power over commercialization opportunities that fail to respect sacred practices, or disclose sacred knowledge; and
- (vii) share benefits arising from the exploitation of their traditional knowledge.

In this context, indigenous peoples' rights over traditional knowledge is inextricably linked to a set of interrelated legal rights which in turn are linked to social, economic and political aspects. Indigenous peoples argue that a legal framework aimed at protecting traditional

<sup>135</sup> COICA, *Statement*, above n 132.

<sup>136</sup> Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights Of Indigenous Peoples' (Paper presented at the International Workshop on Traditional Knowledge, Panama City, 21-23 September 2005). Tauli-Corpuz, Chairperson of the UN Permanent Forum on Indigenous Issues, contends that 'the best protection and defence of our biodiversity and traditional knowledge is for us (indigenous peoples) to persistently assert our right to self-determination and our rights to our territories and resources. Self-determination means our right to freely determine our political status and freely pursue our economic, social and cultural development.' See also Chidi Oguamanam, 'Localizing Intellectual Property in the Globalization Epoch: The Integration of Indigenous Knowledge' (2004) 11 *Indiana Journal of Global Legal Studies* 135-3.

<sup>137</sup> Crucible Group, 'Topic 2: Options for National Laws to Protect Indigenous and Local Knowledge Regarding Biological Resources' in IDRC and IPGRI (ed.), *Seeding Solutions. Volume 2. Options for National Laws Governing Access to and Control over Genetic Resources* (2001) s 3 (intro).

<sup>138</sup> Tauli-Corpuz, above n 136.

knowledge need to include elements that enhance indigenous peoples' culture and traditional practices and promote the socio-economic development of the indigenous communities. Additionally, they argue that there is no way to protect and maintain traditional knowledge and practices without the preservation of the ancestral territory in which that particular knowledge or practice is developed.<sup>139</sup> Therefore, indigenous peoples argue that their knowledge must be protected in a manner that will allow them to continue to use and expand that knowledge and to prevent the chain of transmission of traditional knowledge from breaking.<sup>140</sup> As the *Declaration of Shamans on Intellectual Property and the Protection of Traditional Knowledge and Genetic Resources* declares:

We propose the adoption of a universal instrument of legal protection of traditional knowledge – an alternative, *sui generis* system distinct from the regimes of protection of intellectual property rights and that addresses, among other aspects: the recognition of indigenous lands and territories and consequently its demarcation; the recognition of the collective property of traditional knowledge as not subject to expiration in time and as nonnegotiable and of the resources as public interest goods; the right of local indigenous peoples and communities to deny access to traditional knowledge and to the existing genetic resources in their territories; the recognition of the traditional forms of organization of the indigenous peoples; the inclusion of the principle of prior informed consent and a clear disposition with respect to the participation of indigenous peoples in the fair and equitable distribution of benefits resulting from the use of these resources and knowledge; and the continuity of free exchange of resources and traditional knowledge among indigenous peoples.<sup>141</sup>

In addition, indigenous peoples also argue that their customary laws are of vital importance for the preservation of their traditional knowledge and therefore access to genetic and biological resources within their lands and associated traditional knowledge should be based on their customary law.<sup>142</sup>

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<sup>139</sup> UNEP/CBD/WG8J/4/INF/5, *Regional Report: Latin America, Central and the Caribbean*, above n 44, 58.

<sup>140</sup> WIPO, 'Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)', above n 125, 172.

<sup>141</sup> *Declaration of Shamans on Intellectual Property and the Protection of Traditional Knowledge and Genetic Resources*, [Para. 15], (2001). The Declaration was made in 1999 at the National Encounter of Pajés, where Brazilian indigenous leaders from more than 220 different indigenous peoples met to talk about traditional knowledge and bio-piracy.

<sup>142</sup> See Chapter 7 of this thesis for more information about the feasibility of using customary laws to regulate the access to, and protection of traditional knowledge. See also Rodrigo De La Cruz, 'Vision de los Pueblos Indígenas en el Contexto de las Decisiones sobre ABS y 8(j): Impacto de las Decisiones de la CBD/COP sobre el Mandato de la IGC de la OMPI' (COICA, ICTSD, IUCN, 2004) 9. The need for recognition of customary law is referred to in many indigenous statements and declarations, such as the *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples* and the *Julayinbul Statement on Indigenous Intellectual Property Rights*. It is also included in *ILO Convention 169*, the *Draft United Nations Declaration on the Rights of Indigenous Peoples* and the *Principles and Guidelines for the Protection of the Heritage of Indigenous*

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*People*, elaborated by the Special Rapporteur of the United Nations Sub-Commission on Prevention of Discrimination and Protection of Minorities. See Tauli-Corpuz, above n 136. See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Report*, 5th sess, [Para. 53], WIPO/GRTKF/IC/5/15, (2003).

## VI SUMMARY OF FINDINGS

The Amazon region is rich in its biological and cultural diversity. However, there is neither precise information about the size of the indigenous population nor about their collective identities. In some cases, even their 'real' names are not known. In other cases it is difficult to ascertain whether a particular group is considered as indigenous people and also to determine their collective identity. Despite the lack of information, it has been possible to establish that in varying degrees the culture and traditional lifestyles of many Amazonian indigenous peoples are changing. However, as a whole, indigenous peoples living in the Amazon still maintain and preserve their culture, values and institutions. This means that indigenous peoples' core values and principles and their traditional views of the world have remained fairly stable. They are still holders of an immeasurable body of traditional knowledge.

This chapter has also shown that there are similarities in the key principles adopted by the Amazonian indigenous peoples. In general, the principles of equity, reciprocity, equilibrium and duality have a similar meaning and purpose. For example, the principles of equity and of reciprocity are based on the rule that every gift must be returned. Together these two principles provide the basis for their economic systems and for the sharing of traditional knowledge and associated genetic resources. The principle of duality gives the foundation for their collective rights. It provides for a balanced respect for both the individual and the community. As a consequence of this principle an indigenous person cannot behave independently or individualistically. The principle of equilibrium refers to the interconnection between all living things on the earth. The principles of equilibrium and reciprocity together form the foundation for the collective management, ownership system and decision making process.

This chapter has shown that despite cultural similarities manifested throughout the region, indigenous peoples are not homogenous groups of people. Thus, the voice of an indigenous person may not represent the interest of the others members of the community. This chapter has also shown that in some cases communities overlap, lack collective identity and/or internal organization. In other cases, different peoples coexist as mixed populations in the same village. Different degrees of engagement with the wider community may result in different points of view on certain issues. One key problem is that the ambiguity regarding membership in and boundaries between indigenous groups, along with the absence of efficient criteria for classifying and identifying indigenous peoples can result in the misleading



identification of the sources, or the holders of traditional knowledge. It can also give rise to inequitable distribution of benefits among the holders of such knowledge.

Another problem is that 64 per cent of the total Amazonian indigenous population lives in one-quarter of the total area of Amazon rainforest. In many cases, lands often cut across the borders of two or even three countries. These two facts along with the trans-boundary nature of the distribution of genetic resources make it difficult, if not impossible, to identify the source, or the holders of traditional knowledge. This chapter has shown that there is a need to enhance or create a mechanism for collecting data about the Amazonian indigenous peoples, in order to fairly identify the holders of traditional knowledge. There is also a need for more qualitative studies about their collective identity.

This chapter has also shown the main concerns of the Amazonian indigenous peoples related to the protection of traditional knowledge. One of their main complaints is that their traditional knowledge has been appropriated by private sector companies without their proper authorization and without any benefits flowing back to them. In this context, the Amazonian indigenous peoples, through the Coordinator of Indigenous Organizations of the Amazon Basin (COICA), have argued that self-determination and human rights - which include their rights to have their own their own culture, language and customary law and institutions - should be respected and recognized. They also argue that rights over traditional lands and control over the natural resources within their lands is of vital importance for the protection of traditional knowledge. In addition, they argue that the rights of their ancestral territory and resources and the right to self-determination should form a foundation for the creation of a special *sui generis* regime to protect their traditional knowledge.

## CHAPTER 3

### TRADITIONAL KNOWLEDGE

#### I INTRODUCTION

This chapter has two key objectives. First, it aims to examine the inherent nature of traditional knowledge and to investigate the ways in which such knowledge has been described and defined. The emphasis here is on the diversity of traditional knowledge systems. The section attempts to demonstrate the informal nature of traditional knowledge and to highlight the customary means or mechanisms for the preservation and transmission of such knowledge. Attention is also drawn to the collective character of the development, transmission and ownership of traditional knowledge and the role which customary law and practices play in governing traditional use and dissemination. Finally, the section evaluates the impact that the various concepts of ‘commons’, ‘public good’ and the ‘public domain’ have in delimiting and defining the boundaries of the protection of traditional knowledge. This analysis proceeds on the basis that the concept of the ‘public domain’ is essentially misleading in the context of recognizing indigenous peoples’ rights over traditional knowledge.

The second aim of the chapter is to provide a clear and nuanced understanding of the importance of biological diversity for humankind and its relationship with human diversity, social culture and values. The 2000 Malmö Declaration stresses that success in combating environmental degradation is dependent on the full participation of all actors in society; an aware and educated population; and respect for the ethical and spiritual values and cultural diversity of traditional knowledge.<sup>1</sup> It is therefore essential to understand and to act upon the interrelationship between biological diversity and cultural diversity with a view to facilitating the conservation and sustainable use of the biological diversity, as well as the recognition of indigenous peoples’ rights over their knowledge. The overriding aim of this chapter is to outline the main characteristics and types of traditional knowledge that need to be considered when attempting to identify why and how such knowledge should be protected.

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<sup>1</sup> *Malmö Ministerial Declaration*, adopted May 2000. The issues of biological and cultural diversity were also taken into account in the Millennium Declarations, in the proclamation of the United Nations Year of Dialogue among Civilizations and in the United Nations Education and Scientific Organization Declaration on Cultural Diversity. In its introduction, the World Summit on Sustainable Development's Plan of Implementation included the statement that respect for cultural diversity is essential for achieving sustainable development. Available at [http://www.unep.org/malmo/malmo\\_ministerial.htm](http://www.unep.org/malmo/malmo_ministerial.htm) at 13 June 2003.

## II THE NATURE OF TRADITIONAL KNOWLEDGE

### A *Defining Traditional Knowledge*

The term 'traditional knowledge' has multiple meanings. The different ways in which traditional knowledge is expressed have made it difficult to agree on a legally and scientifically acceptable definition. Therefore, there is no official definition of traditional knowledge, or uniformity in the terminology which is used to refer to indigenous peoples' knowledge. In general, the literature has used terms such as 'indigenous knowledge',<sup>2</sup> 'traditional ecological knowledge',<sup>3</sup> 'local knowledge',<sup>4</sup> 'tribal knowledge',<sup>5</sup> 'ethno-botanical knowledge',<sup>6</sup> 'traditional knowledge', or 'intangible component';<sup>7</sup> these and other similar terms are sometimes used as synonyms.

#### 1 *Some Illustrative Examples*

Various definitions of traditional knowledge have been used by academia and intergovernmental bodies. The following examples highlight how traditional knowledge has been defined in different scenarios.

##### (a) *In the Context of Biological Diversity Conservation*

The CBD is the main international instrument for policy-making in the conservation and sustainable use of biological diversity, the access to genetic resources, and the preservation, promotion and preservation of knowledge, innovations and practices of indigenous and local communities.<sup>8</sup> The CBD is a legally binding international agreement. Its provisions are

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<sup>2</sup> Stephen B. Brush, 'Indigenous Knowledge of Biological Resources and Intellectual Property Rights: The Role of Anthropology' (1993) 95(3) *American Anthropologist* 653-64.

<sup>3</sup> Darrell A. Posey, (*Re*) *Discovering The Wealth of Biodiversity, Genetic Resources, and the Native Peoples of Latin America* (2002) Goteborg University <[http://www.hum.gu.se/~romibero/publikationer/anales5/pdf\\_artiklar/darrell.pdf](http://www.hum.gu.se/~romibero/publikationer/anales5/pdf_artiklar/darrell.pdf)> at 26 September 2004.

<sup>4</sup> Stephen B. Brush and Dorren Stabinsky (eds), *Valuing Local Knowledge - Indigenous People and Intellectual Property Rights* (1996) 4.

<sup>5</sup> Kerry Ten Kate and Sarah Laird, *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing* (1999) 34.

<sup>6</sup> Michael J. Balick and Paul Alan Cox, *Plants, People, and Culture: The Science of Ethnobotany*, Scientific American Library Series (1996) 37, 38.

<sup>7</sup> The term 'intangible component' has been used in legislation related to access to genetic resources and traditional knowledge; for example the Andean Community's Decision 391 uses this expression.

<sup>8</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, (entered into force 5 June 1992) (CBD). See also United Nations Commission on Human Rights, Sub-Commission on the Promotion and Protection of Human Rights, *Intellectual Property and Human Rights. Resolution 2001/21 (E/CN.4/SUB.2/RES/2001/21)*, (2001).

mainly expressed as shared goals and principles with the responsibility to determine how most of it should be implemented and enforced being vested in the nation states. The objectives of the CBD are the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.<sup>9</sup>

The CBD has devised a perspective that biological diversity should be conserved not only for biological reasons commonly underlying nature conservation, but also for reasons of ethics, economic benefit and human survival.<sup>10</sup> The CBD has recognized the importance of the involvement and participation of indigenous peoples and local communities in the conservation and sustainable use of the biological diversity because of their traditional lifestyle and knowledge, practices and innovations. The CBD opens with a general statement of principles. Preambular Paragraph 10 affirms:

Noting further that the fundamental requirement for the conservation of biological diversity is the in situ conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings.

The involvement of indigenous peoples in the conservation and sustainable use of biological diversity, as well as in the maintenance of human life in the world, is recognized by the CBD in Paragraph 12 of its Preamble, and later in Articles 8(j), 10(c) and 18(4). The Preambular Paragraph 12 provides that:

The Contracting Parties,  
Recognizing the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.

The CBD has adopted different expressions to refer to indigenous peoples' and local communities' knowledge. The following terms have been used by the CBD:<sup>11</sup> 'traditional knowledge, innovations and practices,' 'knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles', 'traditional cultural practices',

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<sup>9</sup> CBD, above n 8, art 1.

<sup>10</sup> World Resource Institute, World Conservation Union and United Nations Environment Programme, *Global Biodiversity Strategy* (1992) 3.

<sup>11</sup> CBD, above n 8, Preambular Para. 12. and Arts 8 (j), 10 (c), 17 (2) and 18 (4).

‘indigenous and traditional knowledge’, and ‘indigenous and traditional technologies’.

While elaborating the key terms of Article 8 (j) and related provisions in Articles 10 (c), 17.2 and 18.4, the Executive Secretary of the CBD stated that the term ‘traditional knowledge’ refers to:

[a] body of knowledge built by a group of people through generations living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use.<sup>12</sup>

In addition, the Executive Secretary of the CBD has also said that:

[i]n the context of knowledge, innovation is a feature of indigenous and local communities whereby tradition acts as a filter through which innovation occurs. In this context, it is traditional methods of research and application and not always particular pieces of knowledge that persist. Practices should therefore be seen as the manifestations of knowledge and innovation.<sup>13</sup>

The CBD does not provide working definitions for the terms ‘knowledge’, ‘innovations’ and ‘practices’. A few definitions of the term ‘innovation’ in the context of Article 8(j) have been put forward. For example, Garcia recommends the following definitions for facilitating traditional knowledge protection:

Knowledge is the result of an accumulative and collaborative process throughout the existence of a social group.

Practices means knowledge derives from the existence of practice. The innumerable experiences of a people throughout their existence have led to the adoption of practices or manners to do things which, when they are successful, have been consolidated into collective knowledge.

Innovations are recent developments of knowledge applied to new problems. Knowledge utilized in different circumstances or different form, can produce distinct utility from the same organism or resource. Each new addition to collective knowledge is innovation.<sup>14</sup>

In that sense, ‘knowledge’ is in essence an intangible good. ‘Innovation’ constitutes, on the contrary, a material product that incorporates the knowledge. In this perspective, ‘innovation’

<sup>12</sup> Convention on Biological Diversity United Nations on Environment Programme, *Traditional Knowledge and Biological Diversity*, Workshop on Traditional Knowledge and Biological Diversity, [Para. 84], UNEP/CBD/TKBD/1/2, (1997).

<sup>13</sup> V. H. Heywood, Robert T. Watson and United Nations Environment Programme, *Global Biodiversity Assessment* (1995) 86.

<sup>14</sup> P. Garcia, *Propriedad Intelectual, Diversidad Biologica, Cultura y Desarrollo*, quoted by Brendan Tobin, ‘Redefining Perspective in the Search for Protection of Traditional Knowledge: A Case Study from Peru’ (2001) 10(1) *Review of European Community and International Environmental Law* 44-56. See also Manuel Ruiz Muller, ‘Protecting Indigenous Peoples’ Knowledge. A Policy and Legislative Perspective from Peru’ (1999) 3 *Policy and Environmental Law Series* 1-17. Muller, for example, proposes a differentiation among each one of the concepts, for which he suggests the following: (i) ‘knowledge’ should be understood as the ideas and abstract recognition of how this knowledge works and why certain phenomena are actually generated, (ii) ‘innovations’ should be understood as the inventions and materialized procedures that reflect the applied knowledge, and (iii) ‘practices’ should mean the techniques or methods in which these innovations may be efficiently applied.

essentially means tangible goods. Thus, the term 'innovation' can be considered synonymous with the terms 'invention' and 'improvement'.<sup>15</sup> The term 'practice' refers to the procedures (technologies, techniques or methods) by which things are done.<sup>16</sup>

In practice, the effects of these terms (knowledge, innovations and practices) need to be taken into account in the definition and characterization of traditional knowledge. Another aspect that deserves special consideration is the need to define the term 'traditional lifestyles'. Craig supports the proposition that the use of the term 'traditional lifestyles' in describing traditional knowledge in Article 8(j) indicates the CBD's intention to exclude those indigenous peoples and local communities who have not retained a direct connection with lands and resources.<sup>17</sup>

### (b) *In the Context of Health*

In the context of health policy, the term generally used by the World Health Organization (WHO) is 'traditional medicinal knowledge'. This means:

The sum total of the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health, as well as in the prevention, diagnosis, improvement or treatment of physical and mental illnesses.<sup>18</sup>

The terms 'complementary/alternative/non-conventional medicine' are also used by the WHO as synonym of traditional medicine.<sup>19</sup>

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<sup>15</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(j) and Related Provisions, *Development of Elements of a Sui Generis System for the Protection of Traditional Knowledge, Innovations and Practices*, 3rd mtg, [Para.14], UNEP/CBD/WG8J/3/7, (2003), [C, Para. 10].

<sup>16</sup> Manuel Ruiz Muller, *La Protección Jurídica de los Conocimientos Tradicionales: Algunos Avances Políticos y Normativos en América Latina* (2006) 183. The African Model Law defines 'innovation' as 'any generation of a new, or an improvement of an existing, collective and/or cumulative knowledge or technology through alteration or modification, or the use of properties, values or processes of any biological material or any part thereof, whether documented, recorded, oral, written or in whatever manner otherwise existing'.

<sup>17</sup> Donna Craig, 'Implementing the Convention on Biological Diversity: Indigenous Peoples' Issues' (Paper presented at the Regional Conference on the Biodiversity Convention, Manila, 6-8 June 1994).

<sup>18</sup> World Health Organization, *General Guidelines for Methodologies on Research and Evaluation of Traditional Medicine* (WHO/EDM/TRM/2000) (2000) 1.

<sup>19</sup> Bhushan Patwardhan, 'Intellectual Property Handbook: Policy, Law and Use' (WHO CIPIH, 2001) 58. It should be noted that the concept of traditional medicine is more often known as being linked to plant-based medicines. However, animal-based medicines have played a significant role in healing practices, magic rituals, and religions of many societies. In fact, of the 252 essential medicines selected by the WHO, 11.1 per cent come from plants and 8.7 per cent are derived from animals. For instance, the venom from the snake is used to produce captopril that helps control hypertension; blister beetles provide cantharidin used to treat urogenital disorders; leeches produce hirudin, an important anti-coagulant and bee venom is used in the treatment of arthritis. See also World Wildlife Fund, *The Importance of Biological Diversity* (1989) 19.

(c) *In the Context of Intellectual Property Protection*

The World Intellectual Property Organization (WIPO) is a specialized agency of the United Nations. It has mandate to promote and administrate the intellectual property treaties and conventions signed by member nations and the protection of intellectual property throughout the world. In this context WIPO provides a forum for international policy debate concerning the interplay between intellectual property and traditional knowledge, whether or not associated with genetic resources and the concept of access to genetic resources and benefit-sharing.<sup>20</sup>

The Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) - established by WIPO in 2000 - has encouraged national governments to adopt a general and more neutral definition of traditional knowledge that concentrates on knowledge as such (that is the content, substance or idea of knowledge, technical 'know-how' and culture) rather than its form of expression.<sup>21</sup> In so doing, the Intergovernmental Committee suggests a narrower definition of traditional knowledge which is:<sup>22</sup>

- (i) generated, preserved and transmitted in a traditional context;
- (ii) distinctively associated with the traditional or indigenous culture or community, which preserves and transmits it between generations;
- (iii) linked to a local or indigenous community or other group of persons identifying with a traditional culture through a sense of custodianship, guardianship or cultural responsibility, such as a sense of obligation to preserve the knowledge, or a sense that to permit misappropriation or demeaning usage would be harmful or offensive, a relationship that may be expressed formally or informally by customary law;

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<sup>20</sup> In 1988-1999 WIPO consulted with a wide range of stakeholders, such as indigenous and local communities, civil society organizations, governmental representatives, researchers and private sector representatives to determine the intellectual property needs and expectations of traditional knowledge holders. See World Intellectual Property Organization, 'Intellectual Property Needs and Expectations of Traditional Knowledge Holders, WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)' (WIPO, 2001) 217.

<sup>21</sup> For a summary of the WIPO's Intergovernmental Committee's works on traditional knowledge, see <<http://www.wipo.int/portal/index.html.en>> at 23 April 2006. See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *The Protection of Traditional Knowledge: Outline of Policy Options and Legal Elements*, 7th sess, [Para. 12], WIPO/GRTKF/IC/7/6, (2004).

<sup>22</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Traditional Knowledge - Operational Terms and Definitions*, [Para 33], WIPO/GRTKF/IC/3/9, (2002).

- (iv) knowledge in the sense that it originates from intellectual activity in a wide range of social, cultural, environmental and technological contexts; and
- (v) identified by the community or other groups as being traditional knowledge.

Further, the WIPO's Intergovernmental Committee has concluded that such a definition may not be necessary in order to delimit the scope of subject matter for which protection has been sought, as neither the *Paris Convention for the Protection of Industrial Property*, nor the *Berne Convention for the Protection of Literary and Artistic Works* contains definitions of what constitute 'invention', 'industrial design', or 'literary and artistic works'.<sup>23</sup>

Taken the WIPO's assertion as given, this thesis argues that it is important to demarcate which kind of information or knowledge, practices and innovations - and respective nature, content and usefulness - should be the subject matter of protection. Furthermore, this thesis argues that the definition of traditional knowledge associated to genetic and/or biological resources, should be utility-base or based on the sector in which it is to be applied.<sup>24</sup> Moreover, it has to be based on the actual or potential contribution that traditional knowledge could make to the process of innovation in the pharmaceutical and botanical sectors, food, agriculture and others. The underlying idea for these assertions is that the relevance of traditional knowledge may differ for food, agriculture, pharmaceuticals and botanical medicine. In addition, the utility-based identification of the subject matter of the protection, should pave the way for the identification of the kind of rights that shall be granted to the holders of the knowledge. This contention will be examined in Chapter 9.

#### **(d) *In the Indigenous Peoples' View***

In 2005 indigenous peoples submitted a draft to the Commission on Human Rights which included principles and guidelines to be followed by states when elaborating national legislation to protect indigenous heritage. For the purpose of these guidelines, indigenous peoples have defined the term 'indigenous cultural heritage' as follows:

Indigenous cultural heritage means both tangible and intangible creations, manifestations and production consisting of characteristic elements of the cultural heritage developed and maintained by an indigenous

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<sup>23</sup> Ibid.

<sup>24</sup> More information about the use of the utility-based approach in defining traditional knowledge can be found at Padmashree Gehl Sampath, *Defining an Intellectual Property Right on Traditional Medicinal Knowledge: A Process-Oriented Perspective. Discussion Paper No 4* (2003) United Nations University <<http://ideas.repec.org/p/dgr/unuint/200304.html>> at 25 July 2006.



people, or indigenous individuals if the creation reflects the traditional literary, artistic or scientific expectation of the people. Such creations, manifestations and productions include the practices, representations, expressions – as well as the instruments, objects, artefacts, sites and cultural spaces associated therewith – that indigenous peoples and individuals recognize as part of their cultural heritage. It further includes the knowledge that is the result of intellectual activity and insight in a traditional context, and includes the know-how, skills, innovations, practices and learning that form part of traditional knowledge systems, as well as knowledge that is embodied in the traditional lifestyle of an indigenous people, or is contained in codified knowledge systems passed between generations.<sup>25</sup>

The general approach of the Amazonian indigenous peoples in defining their knowledge is stated by the Coordinator of Indigenous Organizations of the Amazon Basin (COICA), as follows:

Knowledge is sacred, renewed, permanent, exists, is born, grows, expands; if ill, it dies and is not renewed once again. Like a seed, if it dies, it cannot bear fruit. Everything is [in] a permanent cycle, where the basic need is to know and to manage time, reciprocity, diversity, so that the land is always renewed and life flourishes. Traditional knowledge is life in harmony between the holder and the world that involves it.<sup>26</sup>

**(e) *The Working Definition Adopted in this Thesis***

For while, exclusively for the purposes of this thesis, the term 'traditional knowledge' refers to:

A body of information and set of skills, innovations and practices (documented, recorded, oral, written or in any otherwise existing form) that have been developed, maintained and used by a group of people through generations, living in close contact with nature, concerning the use of properties, values or processes of any genetic and biological resources or part thereof, which can be useful for any technical field, and may include agricultural and medicinal knowledge as well as knowledge associated with environmental conservation and sustainable use of biological diversity.

This definition is partially based on the definition given by Balick, which is further expanded to emphasize the link between traditional knowledge and genetic and biological resources.

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<sup>25</sup> Yozo Yokota and Saami Council, *Standard-Setting: Review of the Draft Principles and Guidelines on the Heritage of Indigenous Peoples*. Expanded Working Paper Submitted to Working Group on Indigenous Populations, Sub-Commission on the Promotion and Protection of Human Rights, 23rd sess, [Annex (III-A, 1), E/CN.4/Sub.2/AC.4/2005/3, (2005).

<sup>26</sup> <<http://www.coica.org/interna.asp?s=5&r=1>> at 23 January 2005.

According to Balick the term 'traditional knowledge' is to be considered as 'a body of information and sets of skills developed by a group of people over time.'<sup>27</sup>

### **B      *Main Characteristics of Traditional Knowledge***

From the above definitions the main characteristics and types of traditional knowledge become apparent, such as:

- (i)    holistic, flexible, and adaptable or dynamic, nature;
- (ii)   collective ownership;
- (iii)   lack of clear authorship,
- (iv)   communal origination;
- (v)    non-material form;
- (vi)   oral and transgenerational transmission; and
- (vii) strong interconnection of indigenous peoples' culture and values and the inherent value that it has for indigenous peoples and with its surrounding environment and resources.

The following grouping is considered to be relevant as a basis for discussing the creation of legal mechanisms to protect traditional knowledge:

#### **1      *The Holistic Character***

The holistic character of traditional knowledge is reflected in indigenous peoples' worldviews, where traditional knowledge is inextricably linked to traditional territories, resources and culture.<sup>28</sup> Further, it is underscored by the view that traditional knowledge is an integrated and interdependent part of the cultural or spiritual identity of the communities in which it is created, used and preserved.<sup>29</sup> This is the reason why indigenous peoples argue that traditional knowledge cannot be compartmentalized or protected separately from the other components of their culture.<sup>30</sup> They also argue that protection of traditional knowledge should

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<sup>27</sup> Michael J. Balick, 'Traditional Knowledge: Lessons from the Past, Lessons for the Future' (Paper presented at the Conference on Biodiversity and Biotechnology and the Protection of Traditional Knowledge, Washington University in St. Louis, Missouri, 4-6 April 2003). See also United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions, *Development of Elements of a Sui Generis System for the Protection of Traditional Knowledge, Innovations and Practices*, 3rd mtg, [Para. 24 of the Annex], UNEP/CBD/WG8J/3/7, (2003).

<sup>28</sup> Andes (Peru) and Call of the Earth IIED, *Towards a Holistic Approach to Indigenous Knowledge Protection: UN Activities, 'Collective Bio-Cultural Heritage' and the UNPFII*, (2006).

<sup>29</sup> World Intellectual Property Organization, *Intellectual Property and Traditional Knowledge. Booklet n. 2* (2005) 3.

<sup>30</sup> Andes (Peru) and Call of the Earth IIED, above n 28.

be comprehensive to address the multiple threats to their knowledge, resources, territories and culture, together with their territorial rights and rights of self-determination.<sup>31</sup>

The definition of traditional knowledge given by the ‘Royal Commission on Aboriginal Peoples’ in Canada underscores the traditional knowledge’s holistic character. Traditional knowledge is seen as ‘as an ancient, communal, holistic and spiritual knowledge that encompasses every aspect of human existence.’<sup>32</sup>

## 2 *The Dynamic Character*

Mostly, traditional knowledge builds on generations of adaptations to the environment through improvement of and additions to ‘old’ knowledge. Traditional knowledge follows the evolution and adaptation of genetic resources, as it is created all the time; it evolves to enable individuals and communities to meet new challenges and opportunities posed by their social and natural environment.<sup>33</sup> In addition, traditional knowledge also consists of recent knowledge developed through new experimentation and observation. De la Cruz notes that it is precisely the nature of traditional knowledge system, which is rooted in the depths of indigenous peoples’ world vision that has made it possible for plant and animal species to be continuously adapted and improved for generations.<sup>34</sup>

The Canadian Indigenous People’s Organization also emphasizes that traditional knowledge is traditional only to the extent that its creation and use are part of the cultural traditions. The term ‘traditional’, therefore, does not mean that the knowledge is static or antique. The Canadian Indigenous People’s Organization claims that:

[w]hat is ‘traditional’ about traditional knowledge is not its antiquity, but the way it is acquired and used. In other words, the social process of learning and sharing knowledge, which is unique to each

<sup>31</sup> Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights Of Indigenous Peoples' (Paper presented at the International Workshop on Traditional Knowledge, Panama City, 21-23 September 2005). See also Chidi Oguamanam, 'Localizing Intellectual Property in the Globalization Epoch: The Integration of Indigenous Knowledge' (2004) 11 *Indiana Journal of Global Legal Studies* 135-3.

<sup>32</sup> Simon Brascoupe and Howard Mann, *A Community Guide to Protecting Indigenous Knowledge* (2001) 3.

<sup>33</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities Relevant to the Conservation and Sustainable use of Biodiversity. Executive Summary and Recommendations*, 3rd mtg, Montreal, [Para.13], UNEP/CBD/WG8J/3/4, (2003). See also Brendan Tobin, 'Regulating Access and Benefit Sharing in the Andes: Exploring the Challenges of ABS Governance' (Paper presented at the Mountain Forum: A Global Network for Mountain Communities, Environment and Sustainable Development, 2006).

<sup>34</sup> Rodrigo De La Cruz, 'Regional Study in the Andean Countries: Customary Law in the Protection of Traditional Knowledge - Final Report Revised for WIPO' (2006) 25.

indigenous culture, lies at the very heart of its 'traditionality'. Much of this knowledge is actually quite new, but it has a social meaning and legal character, entirely unlike the knowledge indigenous peoples acquire from settlers and industrialized societies.<sup>35</sup>

In practice, the dynamic and innovative characteristics of traditional knowledge have been recognized and accepted by anthropologists, ethnobotanists and other experts,<sup>36</sup> the CBD and its Contracting Parties,<sup>37</sup> and other institutions.<sup>38</sup>

### 3 *The Questions of Ownership and the Holders of Traditional Knowledge*

The terms 'traditional holders' or 'holders of traditional knowledge' have generally been used, to designate the beneficiaries of traditional knowledge. These terms include, but are not limited to, indigenous peoples. While indigenous peoples are important stakeholders, not all traditional knowledge belongs to indigenous peoples. Traditional knowledge can also be created, developed and held by local communities and farming communities.

It is often said that traditional knowledge is collectively owned. A further point is that traditional knowledge is shared amongst different indigenous peoples.<sup>39</sup> To a large extent, the prevailing literature does not clarify whether this assumption means that traditional knowledge is collectively generated (where each member of a community makes some intellectual contribution), or whether it means that the rights over such knowledge are communally owned or shared; or whether this label has both meanings.

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<sup>35</sup> Four Directions Council, *Forests, Indigenous Peoples and Biodiversity: Contribution of the Four Directions Council. Draft Paper to the Secretariat of the Convention on Biological Diversity*, (1996).

<sup>36</sup> Stephen B. Brush, 'The Demise of 'Common Heritage' and Protection for Traditional Agricultural Knowledge' (Paper presented at the Conference on Biodiversity, Biotechnology and the Protection of Traditional Knowledge, Washington University, 4-5 April 2003).

<sup>37</sup> CBD, above n 8, Art. 8(j). For example, Article 8(j) of the CBD provides that: 'each contracting party shall, as far as possible and as appropriate subject to national legislation, respect, preserve, and maintain knowledge, innovations and practices of indigenous and local communities ...' See also United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions, Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities, [Para.11], UNEP/CBD/WG8J/3/INF-10, (2003).

<sup>38</sup> Crucible Group, *People, Plants and Patents: The Impact of Intellectual Property in Trade, Plant Biodiversity and Rural Society* (1994) 4 fig 1.

<sup>39</sup> Graham Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge* (2004) 59. See also Anil K. Gupta, 'How Can Asian Countries Protect Traditional Knowledge, Farmers' Rights and Access to Genetic Resources through the Implementation or Review of the WTO TRIPS Agreement' (Paper presented at the Joint ICTSD/CEE/HBF Regional Dialogue for Governments and Civil Society, Chiang Mai, Thailand, March 29-30 2001).

According to Gupta, there are several variations in the way in which traditional knowledge is created by individuals or communities.<sup>40</sup> Firstly, there is a situation where different indigenous peoples, independently or without any influence or contribution from other indigenous peoples, develop traditional knowledge which evolves in such a way as to be identical or similar to traditional knowledge which is simultaneously but independently generated by other indigenous peoples.<sup>41</sup> Secondly, there is the case where traditional knowledge is shared exclusively among members of a particular indigenous people.<sup>42</sup> Thirdly, traditional knowledge may be individually and exclusively held by a particular member (or members) of one indigenous people, such as shamans, herbalists, elders or women. This does not mean, however, that these people have developed or created the knowledge. Their role as custodian or caretaker is often linked to their social function in the community, or because they fulfill certain spiritual or cultural requirements.<sup>43</sup> However, individuals' rights and responsibilities should not be understood as ownership or property rights.<sup>44</sup> The recognition of individual rights is often communally determined,<sup>45</sup> and the use of such knowledge is bounded by the laws of their community; thus the traditional custodian or caretaker does not have the right to use such knowledge in a free or unconstrained manner. Their privileges and status as a custodian of the knowledge will last as long as they continue to act in the best interests of the community.<sup>46</sup> As traditional knowledge has intangible and spiritual

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<sup>40</sup> Anil K. Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge* (2004) WIPO <[http://www.wipo.int/tk/en/publications/769e\\_unep\\_tk.pdf](http://www.wipo.int/tk/en/publications/769e_unep_tk.pdf)> at 4 April 2006.

<sup>41</sup> Vestal and Schultes, quoted by Josephine R. Axt, M. Lynne Corn, Margaret Lee and David M. Ackerman, *Biotechnology, Indigenous People, and Intellectual Property Rights* (1993) Congressional Research Service, Library of Congress <[http://www.ipmall.fplc.edu/hosted\\_resources/crs/93-478.pdf](http://www.ipmall.fplc.edu/hosted_resources/crs/93-478.pdf)> at 18 November 2003. See also Ana Maria Pacon, 'The Peruvian Proposal on the Protection of Traditional Knowledge' (Paper presented at the Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, Geneva, 30 October-1 November 2000).

<sup>42</sup> Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 39, 95. See also Gupta, 'How Can Asian Countries Protect Traditional Knowledge, Farmers' Rights and Access to Genetic Resources through the Implementation or Review of the WTO TRIPS Agreement', above n 39. See also Matthias Leistner, 'Analysis of Different Areas of Indigenous Resources' in Silke von Lewinski (ed.), *Indigenous Heritage and Intellectual Property. Genetic Resources, Traditional Knowledge and Folklore* (2004) 49, 57.

<sup>43</sup> Jerzy Koopman, 'Biotechnology, Patent Law and Piracy: Mirroring the Interest in Resources of Life and Culture' (2003) 7.5 *Electronic Journal of Comparative Law* 1-6.

<sup>44</sup> Erica-Irene Daes, *Protection of the Heritage of Indigenous People, Human Rights Study Series* (1997) 4.

<sup>45</sup> Johanna Gibson, *Community Resources: Intellectual Property, International Trade and Protection of Traditional Knowledge. (Globalization and Law)* (2005) 41.

<sup>46</sup> Tulalip Tribes of Washington, Statement by the Tulalip Tribes of Washington. Folklore, Indigenous Knowledge, and the Public Domain, 5th mtg of the WIPO's Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, (2003). See also Unctad-Commonwealth Secretariat, 'Report of the UNCTAD-Commonwealth Secretariat' (Paper presented at the Workshop on Elements of National Sui Generis Systems for the Preservation, Protection and Promotion of Traditional Knowledge, Innovations and Practices and Options for an International Framework, Geneva, 4-6 February 2004). See also Daes, above n 44, 4.

manifestations that relate to a community as a whole rather than to an individual, it is still perceived by communities as belonging to them collectively. Fourthly, in some cases, however, individuals have generated innovative resources within the general community and consequently are recognized as informal creators or inventors as distinct from the community.<sup>47</sup> In short, rights and responsibilities relating to knowledge may vary between individuals within a community.<sup>48</sup>

Indigenous peoples have asserted that ‘in practice, elements of indigenous peoples’ cultural heritage are not always created within firmly structured identifiable communities that can be treated as legal persons or unified actors.’<sup>49</sup> Further, they have affirmed that indigenous peoples’ cultural heritage is a product of cross-cultural exchange and influence.<sup>50</sup> From a wider perspective, the concept of ownership amongst indigenous peoples is significantly different from the concepts established by the mainstream legal system:

While intellectual property rights confer private rights of ownership, in customary discourse to ‘own’ does not necessarily or only mean ‘ownership’ in the Western non-Indigenous sense. It can convey a sense of stewardship or responsibility for the traditional culture, rather than the right merely to exclude others from certain uses of expressions of the traditional culture, which is more akin to the nature of many IP rights systems.<sup>51</sup>

This comment is useful in illustrating that the concept of individual or personal ownership may not be appropriate for certain indigenous peoples, as this concept presumes a type of the relationship between right-holders and the object that is not significant or appropriate in the context of customary practices and systems regulating the possession of, and access to traditional knowledge.<sup>52</sup>

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<sup>47</sup> Anil K. Gupta, *Building Upon What the Poor are Rich in: Honey Bee Network Linking Grassroots Innovations, Enterprise, Investments and Institutions* University of Colorado <<http://csf.Colorado.edu/sristi/papers/building.html>> 2 May 2006.

<sup>48</sup> S. Brascoupé and K. Endemann, 'Intellectual Property and Aboriginal People: A Working Paper' (Hull, Quebec: Research and Analysis Directorate, Department of Indian Affairs and Northern Development and the Intellectual Property Policy Directorate, Industry Canada, 1999) 1.

<sup>49</sup> Yozo Yokota and Saami Council, above n 25, Annex (III-A, 3).

<sup>50</sup> Ibid.

<sup>51</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Preliminary Systematic Analysis of National Experiences With the Legal Protection of Expressions of Folklore. Document prepared by the Secretariat*, 4th mtg, [Para. 22], WIPO/GRTKF/IC/4/3, (2002).

<sup>52</sup> Johanna Gibson, 'Traditional Knowledge and the International Context for Protection' (2004) 1(1) *SCRIPT -ed* 48-55.

Stoll and Hahn argue that the concept of collective rights, even when applied to knowledge which is considered to be common heritage of a group, does not mean that such knowledge would always be shared by most or even all members of a group.<sup>53</sup> Not every member of the community knows the same or has equal right to use, or to pass such knowledge on to outsiders. Knowledge and rights are not evenly distributed within the community. Different rights are assigned to different members of the group. In many cases, in accordance with their customary law and customs, these rights are reserved for elders, shamans or healers of the group.<sup>54</sup>

Customary laws show the existence of rules or systems for acquiring, possessing and sharing knowledge.<sup>55</sup> Thus, it has been assumed that the sharing of knowledge is common to many indigenous peoples.<sup>56</sup> As a result, in a number of cases, it has been considered difficult, if not impossible, to identify the sources or the author of traditional knowledge,<sup>57</sup> especially when it is widely disseminated.<sup>58</sup> A further complicating factor is that many indigenous peoples sharing the same, or similar, traditional knowledge reside in different countries.

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<sup>53</sup> Peter-Tobias Stoll and Anja Von Hahn, 'Indigenous Peoples, Indigenous Knowledge and Indigenous Resources in International Law' in Silke von Lewinski (ed.), *Indigenous Heritage and Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore* (2004) 4, 12.

<sup>54</sup> Ibid 14.

<sup>55</sup> Mi'kmaw Peoples, *Research Principles and Protocols*, (2000). For example, the Mi'kmaw knowledge may have traditional owners involving individuals, families, clans, associations, and societies which must be determined in accordance with their own customs, laws, and procedures. In this context, the Mi'kmaw have established a set of principles and protocols that protects their knowledge and states that Mi'kmaw knowledge is collectively owned, discovered, used, and taught and must be collectively guarded by appropriate delegated or appointed collective(s) who oversee these guidelines and process research proposals. See also Leistner, above n 42, 57.

<sup>56</sup> Duffield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 39, 95.

<sup>57</sup> Anupam Chander and Madhavi Sunder, 'The Romance of the Public Domain' (2004) 92 *California Law Review* 1331, 369.

<sup>58</sup> Rachel Wynberg, 'Rhetoric, Realism and Benefit-Sharing Use of Traditional Knowledge of Hoodia Species in the Development of an Appetite Suppressant' (2004) 7(6) *The Journal of World Intellectual Property* 851-62. For example, according to Wynberg, the restricted distribution of Hoodia species suggested that almost certainly, not all groups of the San had historically utilized the plant. But identifying those groups that did have a clear record of use was nearly impossible, given the San's history of resettlement and dislocation. Moreover, thousands of people in Southern Africa claim San descent, and have a recent history of use of Hoodia. As a result, the San Peoples decided that benefits resulting from shared heritage, such as Hoodia, must be shared equally amongst all San peoples. See also Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge*, above n 40. Gupta notes that the Shaman Pharmaceuticals Company has decided to share benefits with all the communities from whom Shaman has sourced any material at any time, even if the final products emerged from only one lead provided by only one community. See also Pacon, above n 41.

#### 4 *The Collective Nature of Traditional Knowledge Associated with Genetic Resources*

Regarding traditional knowledge associated with genetic resources, it has been noted that some genetic resources may only be known by a particular indigenous community within a region, while others may be known by more than one indigenous people in a region. Still, in some cases, traditional knowledge is broadly known throughout an entire country or other countries and regions.<sup>59</sup> Further, it has been said that indigenous peoples sharing the same environmental conditions and same genetic resources (regionally based) develop identical or similar systems of knowledge, by using some plants in a manner identical to that used in neighboring or in foreign communities, or by using some plants in the same way, sometimes even using the same processes, as well as in some additional ways.<sup>60</sup> It is not possible to debate the veracity of this assumption in any detail here as it would take this discussion well beyond its proper scope. However, it may be noted that this statement finds some support on the results of a survey conducted by the 'Rural Advancement Foundation International' and the 'Indigenous Peoples' Biodiversity Network' on about one thousand examples of uses for 150 medicinal plant species. The survey shows that a substantial majority of the medicinal plants surveyed are used by different indigenous peoples often for the same purpose. Further, the survey shows that around 35 per cent of these plants are used for the same purpose in at least one other country.<sup>61</sup> Another example is mentioned by Belée, who found out that the Ka'apor people, who live in the extreme east of the Amazon rainforest, use some ants as a febrifuge in the same way as the Sirionó people, who live in Bolivia around 1300 miles to the

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<sup>59</sup> Brush, 'Indigenous Knowledge of Biological Resources and Intellectual Property Rights: The Role of Anthropology', above n 2. Brush notes that the properties of the *gauvolfia serpentina* (L.) Benth.ex Kurz. Resperine - which was used to develop a drug used to treat high blood pressure, insomnia, and some mental disorders - were first recognized in South Asia and Southeast Asia. Today this plant is grown throughout India, Burma, the Andaman Islands, Thailand, Vietnam, Java, Sumatra, and Malaysia. See also Michael J. Huft, 'Indigenous Peoples and Drug Discovery Research: A Question of Intellectual Property Rights' (1995) 89(4) *Northwestern University Law Review* 1678-03.

<sup>60</sup> Axt, Corn, Lee and Ackerman, above n 41. See also Alvaro Zerda-Sarmiento and Clemente Forero-Pineda, 'Intellectual Property Rights Over Ethnic Communities' Knowledge' (2002) 54(171) *International Social Science Journal* 99-100. See also Pacon, above n 41. See also Suman Sahai, 'Commercialization of Traditional Knowledge and Benefit Sharing' (Paper presented at the UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, Geneva, 30 October-1 November 2000).

<sup>61</sup> Rural Advancement Foundation International, *Bioprospecting/Biopiracy and Indigenous Peoples. RAFI Communique* (1994) ETC group <<http://www.etcgroup.org/article.asp?newsid=212>> at 14 September 2005. RAFI provides some examples, as follows: it was identified that *Anthurium tessmannii* is used as a contraceptive in Colombia by three different indigenous peoples. The root of *Anthurium ulleanum* is used for headaches by two different Panamanian communities. *Dipteryx odorata* is used by one indigenous community in Haiti and by another in Guyana/Brazil.



west.<sup>62</sup> Another example was given by Farnsworth; it is a case from the Peruvian-Ecuadorian border where five distinct indigenous peoples (all belonging to the Jivaro ethnic grouping) live; they hold much of the same knowledge.<sup>63</sup>

It is a belief common to scientists and pharmaceutical companies that when traditional knowledge about the use of a particular genetic resource is shared across a broad region, it may be an indication of the existence of biological activity.<sup>64</sup> In practice, this tends to mean that identical or similar traditional knowledge shared or held in common by different indigenous peoples is the most likely candidate for further product research examination.<sup>65</sup> One of the key problems is that the trans-boundary nature of the distribution of genetic resources makes the identification of the source of traditional knowledge very difficult.<sup>66</sup> Indeed, the trans-boundary nature of the distribution of genetic resources prevents the acknowledgment of the particular unit, group or people who have originally developed such knowledge, either because two or more peoples or communities share the knowledge and the genetic and biological resources, or because the originator is unknown.<sup>67</sup> Thus, the question here is, if a particular genetic resource and its use are known or shared by a number of indigenous peoples within a country and across national borders, how does one identify the rightful authority to determine access, use and benefit-sharing?<sup>68</sup> The mere fact of commonality in the knowledge and/or its applications gives rise to the impossibility of

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<sup>62</sup> Norman R. Farnsworth, 'Ethnopharmacology and Drug Development' in Ghilleen T. Prance, Derek J. Chadwick and Joan Marsh (eds), *Ethnobotany and the Search for New Drugs. Ciba Foundation Symposium* (1994) 42-56.

<sup>63</sup> Brendan Tobin, 'The Search for an Interim Solution' in Kathy Whimp and Mark Busse (eds), *Protection of Intellectual Biological & Cultural Property in Papua New Guinea* (2000) 169, 76.

<sup>64</sup> The discussion about which genetic resources should be screened took place in the Symposium on Ethnobotany and the Search for New Drugs, held on Fortaleza, Brazil. This understanding was supported by W. Balée, N. R. Farnsworth, G. T. Prance, and G. M. Cragg and others. For more information see, Farnsworth, 'Ethnopharmacology and Drug Development' above n 62.

<sup>65</sup> Steven R. King and Michael S. Tempesta, 'From Shaman to Human Clinical Trials: The Role of Industry in Ethnobotany, Conservation and Community Reciprocity' in Ghilleen T. Prance, Derek J. Chadwick and Joan Marsh (eds), *Ethnobotany and the Search for New Drugs. Ciba Foundation Symposium* (1994) 197-99. Accordingly to the authors, the Shaman Pharmaceuticals Company argues that where an informant has recognized and described the same or similar disease condition, the botanical treatment of that condition is recorded. If several independent and reliable informants describe similar treatment for a disease, the plant is collected.

<sup>66</sup> Sahai, above n 60.

<sup>67</sup> Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 39, 96. See also Amanda B. King and Pablo B. Eyzaguirre, 'Intellectual Property Rights and Agricultural Biodiversity: Literature Addressing the Suitability of IPR for the Protection of Indigenous Resources' (1999) 16 *Agriculture and Human Values* 41-43. See also Pacon, above n 41.

<sup>68</sup> Ik Notes, *Indigenous Knowledge and Intellectual Property Rights* (2000) IK <<http://www.worldbank.org/afr/ik/iknt19.pdf>> at 5 May 2006.

recognizing which unit, group or people may legitimately claim authority and the exclusive rights over such knowledge.<sup>69</sup>

Further, where there is an overlap between both the holders of traditional knowledge and also of the rights generated by that knowledge,<sup>70</sup> problems may arise for companies interested in gaining access to such knowledge. The difficulties may consist in both identifications of the people, family, group or clan, and the appropriate source for the authorization of the use of the knowledge, the distribution of the benefits, and subsequently, for the validation of any agreement or contractual rights that arise as a result.<sup>71</sup> It seems likely that the users of traditional knowledge will lack legal certainty with respect to proceeding with concurrent or future claims for benefits which may be brought by other indigenous peoples. Thus, it is conceptually problematic to assert that a particular indigenous people or group is entitled to property rights over a particular traditional knowledge.<sup>72</sup> Another significant complication is that traditional knowledge held or shared by various indigenous peoples may enable the users to claim that they acquired traditional knowledge from whichever country and community they choose, under terms and conditions most favorable to them.

WIPO has noted that there is no specific solution provided when two communities own overlapping traditional knowledge rights granted by different countries. To address this problem, WIPO has outlined some related issues. First there is a need to define the applicable law and the legal competence of national or regional authorities to authorize the access to traditional knowledge which may form part of the national heritage of different countries. Further, it is also necessary to create legislative and administrative rules which are capable of both regulating the authorization for several communities and even countries, and establishing, where necessary, exceptions to these laws, or possibly providing for competition between communities. Another problem is the need to define the allocation of royalties that

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<sup>69</sup> Brush, 'Indigenous Knowledge of Biological Resources and Intellectual Property Rights: The Role of Anthropology', above n 2.

<sup>70</sup> As mentioned previously overlapping rights are due to the simultaneous recognition of rights of different holders, by different national systems, over the same or similar knowledge.

<sup>71</sup> Naomi Roht-Arriaza, 'Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities' (1996) 17(Summer) *Michigan Journal of International Law* 919-63. Roht-Arriaza notes that 'in numerous cases, more than one community makes similar use of the same resources, sometimes even using the same processes'. From this assertion, Roht-Arriaza enquires 'which community is to receive the intellectual property rights: the first to invent, the first to file, or any community showing that they have long used the process or product at issue?' According to her conclusion, where it is impossible to associate a certain traditional knowledge or material with a unique ethnic or geographic group, a public, multilateral set of agreements among states and communities might become a workable solution.

<sup>72</sup> Markku Oksanen, *Authorship, Communities and Intellectual Property Rights* (1998) University of Indiana <<http://www.indiana.edu/~iascp/Drafts/oksanen.pdf>> at 27 February 2006.

may arise from the exploitation of shared traditional knowledge between different indigenous peoples and countries. The creation of a special mechanism to determine when an element of traditional knowledge is national or regional is also necessary. Finally, it is essential to provide a mechanism for the resolution of disputes between different stakeholders. WIPO suggests that this issue may be addressed on a multilateral level, with contracting countries accepting some rules on the articulation of national protection systems and, eventually, leading to minimum harmonized standards of protection.<sup>73</sup>

## **5     *Traditional Knowledge and the Concepts of ‘Public Domain’ and ‘Common’***

There has been a significant increase in the number of non-indigenous people claiming ownership of products or processes that are based on traditional knowledge, without any benefit flowing back to the community from which the knowledge originated. This is to say, traditional knowledge has left the public domain from which it was freely accessed and has returned to society as a private good. On this basis, non-indigenous people and/or corporations are modifying the ‘public good’ character of traditional knowledge to the detriment of indigenous peoples. Sometimes, the demarcation line between the development of a new invention from what is already known by indigenous people is indistinct. This result is a fundamental economic distortion: although traditional knowledge has enormous potential economic value, such knowledge, until transformed into a technological invention, remains in the public domain, and as such, can be freely appropriated and exploited.

There is an asymmetry in the distribution of benefits between those who are capable of exploiting traditional knowledge and traditional resources, and the holders of such knowledge. Such inequality in the allocation of rights may create disincentives for the holders of such resources to develop, use and grant access to their knowledge and is likely to increase the devaluation and loss of traditional knowledge. The argument is not that traditional knowledge will not be used or created at all without any incentives, but rather that the continuing processes of innovation may be reduced significantly, and; consequently the survival of traditional knowledge may be threatened. A further concern is that the current framework

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<sup>73</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Composite Study on the Protection of Traditional Knowledge*, [Para. 121], WIPO/GRTKF/IC/5/8, (2003). See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Matters Concerning Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore - An Overview*, [IV.B.1 (Para. 70)], WIPO/GRTKF/IC/1/3, (2001).

operates to disempower the capacity of customary systems to adequately protect traditional knowledge. As Drahos notes:

The capacity of all communities to determine a regulatory structure for the intellectual commons is in the process of being taken away from them. It is being taken away because the regulation of abstract objects is progressively shifting from the territorial and the international to the global.<sup>74</sup>

Losing control over traditional knowledge does not necessarily mean that indigenous peoples are deprived of their right over such knowledge. It should mean that the tool for exercising this right, which is related to control of their knowledge, is no longer available.

**(a) *Traditional Knowledge and the Concept of Common***

Ever since Hardin published 'The Tragedy of the Commons',<sup>75</sup> there has been a growing debate about the concepts of 'common', 'communal property', 'open access regime', 'common pool property or resources', and 'public domain'.<sup>76</sup> Similarly, because of the granting of patents on plants, seeds, genes, and gene sequences, these debates have extended to issues of access to traditional knowledge. It is often said that traditional knowledge is part of the public domain, to which open access is freely available. As a result, traditional knowledge has been devalued as a 'good' worthy of protection.<sup>77</sup>

Bromley and Cernea suggest that after the publication of Hardin's article, the concept of an 'open access regime' (where things have not or have never had an owner, thus no one has the legal right to exclude anyone else from using such things) has often been mistakenly

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<sup>74</sup> Peter Drahos, 'Indigenous Knowledge and the Duties of Intellectual Property Owners' (1997) 11 *Intellectual Property Journal* 179-80.

<sup>75</sup> Garrett Hardin, 'The Tragedy of the Commons', (1968) 162 *Science*, 1243-48. The tragedy 'is the situation in which unowned and unmanaged common resources are available to all, with the consequence that entrants crowd onto these resources, overusing them and underinvesting in their maintenance and improvement.' The concept of 'commons' was used to refer to resources passable of overexploitation, such as forest and fish. See also Carol M. Rose, 'The Several Futures of Property: Of Cyberspace and Folks Tales, Emission Trades and Ecosystems' (1998) 83 *Minnesota Law Rev.* 129-29.

<sup>76</sup> Gelvina Rodriguez Stevenson, *Common Property Economics: A General Theory and Land Use Application*, Cambridge University Press (1991) 182.

<sup>77</sup> English Department Authorship Collaborative at Case Western Reserve University, *Beyond Authorship: Imagining Rights in Traditional Culture and Bioknowledge* Case Western Reserve University <<http://home.cwru.edu/~ijd3/authorship/#three>> 10 February 2004. See also Chika B. Onwuekwe, 'The Commons Concept and Intellectual Property Regime: Whither Plant Genetic Resources and Traditional Knowledge?' (2004) 2(1) *Pierce L. Rev* 65-66.

interpreted as being applicable to common property (where things are owned by an identified group of people invested with the right to exclude non-owners).<sup>78</sup>

Bromley adds that the misunderstanding has occurred because most things that appear to be in open access are actually communal property or regulated by the state. The second reason for this misunderstanding is that some writers have failed to understand the concept of property. As a result, sometimes both the concept and the resources are referred to as 'commons'. In addition, the expression 'common property resources' is used under conditions which indicate a complete absence of institutional mechanisms for administration or regulation.<sup>79</sup> Such a misunderstanding may also be due to inconsistent terminology, which ranges across such varied areas as environment, economics, anthropology, sociology and law, in describing a spectrum of facts, situations or ideas. The terms 'common' and 'communal property' have been used by both sociologists and anthropologists to refer to a type of collective ownership.<sup>80</sup> In economic matters, the term 'common property' has been taken to mean 'common-pool resources' or 'common-pool property'.<sup>81</sup> This usage arose from the economic theory of the commons concerning the decentralization of environmental management and promotion of the concept of community-based conservation.<sup>82</sup> In international law, the terms 'global common' and 'global public goods' have been used synonymously. Further, both terms have

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<sup>78</sup> Daniel W. Bromley and M. M. Cernea, 'The Management of Common Property Natural Resources: Some Conceptual and Operational Fallacies. World Bank Discussion Papers No. 57' (World Bank, 1989) 12.

<sup>79</sup> Daniel W. Bromley, 'The Commons, Common Property, and Environmental Policy' (1992) 2 *Environmental and Resource Economics* 1-2.

<sup>80</sup> Sociologists and anthropologists have been using the terms 'common' and 'communal property' to refer to areas or resources co-owned by a specific community, where the owners are unable to exclude each other but are capable of excluding outsiders. Bromley observes, 'common property represents private property for the group of co-owners because all others are excluded from use and decision-making'. Thus, the use of the term 'common property' is appropriate in referring to the property of indigenous peoples and, as a result, to their traditional knowledge. As Posey and Dutfield observe: 'communal property is the prevailing system used in most traditional societies to control access to basic resources like food and fuel, but rights are multiple in that individuals, elders, women, clans, lineages, etc., each have ownership rights within a given resource area and over specified resources within them. Such rights may vary in their extent from one group to another, but they are inalienable (others cannot take away or undermine them)'. See Daniel W. Bromley, *Environment and Economy, Property Rights and Public Policy* (1991) 25. See also Darrell A. Posey and Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities* (1996) 60. See also Onwuekwe, above n 77, 76, 76.

<sup>81</sup> Charlotte Hess and Elinor Ostrom, 'Ideas, Artifacts, and Facilities: Information as a Common-Pool Resource' (2003) 66 *Law And Contemporary Problems* 111-17.

<sup>82</sup> *Ibid* 171.

been used to designate areas or resources beyond state jurisdiction or territorial boundaries.<sup>83</sup> The term 'common property resources' has been used as a synonym for 'open access'.<sup>84</sup> Finally there is a tendency to conflate the public domain with a public good, or to identify the public domain as an inherent public good. As a result, the terms 'commons' or 'public good' are often used synonymously or interchangeably with the term 'public domain' to signify that the good can be used without any restriction.<sup>85</sup> In this chapter, however, the term 'public domain' is used to refer to information or knowledge that is not covered by, or is ineligible for intellectual property protection. Thus, the content of such information or knowledge is available for free use by anyone, at least from the perspective of intellectual property law.

In general, public goods (unlike private goods) exhibit two characteristics which are non-rivalrous (or jointness) of consumption and non-exclusion.<sup>86</sup> Knowledge and information are considered to be public goods because they often exhibit a high degree of jointness of consumption (non-rivalry) and non-excludability.<sup>87</sup> This is because these resources can be used again and again without exhaustion, and further, because their use by someone does not prevent or inhibit their use by others.<sup>88</sup> Thus, a number of individuals can use knowledge or

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<sup>83</sup> In the international legal arena, the words 'commons' and 'public goods' refer to assets, resources, or services beneficial to a country, region or the whole world. Thus, resources of this nature shall be available for the benefit of humanity. For instance, the three principal global commons regimes already established under international law are the oceans, outer space, and Antarctica. It is worth noting that the concept of common heritage does not imply a lack of rules governing the access, use and management of common assets. It is submitted here that the common heritage principles applied to international legal frameworks such as the Antarctic Treaty and the Convention on the Law of the Sea, (namely: non-appropriation, international management, benefit-sharing, and reservation for peaceful purposes) are not suitable for regulating the access to and use of traditional knowledge, not only because traditional knowledge is found within the jurisdiction of a recognized territory, but also because, unlike the global commons, traditional knowledge is capable of being subject to private appropriation and exploitation. Thus, classifying traditional knowledge as part of the commons as such term is defined and used by international law, is unsuitable. For more information about this topic, see Onwuekwe, above n 77, 76. Conversely, Trotti suggests that a *sui generis* regime to protect traditional knowledge could be built on, and supported by, common heritage principles which had been enunciated at the global level as Part XI of the United Nations *Convention on the Law of the Sea*. See J. L. Trotti, 'Compensation Versus Colonization: A Common Heritage Approach to the Use of Indigenous Medicine in Developing Western Pharmaceuticals' (2001) 56(3) *Food and Drug Law Journal* 367-77. The concepts of common heritage applied to international legal frameworks such as the *Antarctic Treaty* (1959) and the U.N. *Convention on the Law of the Sea* can be found at [http://www.un.org/Depts/los/convention\\_agreements/texts/unclos/closindx.htm](http://www.un.org/Depts/los/convention_agreements/texts/unclos/closindx.htm) at 23 April 2006.

<sup>84</sup> Onwuekwe, above n 77, 71 and 75.

<sup>85</sup> Antony Taubman, 'Saving the Village: Conserving Jurisprudential Diversity in the International Protection of Traditional Knowledge' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (2005) 521, 58. Taubman argues that speaking technically the term 'public domain' should be used to refer to goods for which the term of intellectual protection has already lapsed, or to knowledge which is disclosed in face of patent rights.

<sup>86</sup> J. H. Reichman and Paul F. Uhler, 'A Contractually Reconstructed Research Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment' (2003) 66 *Law And Contemporary Problems* 315-62.

<sup>87</sup> Paul A. David, 'Koyaanisqatsi in Cyberspace: The Economics of an 'Out-of-Balance' Regime of Private Property Rights in Data and Information' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (2005) 81, 87.

<sup>88</sup> *Ibid* 85.

information without depleting the original.<sup>89</sup> Further, at least in theory, knowledge is an inexhaustible resource as new knowledge is constantly being generated.<sup>90</sup>

Marsus and Reichman argue that drawing a line between knowledge which should be in the public domain and thus accessible to all and knowledge which should be subject to private property has been a delicate, controversial and economically uncertain task in even the most developed countries.<sup>91</sup>

To some extent, traditional knowledge shares the characteristics of non-rivalrous consumption and non-excludability.<sup>92</sup> Despite this, the assumption that traditional knowledge is inexhaustible has been challenged. In a strict sense, traditional knowledge does not suffer from the problem of overuse. However, traditional knowledge is currently under threat. One of the most significant threats to traditional knowledge is the globalization of culture and trade. The process of globalization undermines cultural diversity and disrupts the traditional ways of life of indigenous peoples.<sup>93</sup> As a result, the capacity of indigenous peoples to conserve and to pass on their culture and knowledge to future generations is being undermined. The process of global trade has encouraged the privatization of biodiversity and private ownership over genetic resources. In a similar vein, traditional resources have been gradually eroded, mainly due to the adoption of modern farming methods which have undermined the value of traditional varieties.<sup>94</sup> As the Tuxil, a research at World Watch Institute, has noted, traditional knowledge about medicinal plants is disappearing even faster than the plants themselves.<sup>95</sup>

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<sup>89</sup> Ruth L. Okediji, 'Access, Benefit-sharing and the Interface with Existing IP Systems: Limits and Opportunities' in Mariana Bellot-Rojas and Sophie Bernier (eds), *International Expert Workshop on Access to Genetic Resources and Benefit Sharing. Record of Discussion* (2005) 159, 60.

<sup>90</sup> Graham Dutfield, 'The Public and Private Domains, Intellectual Property Rights in Traditional Knowledge' (2000) 21(3) *Science Communication* 274-79.

<sup>91</sup> Keith E. Maskus and Jerome H. Reichman, 'The Globalization of Private Goods and the Privatization of Global Public Goods' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime* (2005) 3-16. See also Taubman, above n 85, 546.

<sup>92</sup> Okediji, above n 89, 62.

<sup>93</sup> Rosemary J. Coombe, 'Protecting Cultural Industries to Promote Cultural Diversity: Dilemmas for International Policymaking Posed by the Recognition of Traditional Knowledge' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (2005) 613. See also Brendan Tobin, 'Towards an International Regime for Protection of Traditional Knowledge: Reflections on the Role of Intellectual Property Rights' (Paper presented at the Conference on Bioethical Issues of Intellectual Property in Biotechnology, Tokyo, Japan, 2004).

<sup>94</sup> CBD, Composite Report, above n 73, Para 11.

<sup>95</sup> John Tuxill, *Plant Losses Threaten Future Food Supplies and Health Care* (1999) Worldwatch Institute <<http://www.worldwatch.org/node/1660>> 17 September 2007.

Another problem faced by indigenous peoples is the diminution in value and significance of traditional knowledge as a result of disaffection by younger generations, who have abdicated the study of traditional knowledge and practices. This has occurred largely because younger people do not perceive any potential economic return or benefit from learning the traditions or maintaining traditional varieties. Instead they see the benefits of commercialization flowing to others. Further, the lack of acknowledgement and respect of indigenous peoples' customary law and decision-making processes may contribute to the erosion of traditional knowledge.<sup>96</sup> Finally, it is believed that the maintenance of the notion that traditional knowledge is part of the public domain and the recognition of individual rights (mainly to non-indigenous people) over such knowledge, constitute denial of indigenous peoples' capacity and authority over their knowledge. Hence, it may undermine their traditional resource management systems and interfere with, or ruin their community institutions and traditional authorities.<sup>97</sup>

It is important to note that those who contend that traditional knowledge should be treated analogously to public goods because it is inexhaustible fail to fully address the role of intellectual property protection in their analysis. The protection of genetic resources and associated traditional knowledge may have implications for the ability of others to use these resources. This is because the first person who incorporates a genetic resource or associated traditional knowledge into a patent gains a monopoly over the final product or process. While others could still technically use the genetic resource and associated knowledge, the ways in which they can be used may be limited by the monopoly right to control the use of certain genetic resources and species of which they are a part.<sup>98</sup> The use of traditional knowledge for commercial purposes does not decrease the existing stock available or exclude its current use in the traditional context.<sup>99</sup> However, the use of traditional knowledge can be considered to be rivalrous in the sense that once a patent of a process or product incorporating such knowledge

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<sup>96</sup> Taubman, above n 85, 550.

<sup>97</sup> UNEP/CBD/WG8J/3/INF-10, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities*, above n 37, Para 11. See also Janis B. Alcorn, 'Economy Botany, Conservation, and Development: What's the Connection?' (1995) 82(1) *Annals of Missouri Garden* 34-41.

<sup>98</sup> Crucible Group, 'Crucible II Project: Indigenous and Local Knowledge' (International Development Research Centre, 1999).

<sup>99</sup> K. Aparna Bhagirathy, 'Using Traditional Knowledge for Commercial Innovations: Incentives, Bargaining and Community Profits. SANDEE Working Paper No. 11-05' (2005) 5.



is sought, the economic value of that knowledge decreases significantly as there is no additional value for obtaining the same knowledge a second a third time.<sup>100</sup>

The erosion of traditional knowledge is a threat as serious as the erosion of genetic and biological resources,<sup>101</sup> because the value of such knowledge may be greater than the value of the physical resource itself.<sup>102</sup> The disappearance of traditional knowledge might be a tragedy for those indigenous peoples and local communities who depend on the integrity of their knowledge systems for their cultural and physical survival.<sup>103</sup> It would also be a tragedy for the advancement of both scientific research and international trade, because researchers would not be able to access traditional knowledge and traditional varieties, since such resources would eventually become extinct.

At this point it is worth mentioning that the degree to which the quality of non-excludability applies to a good is affected by social norms,<sup>104</sup> or by public policy interests.<sup>105</sup> Further, the non-rivalrous character of some goods may also be affected by some circumstances.<sup>106</sup> For instance, the degree of codification of information and its type of embodiment can, however, affect the public good qualities of information and its quality of non-rivalry. From this perspective, it can be argued that only codified knowledge can be considered as a public good,<sup>107</sup> as the codification enables an easy reproduction of knowledge, thus, its use is uncontrollable or non-excludable. Conversely, un-codified information or tacit knowledge (such

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<sup>100</sup> Ibid. See also Chetan Gulati, 'The "Tragedy of the Commons" in Plant Genetic Resources: The Need for a New International Regime Centered Around an International Biotechnology Patent Office' (2001) 4 *Yale Human Rights and Development Law Journal* 64-91.

<sup>101</sup> Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge*, above n 40.

<sup>102</sup> World Bank, 'World Development Report, Knowledge for Development' (Oxford University Press, 1999) 16. The World Bank has pointed out that: 'Today knowledge is perhaps the most important factor determining a nation's standard of living - more than land, than tools or labor.'

<sup>103</sup> Dutfield, 'The Public and Private Domains, Intellectual Property Rights in Traditional Knowledge' above n 90, 290.

<sup>104</sup> Peter Drahos, 'The Regulation of Public Goods' in Keith E. Markus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime* (2005) 46, 50.

<sup>105</sup> Taubman, 'Saving the Village: Conserving Jurisprudential Diversity in the International Protection of Traditional Knowledge' above n 85, 548.

<sup>106</sup> Drahos, 'The Regulation of Public Goods', above n 104, 49.

<sup>107</sup> Nicolas Brahy, *The Contribution of Databases and Customary Law to the Protection of Traditional Knowledge*, in *Les Carnets du Centre de Philosophie du Droit* No. 117 (2005) 23. <<http://www.cpd.r.ucl.ac.be/docTravail/BrahyN117.pdf>> at 13 June 2006.

as a special skill or talent)<sup>108</sup> does not qualify as a perfectly public good. This is because un-codified knowledge reduces the character of its non-rivalry, thus, un-codified knowledge has some excludability, as its possessor has some control over its transmission.<sup>109</sup>

In most cases, traditional knowledge is un-codified, thus it can be assumed that it is naturally excludable and can only be accessed by a voluntary transmission of the knowledge by its holders. This assertion is correct, apart from the fact that in some cases, indigenous peoples have given their consent for the use of their knowledge without fully explaining to them how it will be used or how their rights to control its use will be affected by the prevalent legal system.<sup>110</sup> In other cases, those indigenous peoples who have disclosed their knowledge (which is currently codified in academic databases or journals) were not fully aware or informed of the consequences of sharing or revealing their knowledge. Currently, indigenous peoples are aware of such consequences, as well as of the possibility of the appropriation of this disclosed knowledge. Therefore, indigenous peoples have become more skeptical and protective. As a result, they have agreed to a global moratorium on authorization or given access to their traditional knowledge. They also agreed that they will not cooperate in bioprospecting projects or share their knowledge with non-indigenous peoples as they have found that their knowledge has been appropriated and protected by third parties without their authorization, recognition of their contribution and without compensating them.<sup>111</sup> In addition to this, it is not reasonable to assume that indigenous peoples have abandoned their interest or property over that knowledge or their responsibilities to ensure that the knowledge will be

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<sup>108</sup> Drahos mentions that the distinction between codified information and un-codified information or knowledge refers to the notion of its embodiment. Information can be embodied in a product or process (artefact-embodiment) or in the skill of a person (skill-embodiment). See Drahos, 'The Regulation of Public Goods', above n 104, 53-54.

<sup>109</sup> Brahy, 'The Contribution of Databases and Customary Law to the Protection of Traditional Knowledge. No 117', above n 107.

<sup>110</sup> Sarah A. Laird, 'Contracts for Biodiversity Prospecting' in Walter V.Reid et al (eds), *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development* (1993) 99-121. See also Begona Venero Aguirre, 'The Peruvian Law on Protection of the Collective Knowledge of Indigenous Peoples Related to Biological Resources' in Christophe Bellmann, Graham Dutfield and Ricardo Meléndez-Ortiz (eds), *Trading in Knowledge. Development Perspectives on TRIPS, Trade and Sustainability* (2003) 285-88.

<sup>111</sup> Indigenous peoples' moratorium of access to their knowledge has been call through different measures. For example see: *Indigenous Peoples' Plan of Implementation on Sustainable Development* (2002) <<http://www.nciv.net/downloads/Final%20Indigenous%20Peoples%20Implementation%20Plan.doc>> 23 February 2004. See also *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples* (1993) <[http://www.tebtebba.org/tebtebba\\_files/susdev/ik/mataatua.html](http://www.tebtebba.org/tebtebba_files/susdev/ik/mataatua.html)> 23 February 2004. This decision was re-enforced in the IV International Indigenous Forum on Biodiversity hold in Sevilla, Spain, 24-26 March 2000.

used in a culturally proper manner, just because that knowledge was publicized by an ethnobiologist in an academic journal.<sup>112</sup>

**(b) *Traditional Knowledge and Public Domain***

The collective character of traditional knowledge and its ownership have encouraged the perception that there is no ownership among indigenous peoples.<sup>113</sup> A further extrapolation from this is the widespread belief that traditional knowledge is in the public domain, and therefore freely accessible.<sup>114</sup> This view has been reinforced by the lack of recognition of rights over traditional knowledge. In the absence of legal protection (regardless of customary law) one may consider that indigenous peoples simply have a *de facto* common property right over traditional knowledge or that such knowledge is in *de facto* open access situation.<sup>115</sup> This is to say, the positive intellectual property rights system denies the authority or validity of the customary system of protecting traditional knowledge. In this light, it can also be plausibly assumed that, unless legally protected, traditional knowledge, even if not publicly available, would be considered technically in the public domain and hence subject to open unregulated access.

However, from an indigenous perspective, traditional knowledge is not in the public domain, as it has been, is, and will be governed and regulated by customary law. The fact that traditional knowledge has emerged in the public domain, apparently regulated within the mainstream intellectual property regime, is due less to concern for its preservation by traditional guardians, than it is by the failure of governments and citizens to recognize and respect the customary laws in existence regulating its use.<sup>116</sup>

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<sup>112</sup> Graham Dutfield, 'Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation' (International Centre for Trade and Sustainable Development, 2002) 9. <[http://www.ictsd.org/pubs/ictsd\\_series/iprs/CS\\_dutfield.pdf](http://www.ictsd.org/pubs/ictsd_series/iprs/CS_dutfield.pdf)> at 17 May 2006.

<sup>113</sup> Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity* (2000) 50.

<sup>114</sup> Laurence R. Helfer, *Toward a Human Rights Framework for Intellectual Property* (2005) Vanderbilt University Law School. <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=891303](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=891303)> at 19 January 2006.

<sup>115</sup> Brendan Tobin, 'Certificates of Origin: A Role for IPR Regimes in Securing Prior Informed Consent' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 329, 40. Tobin argues that 'the fact that Article 8(j) fails to recognize explicitly the property right of communities over their knowledge, innovations and practices (collective property) signifies that these rights are not yet enshrined under law, and cannot therefore be claimed de jure. The obligation to seek approval does however tend to recognize the property right ...' Meanwhile, Dutfield argues that traditional knowledge is often and conveniently assumed to be in the public domain. This is likely to encourage the presumption that nobody is harmed and no rules are broken when research institutions and corporations use it freely. See Graham Dutfield, 'TRIPS-Related Aspects of Traditional Knowledge' (2001) 33(3) *Case Western Reserve Journal of International Law* 233-57.

<sup>116</sup> UNCTAD-Commonwealth Secretariat, 'Report of the UNCTAD-Commonwealth Secretariat', above n 46.

Dutfield notes that, in most cases, traditional knowledge has fallen into the public domain without prior informed consent or authorization, as well as without recognition and respect of customary laws and ownership system regarding the access, use and distribution of knowledge.<sup>117</sup> In this context a representative of the Indigenous Saami Council has pointed out that:

Indigenous peoples have rarely placed anything in the so called 'public domain', a term without meaning to us ... the public domain is a construct of the IP system and does not take into account domains established by customary indigenous laws.<sup>118</sup>

Similarly, the draft principles and guidelines submitted by indigenous peoples to the Commission on Human Rights, assert that a regime aimed to protect indigenous peoples' heritage shall:

[a]ddress particular attention to the issue of developing a system of protection for elements of indigenous peoples' cultural heritage which existing property rights systems regard as falling within the so-called 'public domain', predominantly by creating a distinct category of rights for elements of indigenous peoples' cultural heritage, possibly through *sui generis* systems that do not necessarily include elements of intellectual property rights but recognize the relevant customary laws of the indigenous peoples concerned.<sup>119</sup>

As a consequence it is unreasonable and unfair to consider that the unauthorized placement of knowledge into the public domain can (in and of itself) extinguish the legitimate entitlements of the holders of traditional knowledge.<sup>120</sup> In addition, if the recognition of indigenous peoples' rights over their knowledge is limited to traditional knowledge which is not shared within indigenous peoples or has not been disclosed, or which is not deemed to be in the public domain, the potential for recognition of indigenous peoples' rights over their knowledge will be very limited, as a great amount of traditional knowledge will have been effectively lost for the purposes of recognition of indigenous peoples' rights. Conversely, the way in which traditional knowledge falls into the public domain ought to be given special

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<sup>117</sup> Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 39, 113.

<sup>118</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Report*, 5th sess, [Para. 53], WIPO/GRTKF/IC/5/15, (2003).

<sup>119</sup> Yozo Yokota and Saami Council, above n 25, [Annex (I. n and II. h)].

<sup>120</sup> Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity: The Case of Seeds and Plant Varieties* (1999) IUCN <<http://www.iucn.org/themes/pbia/wl/docs/biodiversity/sbstta4/ipr.pdf>> 23 September 2006. See also Graham Dutfield, 'Legal and Economic Aspects of Traditional Knowledge' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (2005) 495, 502. See also Tobin, 'The Search for an Interim Solution', above n 63, 75.

consideration in the policy-making process, in order to recapture and legitimate entitlement-rights of the holders of traditional knowledge placed in the public domain without their authorization or consent.<sup>121</sup>

Numerous authors have discussed the question of whether traditional knowledge deserves to be treated as property or whether such knowledge should be considered as falling within the public domain. The debate also raises other issues, such as whether traditional knowledge which is presently in the public domain is entitled to any protection, and a focus on the legal or administrative steps that should be taken to prevent traditional knowledge falling into the public domain. One side of this debate argues that traditional knowledge should be treated as public goods in the public domain, which would result in universal access to it.<sup>122</sup> A corollary to this argument is that the creation of new rights or the extension of existing rights would diminish or impoverish the public domain. Additionally, as Dutfield argues traditional knowledge protection would represent the removal from the public domain of a great amount of knowledge useful for health, agriculture and environmental purposes.<sup>123</sup>

Conversely, there are several scholars who advocate a private property approach towards traditional knowledge. On this basis, they argue that indigenous peoples should not be punished for the states' failure to establish a property regime to protect their traditional knowledge.<sup>124</sup> Accordingly, they state that the principle of the public domain cannot be utilized to legitimize the expropriation of, or undermine, indigenous peoples' interests in traditional knowledge.<sup>125</sup> The rational response, therefore, is that special measures should be taken to counter the real and prospective impact of the lack of protection over indigenous peoples' rights. Thus, it is argued that the boundaries of the public domain need to be redefined in order to restore indigenous peoples' rights over their traditional knowledge, as well as to provide effective protection to traditional knowledge. The main concern is that associated traditional knowledge has been used for the development of processes and/or

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<sup>121</sup> Dutfield, *Intellectual Property Rights, Trade and Biodiversity: The Case of Seeds and Plant Varieties*, above n 120. See also Dutfield, *The Public and Private Domains: Intellectual Property Rights in Traditional Ecological Knowledge*, above n 90, 290.

<sup>122</sup> Jim Chen, 'Biodiversity and Biotechnology: A Misunderstood Relation. Minnesota Legal Studies Research Paper No. 05-24' (2005) 51 *Michigan State Law Review* 52-102.

<sup>123</sup> Graham Dutfield, *Protecting Traditional Knowledge: Pathways to the Future* (2006) International Centre for Trade and Sustainable Development (ICTSD)  
<<http://www.iprsonline.org/unctadictsd/docs/Graham%20final.pdf>> 18 May 2006.

<sup>124</sup> Tobin, 'Towards an International Regime for Protection of Traditional Knowledge: Reflections on the Role of Intellectual Property Rights', above n 93.

<sup>125</sup> Ibid. See also Brad Sherman and Leanne Wiseman, 'Towards an Indigenous Public Domain?' in B. Hugenholtz (ed.), *Intellectual Property and the Public Domain* (2005) 259, 272.

products which may be subject to private appropriation, through intellectual property rights. Such concern is often, explicitly or implicitly, based on considerations of equity. That is, if users of traditional knowledge receive compensation through an intellectual property regime and collect the rents from their products, justice requires that holders of traditional knowledge be similarly treated. These debates are clearly relevant to the provision of an appropriate and effective protection of traditional knowledge.

Given the nature and extent of arguments on both sides of this debate, it is important to consider what should be done in order to ensure an equitable balance of interests among the holders of traditional knowledge and its users, especially in relation to the exercise of commercial opportunities. In this light, the remainder of this section is derived from the proposition that 'information economy of the 21st century, a priceless resource is often an idea, along with the right to profit from it.'<sup>126</sup> In this regard, it is argued that in order to profit from traditional knowledge, indigenous peoples should have rights not only to authorize access to their knowledge, innovations and practices, but also the right to determine the conditions for such access.<sup>127</sup> This is to say, indigenous peoples should have the right to say 'No' to the wider application of their knowledge. Consequently, the redefinition of the boundaries of the public domain constitutes a crucial part of the process of recognition, protection and benefit-sharing arrangements for traditional knowledge.

This section then examines what has been proposed by some scholars on this issue with particular emphasis on the role of the concept of 'public domain' and 'common'. Taubman argues that the CBD requirement for 'equitable sharing of the benefits' arising from the use of traditional knowledge, which is based on the conception of equity of interests, reflects the need to find a fair and just balance between public interests and the interests of the holders of traditional knowledge.<sup>128</sup> It is suggested that defining new boundaries between public domain and community-private domain should reverse the entry of traditional knowledge into the public domain.

The words of the CBD provide a useful starting point for discussing the about indigenous peoples' rights over their traditional knowledge and its legal protection as intellectual

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<sup>126</sup> James Kanter, *Experts Forecast Trouble in World of Ideas* (2005) Brandeis University <[http://my.brandeis.edu/news/item?news\\_item\\_id=104119](http://my.brandeis.edu/news/item?news_item_id=104119)> at 20 May 2006.

<sup>127</sup> R. V. Anuradha, 'In Search of Knowledge and Resources: Who Sows? Who Reaps?' (1997) 6(3) *Review of European Community and International Environmental Law* 263-69.

<sup>128</sup> Taubman, 'Saving the Village: Conserving Jurisprudential Diversity in the International Protection of Traditional Knowledge', above n 85, 521-49.

property. As it is common sense that information in the public domain can be accessed and used without authorization, it is necessary to search for the rationale according to which the Contracting Parties of the CBD require indigenous peoples' *approval* for accessing and using their traditional knowledge. Considering the context in which the CBD has established a new standard for the use and conservation of biological diversity and its express recognition of the role of indigenous peoples in it, the word *approval* must have been intended to have a useful meaning. Accordingly, Anuradha asserts that the use of the term *approval* by Article 8(j) of the CBD 'connotes the elements of consent, permission and authorization by these communities before the wider application of their knowledge, innovations and practices.'

Likewise, Tobin suggests that by requiring indigenous peoples' prior *approval* for the access to and use of their traditional knowledge, the CBD has established a need for redefinition of the boundaries between traditional knowledge and the public domain.<sup>129</sup> Accordingly, Gollin supports the view that 'when a new practice or new ethical standards evolve, as is the case with biodiversity prospecting, the law may have to evolve too, to set new boundaries where they belong.'<sup>130</sup>

Another solution is proposed by Gupta, who argues that when knowledge exists within a spatially bound community, meaning that it is known only by a few local experts, and it is not reasonably accessible to outsiders, and has not been catalogued in publicly accessible catalogues, it should not be considered as part of the public domain. Additionally, Gupta argues that the rule of destruction of novelty due to publication should be reconsidered and modified in relation to traditional knowledge. He suggests that a five year grace period for application for formal protection of traditional knowledge after disclosure of traditional knowledge to a third party should be provided in order to ensure that indigenous peoples would not (immediately) lose their rights by sharing their knowledge with outsiders.<sup>131</sup> This approach has been adopted by the International Cooperative Biodiversity Group project in Peru. Ruiz explains that Peruvian indigenous peoples managed to negotiate contractual conditions for the use of their knowledge which was shared among different communities but

<sup>129</sup> Brendan Tobin, 'Redefining Perspective in the Search for Protection of Traditional Knowledge: A Case Study from Peru' (2001) 10(1) *Review of European Community and International Environmental Law*, 102.

<sup>130</sup> Michael Gollin, Carving Property Rights out of the Public Domain to Conserve Biodiversity, quoted by Tobin, 'Redefining Perspective in the Search for Protection of Traditional Knowledge: A Case Study from Peru', *ibid.*, 44-55. Gollin argues that the boundaries between private property and the public domain are determined by legal rules established by Constitution, statute, regulation and common law developed by courts.

<sup>131</sup> Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge*, above n 40.

had not flowed outside these communities.<sup>132</sup> It has also been adopted by Peruvian Law n. 27,811, Law Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources,<sup>133</sup> where a percentage of income from a commercialized product or process developed with traditional knowledge which has fallen into the public domain in the last twenty years should be paid to a special fund.

Ruiz argues that it could be costly, hard, and maybe even ineffective to try to protect (in positive terms) traditional knowledge which has surpassed the physical and geographical boundaries of communities.<sup>134</sup> Thus, he suggests that it might be useful to appeal to 'good corporate practices' or institutional codes of conduct which recognize the fact that traditional knowledge, in most cases, has fallen into the public domain without prior informed consent or authorization of indigenous peoples.

It has to be stressed that the principle of the public domain can be subject of derogation by specific measures, particularly by the recognition or creation of new private rights through intellectual property rights.<sup>135</sup> In fact, such an understanding has been already implemented. More specifically, a proposed *South Pacific Model Law for Protection of Traditional Knowledge and Expression of Culture* provides that the principle of the public domain should not apply to traditional knowledge which entered the public domain as the result of a breach of confidence or misappropriation, or where its use would undermine the cultural integrity of indigenous peoples.<sup>136</sup>

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<sup>132</sup> Manuel Ruiz, 'The International Debate on Traditional Knowledge as Prior Art in the Patent System: Issues and Options for Developing Countries' (Center for International Environmental Law ('CIEL'), 2002) <[http://www.ciel.org/Publications/PriorArt\\_ManuelRuiz\\_Oct02.pdf](http://www.ciel.org/Publications/PriorArt_ManuelRuiz_Oct02.pdf)> at 01 August 2006.

<sup>133</sup> Law No 27,811 Law Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources, 2002, ('Law No 27,811') <<http://www.grain.org/brl/?docid=81&lawid=2041>> at 23 July 2006.

<sup>134</sup> Ruiz, 'The International Debate on Traditional Knowledge as Prior Art in the Patent System: Issues and Options for Developing Countries', above n 132, 21.

<sup>135</sup> Carlos M. Correa, *Protection and Promotion of Traditional Medicine. Implications for Public Health in Developing Countries* (2002) IPRsonline.org <<http://www.iprsonline.org/resources/health.htm>> at 22 February 2004. Correa points out that European, Japanese and American legislators have each established intellectual property protection for information in the public domain in order to protect databases, architectural designs and publications, respectively. See also Tobin, 'The Search for an Interim Solution', above n 63, 176.

<sup>136</sup> *Model Law for National Laws, Regional Framework for the Protection of Traditional Knowledge and Expression of Culture*, ('Model Law for National Laws, Regional Framework for the Protection of Traditional Knowledge and Expression of Culture') available online at <[http://www.dfat.gov.au/ip/trips\\_update\\_0207.html](http://www.dfat.gov.au/ip/trips_update_0207.html)> at 3 March 2005.



### C *Types of Traditional Knowledge*

The WIPO suggests that the term 'traditional knowledge' refers to both tangible and intangible components. The tangible component of traditional knowledge mainly refers to genetic resources, while its intangible component mainly refers to the knowledge itself.<sup>137</sup> In addition, it has been suggested that, the highly diverse and dynamic nature of traditional knowledge means that it may not be possible to develop a particular and exclusive definition.<sup>138</sup> The WIPO's Intergovernmental Committee has, however, suggested a separation of the holistic working concept of traditional knowledge into two categories: (i) traditional knowledge related to the genetic and biological resources such as traditional medicinal know-how, traditional agricultural practices and planting materials, and (ii) traditional knowledge related to the arts such as handicrafts and expressions of folklore.

According to the Report on Intellectual Property Needs and Expectations of Traditional Knowledge of WIPO, traditional knowledge categories include agricultural knowledge, scientific knowledge, technical knowledge, ecological knowledge, medicinal knowledge, and biodiversity-related knowledge.<sup>139</sup> Traditional knowledge associated with genetic and biological resources encompasses a very broad set of information on the use of these resources for a range of very different purposes, including pharmaceutical and agricultural. The types and elements of traditional knowledge that may be subject matter of protection include information associated with:

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<sup>137</sup> WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999), above n 20.

<sup>138</sup> Ibid 25. See also WIPO/GRTKF/IC/3/9, Traditional Knowledge. Operational Terms and Definitions, above n 22.

<sup>139</sup> WIPO, 'Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge' (1998-1999), above n 20. See also Michael Perry, *The Weather. Aboriginal Style* (2003) UNSW Ecoliving Centre <[http://www.ecoliving.cat.org.au/webcast/front.php3?article\\_id=32&group=webcast](http://www.ecoliving.cat.org.au/webcast/front.php3?article_id=32&group=webcast)> at 18 February 2006. Perry notes that traditional knowledge has also been used in modern meteorological studies. For example, Australia's Bureau of Meteorology hopes to tap into the thousands of years of Aboriginal weather knowledge to help it expand its understanding of the continent's harsh climate as Aboriginal people have a different perception of the four seasons: summer, autumn, winter and spring. See also Stephen B. Brush, 'Farmers' Rights and Protection of Traditional Agricultural Knowledge. CAPRI Working Paper No 36' (International Food Policy Research Institute, 2005) 3. Brush notes that agricultural knowledge includes knowledge about soil types, pests, pathogens, and environmental conditions such as rainfall and temperature patterns, and crop genotypes, as well as irrigation techniques, soil amendments, planting patterns, pest control, weed control, and crop selection among others.

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- (i) plant breeding and cultivation methods relating to individual species, and the identity and activity of predators and diseases and the effects they have on plants;<sup>140</sup>
  - (ii) genetic manipulation of flora and fauna;
  - (iii) seed selection and preservation;<sup>141</sup>
  - (iv) animal husbandry and housing systems;<sup>142</sup>
  - (v) methods of hunting and fishing;
  - (vi) food processing and storage methods;<sup>143</sup>
  - (vii) classification systems of knowledge, such as traditional plant taxonomies;<sup>144</sup>
  - (viii) in the case of plants for pharmaceutical, botanical and herbal products, or used in industries based on developing personal care products and in biotechnology industries, traditional knowledge often refers to technical information about the correct species, its location, the proper time for harvesting, which parts of the plant to use, its precise utility and functions in treating particular diseases and the symptoms the substance will alleviate, as well as the best methods to store, prepare, and finally how to administer (the dosage) the medicine;<sup>145</sup>
  - (ix) in the case of plants for the bush food, agriculture, aquaculture and floriculture industries, traditional knowledge often refers to technical information about the soil types, pests, pathogens, environmental conditions, such as rainfall and temperature patterns, and crop genotypes, along with irrigation techniques, soil amendments, planting patterns, pest control, weed control, and crop selection to obtain special characteristics and qualities of plant genetic resources;<sup>146</sup>

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<sup>140</sup> For more detailed assessment of the range of categories and embodiments of traditional knowledge, see Dutfeld, 'Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation', above n 112. See also Alois Leidwein, 'Protection of Traditional Knowledge Associated with Biological and Genetic Resources. General Legal Issues and Measures Already Taken by the European Union and its Member States in the Field of Agriculture and Food Production' (2006) 9(3) *The Journal of World Intellectual Property* 251-56.

<sup>141</sup> Bandhopadhyay and Saha, 'Indigenous Methods of Seed Selection and Preservation on the Andaman Islands in India' (1998) 6(1) *IKDM* 3-6.

<sup>142</sup> Leidwein, above n 140, 256.

<sup>143</sup> *Ibid* 256.

<sup>144</sup> Dutfeld, 'Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation', above n 112, 9.

<sup>145</sup> Elaine Elisabetsky, 'Folklore, Tradition, or Know-How? The Ethnopharmacological Approach to Drug Discovery Depends on Our Ability to Value Non-Western Knowledge of Medicinal Plants', (1991) 15 *Cultural Survival Quarterly*, 10. See also David S. Tilford, 'Saving the Blueprints: The International Legal Regime for Plant Resources' (1998) 30 *Case Western Reserve Journal of International Law* 373-28. See also Hope Shand, *Human Nature: Agricultural Biodiversity and Farm-Based Food Security* (1997) 2.

<sup>146</sup> Brush, 'The Demise of 'Common Heritage' and Protection for Traditional Agricultural Knowledge', above n 36.

- (x) conservation and sustainable use of components of biological diversity, including information about the various physical and biological components of a particular landscape; and
- (xi) land use systems, management of soil fertility, ecological relationships and forest management.

The Coordinator of Indigenous Organizations of the Amazon Basin (COICA)<sup>147</sup> supports the view that knowledge which Amazonian indigenous peoples have been developing and maintaining can be classified into two categories: collective knowledge and ancestral wisdom.<sup>148</sup> Collective knowledge refers to all information which is useful to assist indigenous peoples to cope with actual human needs situations. Collective knowledge is associated with hunting, fishing, gathering, agriculture, the preparation of food and its conservation, physical and spiritual health, as well as with leisure activities, handicrafts, music, dance, painting and dressing, and also with raising children and human reproduction.<sup>149</sup> Collective knowledge is often possessed by all members of the community. It is transmitted from generation to generation. From an indigenous perspective, even collective knowledge, which is in its essence shared and used widely, does not fall into the public domain because such knowledge is shared exclusively among those who are trusted to know their roles and responsibilities in using the knowledge.<sup>150</sup>

Ancestral wisdom consists of highly specialized knowledge linking the real world of the forest with the spiritual world of the forest. Because of the high degree of specialization, ancestral wisdoms are transmitted exclusively to a person who is capable of making long fasts, of going to the forest to live in absolute solitude, as well as of taking and using sacred plants and reaching the vision.<sup>151</sup>

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<sup>147</sup> Coordinator of Indigenous Organizations of the Amazon Basin (COICA) is a network founded in 1989 that links nine indigenous organizations from an equal number of Amazon region nations, namely Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, Venezuela and French Guiana, an overseas department of France. For more information about COICA, see <[www.coica.org](http://www.coica.org)> at 10 April 2006.

<sup>148</sup> Christoph Antweiler, 'Local Knowledge and Local Knowing: An Anthropological Analysis of Contested, Cultural Products in the Context of Development' (1996) 93(4-6) *Anthropos* 469-94. Antweiler mentions that anthropological studies have demonstrated that differential knowledge distribution affects not only specialist knowledge, but also local everyday knowledge. As a result, it is possible to determine at some extent who within the population has access to what knowledge and how, and what knowledge he or she might gain access to. See also Coordinator of Indigenous Organizations of the Amazon Basin (COICA), *Amazon Indigenous Agenda. Returning to the Maloca* (2005) 58.

<sup>149</sup> COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 148, 58.

<sup>150</sup> Unctad-Commonwealth Secretariat, 'Report of the UNCTAD-Commonwealth Secretariat', above n 46.

<sup>151</sup> COICA, *Amazon Indigenous Agenda. Returning to the Maloca*, above n 148, 58.

### III CULTURAL DIVERSITY AND TRADITIONAL KNOWLEDGE IN RELATION TO BIOLOGICAL DIVERSITY CONSERVATION

This chapter examines the interface between cultural diversity, traditional knowledge, and biological diversity.<sup>152</sup> The inextricable connection between the traditional knowledge issues and the issues arising from access to biological and genetic resources and intellectual property rights have made it difficult to address any of these issues independently.<sup>153</sup>

There is a strong connection between linguistic diversity, biological diversity and traditional knowledge.<sup>154</sup> About half of the world's 350 million indigenous people and 80 per cent of the planet's biological diversity are found in tropical rainforests.<sup>155</sup> More than 80 per cent of countries that have great biological diversity are places with the greatest diversity of languages.<sup>156</sup> Of the over 6,000 languages in the world, between 4,000 to 5,000 are spoken by indigenous peoples. Around 42 per cent of these ethno-linguistic groups live in eco-regions of outstanding international importance, such as tropical forest and mangrove.<sup>157</sup> Hence, when approaching cultural diversity from the perspective of language distinctiveness, it is possible to conclude that most of the world's cultural diversity is constituted by indigenous peoples.<sup>158</sup>

<sup>152</sup> See Chapter 4 [V] of this thesis for more information about this topic.

<sup>153</sup> Robert J. L. Lettington and Kent Nnadozie, 'A Review of the Intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore at WIPO. Trade-Related Agenda, Development and Equity' (Occasional Papers 12, 2003) Para. 62. Lettington and Nnadozie note that while the access to traditional knowledge and access to genetic or biological resources are often discussed jointly, the two are not synonymous. Many valuable genetic resources, micro-organisms for mineral ore smelting or pollution control for instance, may not have associated traditional knowledge. See also United Nations on Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Decision III/15. Access to genetic resources*, 3rd mtg. [Sec. Preamb. Para.], (1996). The COP/CBD Decision III/15 mentions that the implementation of Article 15 (access to genetic resources) of the CBD is closely linked to other articles, such as 8(j) (access to traditional knowledge). Explanation about the linkage between access to biological and genetic resources and traditional knowledge which branches off on a broad array of issues, such as sovereign control over genetic resources and the equitable sharing of benefits can be found at Jessica Scott Jerome, *Intellectual Property Rights and Indigenous Peoples: A History of the Topic as an Object of Study* University of Chicago <<http://regionalworlds.uchicago.edu/IntellPropJerome.pdf>> at 7 July 2006.

<sup>154</sup> Luisa Maffi, 'Endangered Languages, Endangered Knowledge, Endangered Environments' (Paper presented at the Interdisciplinary Working Group, University of California, Berkeley, 1996). See also Governing Council of the United Nations Environment Programme, *Environment and Cultural Diversity. Note by the Executive Director*, [11], UNEP/GC.23/INF/23, (2004).

<sup>155</sup> Gray, A. 1999. *Voices of the Earth: Introduction* quoted by Gonzalo Oviedo, Luisa Maffi and Peter Bille Larsen, *Indigenous and Traditional Peoples of the World and Ecoregion Conservation: An Integrated Approach to Conserving the World's Biological and Cultural Diversity* (2000) 9.

<sup>156</sup> Maffi, above n 154. Maffi notes that, ten out the twelve megadiverse countries (Australia, Brazil, China, Colombia, India, Indonesia, Malaysia, Mexico, Peru and Zaire) are also included among the top 25 countries for endemic languages.

<sup>157</sup> Durning, A.T. 1992. *Guardians of the Land: Indigenous Peoples and the Health of the Earth* quoted by Oviedo, Maffi and Larsen above n 155, 16. They note that a total of 895 eco-regions have been identified, 238 are of outstanding international importance.

<sup>158</sup> Oviedo, Maffi and Larsen above n 155, 9.

During the past decade, progress has been made in understanding the relationship between cultural diversity and biological diversity.<sup>159</sup> Combee mentions that 'contemporary linguistic studies demonstrate that as languages disappear so do traditional knowledge and genetic resources.'<sup>160</sup> Magaisa argues that language is the main repository for traditional knowledge systems which have traditionally been created and transmitted by oral means. Therefore, when a language loses space and usage becomes restricted, it gradually loses its capacity to be transmitted from one generation to another.<sup>161</sup> The implication is that the erosion of cultural diversity is intricately linked to the loss of biological diversity.<sup>162</sup> Gupta argues that erosion of traditional knowledge is a threat as serious as the erosion of genetic and biological resources themselves; because the loss of knowledge about given genetic resources often means that they become perceived as weeds.<sup>163</sup> Further, it becomes more difficult to identify what genetic resources are known or their value.<sup>164</sup> Conversely, it has been noted that when traditional knowledge is supported, rewarded and encouraged, the positive results include not only the revitalization of endemic languages, but also the growth of the local biological diversity.<sup>165</sup> Consequently, it has been asserted that in most cases indigenous peoples have been directly

<sup>159</sup> Darrell A. Posey, 'International Agreements and Intellectual Property Right Protection for Indigenous Peoples' in Tom Greaves (ed.), *Intellectual Property Rights for Indigenous Peoples. A Sourcebook* (1994) 225, 237.

<sup>160</sup> Rosemary J. Coombe, 'The Recognition of Indigenous Peoples' and Community Knowledge in International Law' (2001) 14 *St Thomas Law Review* 275-79. See also IUCN and Peoples, Indigenous Peoples and Sustainability: Cases and Actions (1997) 60. According to the IUCN 'cultures are dying out faster than peoples associated with them'. It has been estimated that half the world's languages - the storehouses of peoples' intellectual heritages and the framework for their unique understandings of life - will disappear within a century.' The loss in languages has been especially high in the Americas and in Australia, and is accelerating now. UNESCO studies found that 65 indigenous languages in Colombia alone are on the verge of extinction, including the languages of two northern groups, Tamas and Dujos.

<sup>161</sup> Alex Tawanda Magaisa, *Knowledge and Power: Law, Politics and Socio-cultural Perspectives on the Protection of Traditional Medical Knowledge Systems in Zimbabwe* AHRB Copyright Research Network, Birkbeck University of London <<http://www.copyright.bbk.ac.uk/contents/publications/workshops/theme4/magaisa.pdf>> at 29 January 2006.

<sup>162</sup> Crucible Group, *Seeding Solutions: Volume 1 Policy Options for Genetic Resources (People, Plants, and Patents Revisited)* (2000) Pt One, Intro.

<sup>163</sup> Governing Council of the United Nations Environment Programme, Environment and Cultural Diversity, above n 154, 9. United Nations Environment Programme (UNEP) stresses that 'people who do not speak in their mother tongue have limited access to traditional and local knowledge and can be excluded from vital accumulated knowledge, their heritage and identity, information about subsistence, health, and sustainable use of natural resources, agriculture, religious and cultural practices.' See also Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge*, above n 40.

<sup>164</sup> Anil K. Gupta, 'Securing Traditional Knowledge and Contemporary Innovations: Can Global Trade Links Help Grassroots Innovations?' in T. Cottier and P. Mavrodís (eds), *Intellectual Property: Trade, Competition and Sustainable Development. Proceedings of the World Trade Forum* (1999) 27-28. Gupta estimates that this loss of knowledge is sometimes a greater threat than loss of the resource itself. See also Gupta, 'How Can Asian Countries Protect Traditional Knowledge, Farmers' Rights and Access to Genetic Resources through the Implementation or Review of the WTO TRIPS Agreement', above n 39.

<sup>165</sup> R. E. Evenson, D. Gollin and V. Santaniello, 'Introduction and Overview: Agricultural Values of Plant Genetic Resources' in R. E. Evenson, D. Gollin, and V. Santaniello (ed.), *Agricultural Values of Plant Genetic Resources* (1998) 1, 4.

responsible for the protection of the existing biological resources and even the enhancement of their diversity.<sup>166</sup>

Traditional knowledge follows the evolution and adaptation of genetic resources. That is to say, traditional knowledge is being created all the time; it is evolving as a response of new needs of individuals and communities posed by their social and natural environment.<sup>167</sup> Traditional knowledge builds on generations of adaptation to the environment through improvement of and additions to old knowledge. Further, traditional knowledge also consists of recent knowledge developed through new experimentation and observation. Hence, the process of natural development has been enriched and modified by indigenous and local farmers through selective breeding of plants for their food, medicinal, and other purposes over thousands of years of cultivation.<sup>168</sup>

### A *Geography of Biological Diversity - The North-South Context*

In this section, an attempt is made to demonstrate the interdependence of countries with regard to biological resources. Biological resources are not equally distributed over the Earth.<sup>169</sup> An estimated 90 per cent of all genetic resources are concentrated in the so-called centres of diversity which are mainly located in the tropical and subtropical regions of Africa, Asia, and South America.<sup>170</sup>

No state is individually self-sufficient so as to be able to provide its agriculture system with enough plant genetic diversity for breeding, conservation, and food security purposes.<sup>171</sup>

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<sup>166</sup> Ten Kate and Laird, *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing*, above n 5. See also B. Houseal, C. Macfarland, G. Archibold and A. Chiari, 'Indigenous Cultures and Protected Areas in Central America', (1985) 9 *Cultural Survival Quarterly*, 10-20. According to the authors, researchers in Central America have found: 'There are no other land use models for the tropical rain forest that preserve ecological stability or biological diversity as efficiently as those of the indigenous groups presently encountered there.'

<sup>167</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities*, <<http://www.indigenas.bioetica.org/wg8j-03-inf-10-en.pdf>> at 10 April 2006.

<sup>168</sup> Elias Carreno Peralta, 'A Call for Intellectual Property Rights to Recognize Indigenous People's Knowledge of Genetic and Cultural Resources' in Anatole F. Krattiger et al (eds), *Widening Perspectives on Biodiversity* (1994) 287-89. See also Brian Groombridge, Natural History Museum (London England) and World Conservation Monitoring Centre, *Global Biodiversity: Status of the Earth's Living Resources* (1992) 331.

<sup>169</sup> The Crucible Group, *People, Plants and Patents: The Impact of Intellectual Property in Trade, Plant Biodiversity and Rural Society* (1994) 13.

<sup>170</sup> Ibid 13.

<sup>171</sup> Kloppenburg and Kleinman, 'Seeds of Controversy: National Property Versus Common Heritage', in Jack Raloh Kloppenburg (ed), *Seed and Sovereignty: The Use and Control of Plant Genetic Resources* (1988) 182, 182.

Thus, it is now appropriate to shift the focus of this chapter to the world's interdependence in terms of plant genetic resources.

Kloppenburg has developed a framework to measure the genetic contribution of the germplasm of food crops and industrial crops, made by a particular region of diversity to other areas.<sup>172</sup> Kloppenburg identified twenty major food crops and twenty major industrial crops.<sup>173</sup> In relation to the contribution of food crops, Kloppenburg found that the Latin American and West Central Asian regions made the largest genetic contribution to the global food crop production, (65.5 per cent), followed by the Chino-Japanese (12.9 per cent), Indochinese (7.5 per cent), and Hindustanean regions (5.7 per cent). North America and Australia made no contributions to any of the 20 food crops. Kloppenburg also noted that 76.4 per cent of North American, 87.2 per cent of Euro-Siberian, and 85.4 per cent of Mediterranean food crop production come from crops for which Latin America and West Central Asia are the regions of diversity.<sup>174</sup>

The extent of genetic interdependence in industrial crops is even more significant than in food crops.<sup>175</sup> Once again, Latin America has made the main contribution with 30.4 per cent. The Indochinese, West Central Asian, Mediterranean, and African regions each account for between 8 and 19 per cent of global industrial crops. North America has a contribution of 10.5

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<sup>172</sup> The authors define germplasm as 'an individual, group of individuals or a clone representing a genotype, variety, species or culture, held in an in situ or ex situ collection. Its original meaning, now no longer in use: the genetic material that forms the physical basis of inheritance and which is transmitted from one generation to the next by means of the germ cells.' See A. Zaid, H.G. Hughes, E. Porceddu and F. Nicholas, *Glossary of Biotechnology for Food and Agriculture - A Revised and Augmented Edition of the Glossary of Biotechnology and Genetic Engineering*, FAO Research Paper 9 (2001) 10.

<sup>173</sup> This framework is concerned with the world's twenty most important food crops. In the context of this framework, food crops are those that feed people more or less directly and are frequently grown by subsistence farmers around the world, namely: wheat, maize, rice, potato, barley, cassava, sweet potato, soybean, grape, sorghum, tomato, oats, banana, orange, apple, cabbage, coconut, rye, millet and yam. Industrial crops are those that feed people only after industrial processing, are often grown on plantations or large-scale farms, or are grown and processed for non-food purposes, namely: sugarcane, sugar beet, seed cotton (meal), cottonseed (oil), sunflower, cotton (lint), rapeseed, tobacco, palm oil, coffee, coconut (copra), jute, rubber, linseed, oil palm (kernels), sesame, tea, olive oil, cocoa and flax. For more information see, Kloppenburg and Kleinman, 'Seeds of Controversy: National Property Versus Common Heritage', above n 171, 175. See also the framework developed by Ximena Flores Palacios, 'Contribution to the Estimation of Countries' Interdependence in the Area of Plant Genetic Resources. Study Paper No. 7 Rev.1' (FAO Commission on Genetic Resources for Food and Agriculture, 1998) 12.12.

<sup>174</sup> Gerald Moore and Witold Tymowski, *Explanatory Guide to the International Treaty on Plant Genetic Resources for Food and Agriculture*, IUCN Environmental Policy and Law Paper (2005) 34. The term 'region of diversity' means 'a geographical area containing a high level of genetic diversity for crop species in in situ conditions.

<sup>175</sup> Kloppenburg and Kleinman, 'Seeds of Controversy: National Property Versus Common Heritage', above n 171, 185.

per cent with sunflower. Australia and the Euro-Siberian region have made no contribution to industrial crops.

Bioprospecting in the southern hemisphere by northern nations dates from the voyages of exploration and the ensuing processes of colonization.<sup>176</sup> For example, returning to Europe from his explorative voyages to the Americas in 1493, Christopher Columbus brought maize seed. Other genetic resources such as cocoa, tobacco, sisal, rubber, spice, banana, tea, coffee, sugar, the common bean, sweet potatoes, cassava, peanuts and indigo were also transferred from the south by sailors and settlers.<sup>177</sup> One of the first cases of a medicinal plant moving from the south to the north was that of *Cinchona officinalis*, which is the source of the anti-malarial alkaloid, which markets for the equivalent value by weight of silver. A vast quantity and quality of additional genetic resources from the south have been collected by worldwide northern networks devoted to creating botanical gardens, gene banks, research institutions and breeding programmes.<sup>178</sup> For over two centuries, northern nations have freely appropriated plant genetic resources and associated traditional knowledge from southern nations. Of course, some germplasms were also transferred from the north to the south.<sup>179</sup>

Kloppenborg's analysis supports the assertion, often made in the literature that northern countries are 'gene-poor' and southern hemisphere countries are 'gene-rich'. Although the northern hemisphere countries are poor in naturally occurring plant genetic diversity, they have rich germplasm banks.<sup>180</sup> Kloppenborg affirms that, given that most biodiversity-rich countries are located in the tropics of the south and the technology-rich countries are located

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<sup>176</sup> Ten Kate and Laird define bioprospecting as a systematic search for useful genetic resources for new sources of plant and related substances, such as chemical compounds, genes, proteins, microorganisms, and other products that have potential economic value for pharmaceuticals, pesticides, botanical medicines, agrobiotechnology, horticulture, cosmetics, and personal care products. See Ten Kate and Laird, *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing*, above n 5. See also Tobin, 'Regulating Access and Benefit Sharing in the Andes: Exploring the Challenges of ABS Governance', above n 33. Accordingly to Tobin 'bioprospecting activities may include a broad mixture of characters and a wide variety of potential permutations of partners, intermediaries, and stakeholders, including local and indigenous peoples and local communities, the private sector, government, international and regional institutions, academia, bioprospecting companies and individuals, as well as a host of non-governmental organizations and independent actors.'

<sup>177</sup> Jack Ralph Kloppenborg, *First the Seed: The Political Economy of Plant Biotechnology, 1492-2000* (1988) 185.

<sup>178</sup> Ibid 161. See also Lucile H. Brockway, *Science and Colonial Expansion: The Role of the British Royal Botanic Gardens*, *Studies in Social Discontinuity*. (1979) 134.

<sup>179</sup> Kloppenborg, *First the Seed: The Political Economy of Plant Biotechnology*, above n 177, 155. The authors mentions that olives, chickpeas, onions, radishes, sugar cane, and citrus fruits, wheat, rye, oats and some vegetables were transferred from the North to the South in the colonization period.

<sup>180</sup> Jack Kloppenborg, Jr. and Michael Balick, 'Property Rights and Genetic Resources: A Framework for Analysis' in Michael Balick and Sarah Laird (eds), *Medicinal Resources of the Tropical Forest: Biodiversity and its Importance to Human Health* (1995) 166.



in the north,<sup>181</sup> the concept of 'common heritage'<sup>182</sup> and the norm of free exchange of germplasm have greatly benefited northern countries, which not only have the greatest need for collecting exotic plant materials, but also have a superior scientific capacity to use them.<sup>183</sup>

The demand for genetic resources and raw material<sup>184</sup> is probably going to increase as a result of global biotechnology trends<sup>185</sup> and the extension of patent protection over various categories of living organisms and biological processes, whether modified or naturally occurring.<sup>186</sup> In addition, it has been estimated that some 40 percent of the pharmaceutical drug patents are due to expire by 2006.<sup>187</sup> This has increased interest in developing new active ingredients from traditional medicine. For example, about 11,000 agricultural biotechnology utility patents have been registered between 1976 and 2000 by the US Patent and Trademark Office.<sup>188</sup> Further, as of 2000, around 5,000 patents already issued were for full-length genes from plants, animals, bacterial and viral sources.<sup>189</sup> Thus, it may be concluded that with growth in biotechnology research and the need to create new medicine, traditional knowledge no longer represents a relic from the past that needs to be preserved for its intrinsic and aesthetic values. Instead, it is seen as a rich source of raw material for new innovations.<sup>190</sup>

Before the CBD came into force in 1993 genetic resources and traditional knowledge were considered the common heritage of humankind. The way of thinking of that period is exemplified by the words of the biologist Garrison Wilkes from the University of

<sup>181</sup> Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology*, above n 177, 24.

<sup>182</sup> Ibid 152. Kloppenburg notes that the term 'common heritage', or the principle of free exchange, is based on the view that genetic resources, particularly the major food plants, belong to the public domain and are not owned or otherwise monopolized by anyone.

<sup>183</sup> Ibid 189.

<sup>184</sup> Verma notes that the term 'raw material' refers to plant genetic resources (Genes, traditional varieties and landraces) used by the biotechnology industry to develop new varieties. See S. K. Verma, 'Plant Genetic Resources, Biological Inventions and Intellectual Property Rights: The Case of India' in Burton Ong (ed.), *Intellectual Property and Biological Resources* (2004) 128, 131.

<sup>185</sup> Farnsworth defines 'biotechnology' as the application of biological organisms, living systems and processes to the provision of goods and services. See Norman R. Farnsworth, 'Screening Plants for New Medicines' in E.O. Wilson (ed.), *Biodiversity* (1988) ch 9. See also Sarah A. Laird and Kerry Ten Kate, 'Biodiversity Prospecting: The Commercial Use of Genetic Resources and Best Practice in Benefit-Sharing' in Sarah A. Laird (ed.), *Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice* (2002) 241, 250.

<sup>186</sup> Martin Khor, *Intellectual Property, Biodiversity and Sustainable Development. Resolving the Difficult Issues* (2002) 37.

<sup>187</sup> K. Aparna Bhagirathy, 'Using Traditional Knowledge for Commercial Innovations: Incentives, Bargaining and Community Profits. SANDEE Working Paper No. 11-05' (2005) 1.

<sup>188</sup> John L. King and David Schimmelpfennig, 'Mergers, Acquisitions, and Stocks of Agricultural Biotechnology Intellectual Property' 8(2 & 3) *Journal of Agrobiotechnology Management & Economics*.

<sup>189</sup> M. Parr and T. Preston, 'Patenting Human Gene-Based Inventions' (2000) 1(8) *USPTO Today* 23.

<sup>190</sup> Bhagirathy, above n 187, 1.

Massachusetts, when he said, 'the major food plants of the world are not owned by any one people and are quite literally a part of our human heritage from the past.'<sup>191</sup>

However, the common heritage approach for managing access to genetic resources came under increasing opposition by southern nations during the negotiation of the CBD in the late 1980s because it implied free access to their resources. Genetic resources from southern countries have been freely appropriated by northern nations and become private property through intellectual property protection, without their authorization and with no compensation and acknowledgment of their contribution.<sup>192</sup> This situation has changed since the CBD introduced the concept of states' sovereignty over the genetic resources within their territories, as well their right to regulate and charge outsiders for access to their resources. The concept of sovereign rights is linked to the concepts of the 'common concern',<sup>193</sup> and 'sustainable development', which are attempts to discipline the sustainable use and conservation of biological diversity for the benefit of present and future generations. The sovereign rights are also linked to the states' obligation to facilitate access to genetic resources for Contracting Parties ('COP') of the CBD. The CBD prescribes that such access shall be granted under the conditions of prior informed consent ('PIC'), mutually agreed terms between provider state and user party, and fair and equitable sharing of the benefits arising from the use of genetic resources.<sup>194</sup>

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<sup>191</sup> Jack Ralph Kloppenburg, 'No Hunting! Biodiversity, Indigenous Rights, and Scientific Poaching', (1991) *Cultural Survival Quarterly*, 14-18.

<sup>192</sup> Regardless of the Principle 21 of the Stockholm Declaration of the United Nations Conference on the Human Environment, which was adopted by the United Nations Conference on the Human Environment, 5 to 16 June 1972, and other soft law instruments, before the CBD came into force, genetic resources were indeed considered a common heritage of humankind, exchanged freely among countries of the world. <<http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=97&ArticleID=1503>> at 13 January 2005.

<sup>193</sup> The term 'common concern' implies a common responsibility for the issue of conservation of biological diversity, based on its importance to the international community as a whole.

<sup>194</sup> The recognition of the states' sovereignty over the genetic resources was severely criticized by pharmaceutical industrial sectors from the United States under the argument that such regimes would discourage bioprospecting over plant genetic resources, consequently creating disincentives for the development of new biotechnology products. They also felt that CBD Article 16 (para5) calls for compulsory licensing of intellectual property product. As a result of this, President Bush refused to sign the Convention. However, the Convention was signed on June 5, 1993 by President Clinton. Meanwhile, the President's Administration drew up an interpretive statement attempting to clarify the CBD text in ways to restrict the scope and ambit of CBD application. It states that genetic resources obtained from countries before or outside of the Convention should be excluded. Second, it makes certain that no part of the Convention is to be coercive of the owners of the technology or restrictive of the free market of transnational companies. Third, it emphasizes that obligations should be restricted to states and not to private sector companies. Fourth, it points out the USA's strong disagreement with any form of compulsory licensing, and finally with respect to Article 15 of the Convention, regarding the fair and equitable sharing of genetic resources, it asserts that such sharing of the results of research and benefits 'must take fully into account exclusive rights to technology that a party may possess, and that transfers of proprietary technology

#### IV SUMMARY OF FINDINGS

It was stated earlier that the consensus of scholars is that traditional knowledge consists of knowledge transmitted from one generation to another, as well as recent knowledge which may be the product of individual or collective, experimentation and observation. Similarly, it has also been shown that traditional cultures and lifestyles are intimately linked with territory, language, and spirituality. All these elements are of significant importance for the transmission of traditional knowledge, practices, and values from one generation to the next and for the long term survival of indigenous peoples.

This chapter has shown that not all traditional knowledge is old. Rather, traditional knowledge is being constantly created or innovated through new experimentation and observation. It has also been shown that not all traditional knowledge is collective in nature. The custodianship of particular knowledge may be entirely communal or even held by a particular member or members of a community, such as shamans, herbalists, elders or women. In this case, traditional knowledge is held and maintained in trust for future generations and added to for the benefit of the entire community. It has also been shown that in most cases, there is no clear separation between what belongs to all communities, what to a specific community, and what to individuals within the communities. However, the ownership of, control of, access to, and management of traditional knowledge is regulated by customary laws within the community. The lack of clear demarcation between what belongs to the general community, a specific community or communities, or individuals within these communities, makes it difficult to determine how the benefits could be shared amongst the stakeholders.

This chapter has found that whether traditional knowledge is considered to be collective or otherwise, there is special need to define the terms 'collective' and 'community'. This is because the sharing of knowledge among different indigenous peoples makes it difficult to identify clans, families, groups or peoples that are entitled to share the benefits derived from traditional knowledge or those who have authority over significant traditional knowledge

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will occur only at the discretion of the owner of the technology'. The President's Administration stated that 'the USA will address interpretative issues at the time of the [CBD] ratification'. In addition, it has been said that this interpretive statement was used by the USA to persuade other countries of the Organization for Economic Cooperation and Development (OECD) to adopt a similar position. Hence, on 25 June 1993, the European Parliament unanimously voted against attaching any interpretative declaration to the ratification of the Convention. More information can be found at Daniel Jenks, 'The Convention on Biological Diversity - An Efficient Framework for the Preservation of Life on Earth?' (1995) 15 *Northwestern Journal of International Law and Business* 636.

matters. There is difficulty in identifying who has authority or legitimacy to authorize the access to traditional knowledge. Further, there are no reliable mechanisms to assess whether a particular person, people or representative organization has or has not authority over traditional knowledge.

It has been indicated that the preservation, promotion and protection of traditional knowledge are subject to a wide range of threats.<sup>195</sup> Reference has also been made to the fact that traditional knowledge has been lost mainly because of the discontinuity of using traditional crops and landraces, as well as the lack of interest of the younger people in acquiring such knowledge. The lack of interest of the younger people in gaining and practicing traditional knowledge suggests that a certain type of incentive is needed to encourage intergenerational transfer of the information and traditional practices. The analysis suggests that special measures are needed in order to prevent the disappearance of traditional knowledge, along with help for indigenous peoples, particularly the younger generation, to develop sufficient confidence in their knowledge systems to enable them both to maintain their traditional knowledge and to cooperate with external institutions where this is of general benefit.

One conclusion in this chapter is that it is inaccurate to use the concepts of ‘commons’ and ‘open source’ or ‘open access’ to refer to traditional knowledge. However, it has been assumed that without legal protection, traditional knowledge is technically considered part of the ‘public domain’ and consequently subject to an ‘open access’. It has also been shown that a clearer understanding of the role, contours and boundaries of the public domain is vital in the development of an appropriate policy framework for the protection of traditional knowledge. On this basis, it has been also concluded in this chapter that the indigenous peoples’ rights over their knowledge should be recognized even where that traditional knowledge may be part of the public domain. The need to review the role, contours and boundaries of the public domain, in order to accommodate traditional systems for sharing traditional knowledge which are often governed by indigenous peoples’ customary laws and practices and to avoid the misappropriation and disappearance of traditional knowledge, is correspondingly emphasized.

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<sup>195</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Consolidated Analysis of the Legal Protection of Traditional Cultural Expressions*, 5th mtg, [Annex, 2], WIPO/GRTKF/IC/5/3, (2003).

This chapter has demonstrated that as human and cultural diversity are closely connected with biological diversity, the preservation and protection of traditional knowledge is vital for indigenous peoples' cultural survival, as well as for the conservation and sustainable use of biological diversity. Further, landraces or traditional varieties are of vital importance for the maintenance and improvement of new varieties. It has also been demonstrated that the loss of traditional knowledge is equal to losing the key to agricultural biodiversity, and to global food security, environmental stability, human health and to improvement of the human condition. Further, biological diversity cannot be preserved without cultural diversity. In addition, the long-term security of food and medicines depends on maintaining this intricate relationship. It is concluded that an integrated approach to the linked issues of conservation and sustainable use of biological diversity and the preservation of cultural diversity and traditional knowledge is essential. It is also argued that the importance attributed to locating the mechanism for preserving and protecting traditional knowledge should be equivalent to the significance given to the preservation and protection of biological diversity.

Finally, it has been demonstrated that genetic resources are not equally distributed throughout the world. Developing countries, mainly Asia, Africa and Latin America have made a substantial contribution to the world's pool of genetic resources. Therefore, because of their dependence on genetic resources, the trend for northern nations has been to engage in bioprospecting in southern nations. This trend continues and the demand for genetic resources, raw material and associated traditional knowledge is expected to increase as a result of global biotechnology trends. Therefore, the preservation and protection of the traditional knowledge which in turn preserves and protects these genetic resources is a significant issue from many perspectives.

## **PART TWO**

## CHAPTER 4

### WHY SHOULD TRADITIONAL KNOWLEDGE BE PROTECTED?

#### I INTRODUCTION

The aim of this chapter is to examine why traditional knowledge should be protected. The rationale for the legal protection of traditional knowledge has been comprehensively analyzed in a number of different international fora, including the *Convention on Biological Diversity* (CBD),<sup>1</sup> the World Intellectual Property Organization (WIPO),<sup>2</sup> and the Permanent Forum on Indigenous Issues.<sup>3</sup> In addition, a number of scholars of intellectual property law have presented justifications for the legal recognition of rights of indigenous peoples over their traditional knowledge.<sup>4</sup>

There are a number of reasons why Amazonian countries should provide protection for traditional knowledge. This chapter examines the five most prominent which are:

- to improve the livelihood of traditional knowledge holders and to preserve the cultural integrity of indigenous peoples;
- to promote social equity, equality and non-discrimination;
- to recognize the valuable contributions of traditional knowledge and to promote its uses and development;
- to promote the conservation and sustainable use of biological diversity; and
- to ensure compliance with international legal and moral obligations.

<sup>1</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, (entered into force 5 June 1992) (CBD). See United Nations on Environment Programme and Conference of the Parties Convention on Biological Diversity, *Decision VII/16 Article 8(j) and Related Provisions. Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices*, 7<sup>th</sup> mtg, [Art. 1], (2004).

<sup>2</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, *The Protection of Traditional Knowledge: Outline of Policy Options and Legal Elements*, See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, *Traditional Knowledge and Folklore, Protection of Traditional Knowledge: Overview of Policy Objectives and Core Principles*, WIPO/GRTKF/IC/7/5, (2004).

<sup>3</sup> See <<http://www.unhchr.ch/indigenous/documents.htm>> at 13 May 2006.

<sup>4</sup> Graham Dutfield, *Protecting Traditional Knowledge: Pathways to the Future*, (2006) International Centre for Trade and Sustainable Development (ICTSD), at <<http://www.iprsonline.org/unctadictsd/docs/Graham%20final.pdf>> 18 May 2006. See also Carlos M. Correa, 'Protecting Traditional Knowledge: Lessons from National Experiences' (Paper presented at the Workshop on Elements of National Sui Generis Systems for the Preservation, Protection and Promotion of Traditional Knowledge, Innovations and Practices and Options for an International Framework, Geneva, 2003). Anil K. Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge* (2004) WIPO <[http://www.wipo.int/tk/en/publications/769e\\_unep\\_tk.pdf](http://www.wipo.int/tk/en/publications/769e_unep_tk.pdf)> at 4 April 2006.

## II IMPROVING THE LIVELIHOOD OF TRADITIONAL KNOWLEDGE HOLDERS AND PRESERVING CULTURAL INTEGRITY

One of the main justifications for the protection of traditional knowledge is that it helps to preserve the cultural integrity of indigenous peoples.<sup>5</sup> This approach is in response to the lack of social justice available to indigenous people and the cultural consequences when traditional knowledge is misappropriated. It is argued that the lack or inadequate protection of such knowledge is not merely a legal problem; it also has a negative impact upon indigenous peoples' social structure, the integrity of their culture, and on their survival. This is because when indigenous peoples lose control over their knowledge and the resources that provide them with their livelihood, they lose access to the very substructure of their well-being and dignity.<sup>6</sup>

Traditional knowledge is an essential part of indigenous peoples' cultural and economic systems and the physical structures in which they live their lives. In this sense, traditional knowledge includes the use of traditional language, practice, values, traditions and customs. This is because indigenous peoples have a holistic approach to their knowledge and their environment; they do not separate the resources from which their livelihood stems into distinct economic and social assets.<sup>7</sup> Traditional knowledge is, therefore, closely linked to the traditions of communities - in the way in which the knowledge is created, preserved and disseminated.<sup>8</sup>

One of the main features of traditional knowledge is, therefore, that it serves as a means of cultural identification. That is why indigenous peoples argue that the misappropriation of

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<sup>5</sup> Johanna Gibson, 'Intellectual Property Systems, Traditional Knowledge and the Legal Authority of Community' (2004) 26(7) *European Intellectual Property Review* 280. See also Carlos M. Correa, *Traditional Knowledge and Intellectual Property. Issues and Options Surrounding the Protection of Traditional Knowledge* (2001) Quaker United Nations Office Geneva <<http://www.netamericas.net/Researchpapers/Documents/Ccorrea/Ccorrea2.pdf>> 1 March 2004.

<sup>6</sup> Marcia Langton, Zane Ma Rhea, Margaret Ayre and Juanita Pope, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities. Regional Report: Australia, Asia and the Middle East on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities*, [Para. 26], UNEP/CBD/WG8J/3/INF/48, (2003).

<sup>7</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Republic of South Africa: Indigenous Knowledge Systems Policy: Document Submitted by South Africa*, 9th mtg [annex page 11] WIPO/GRTKF/IC/9/11 (2006).

<sup>8</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Traditional Knowledge - Operational Terms and Definitions*, [Para 33], WIPO/GRTKF/IC/3/9, (2002). See also Four Directions Council, 'Forests, Indigenous Peoples and Biodiversity: Contribution of the Four Directions Council' (Secretariat for the Convention on Biological Diversity, 1996).



traditional knowledge should be perceived as an action that violates their economic and moral rights and an action that can threaten and undermine their cultural identities.<sup>9</sup> For this reason, indigenous peoples are more concerned with preserving the integrity of their culture and systems of knowledge than with gaining financial compensation for use of traditional knowledge.<sup>10</sup> Nevertheless, the protection of traditional knowledge would help indigenous peoples to maintain their livelihood, security and physical well-being, while providing opportunities for economic development and aid on the alleviation of poverty.<sup>11</sup> Indigenous peoples' self-determination would be enhanced and strengthened by enabling them to preserve their culture.<sup>12</sup> The effective protection of traditional knowledge will help ensure the survival of cultural identity for indigenous peoples and therefore, by implication, ensure the future of cultural diversity in general.<sup>13</sup>

The need to protect traditional knowledge as a means of preserving and promoting cultural integrity has been highlighted by the fact that traditional cultural identities and systems of knowledge of indigenous peoples have been threatened by several internal and external factors.<sup>14</sup> The main threats can be briefly summarized as follows. The first is that traditional knowledge is being lost because of the economic, social, environmental, and legal transformations which indigenous peoples undergo as they are exposed to new forms of

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<sup>9</sup> Tulalip Tribes of Washington, *Statement by the Tulalip Tribes of Washington. Folklore, Indigenous Knowledge, and the Public Domain*, 5th mtg of the WIPO's Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, (2003).

<sup>10</sup> Ibid Para 33.

<sup>11</sup> Graham Dutfield, 'Developing and Implementing National Systems for Protecting Traditional Knowledge: A Review of Experiences in Selected Developing Countries' (UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, 2000) 5.

<sup>12</sup> Darrell A. Posey and Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities* (1996) 52.

<sup>13</sup> World Intellectual Property Organization, 'Property and Traditional Knowledge (1998-1999)' (2001) 115. An Indigenous participant at the Roundtable at Wanuskewin Heritage Park, promoted by the Fact-Finding Missions of WIPO, summarized indigenous peoples' concerns about protection of traditional knowledge by saying 'For indigenous peoples, protection of their cultural and intellectual property is a matter of survival as an indigenous people, as a community.' An Indigenous participant at the Roundtable at Wanuskewin Heritage Park, promoted by the Fact-Finding Missions of WIPO, summarized indigenous peoples concerns about protection of traditional knowledge by saying 'for indigenous peoples, protection of their cultural and intellectual property is a matter of survival as an indigenous people, as a community.'

<sup>14</sup> Brendan Tobin, 'Redefining Perspective in the Search for Protection of Traditional Knowledge: A Case Study from Peru' (2001) 10(1) *Review of European Community and International Environmental Law* 44-56. Tobin mentions a recent case study from Peru which provides examples of several threats to indigenous peoples' traditional cultural identities. They include: (i) changing work practices; (ii) assimilation into dominant cultures; (iii) insecurity over territorial land rights; (iv) agricultural assistance programmes, including introduction of improved crop varieties; (v) promotion of the use of pesticides; (vi) educational systems which disparage traditional culture and promote loss of language; (vii) replacement of traditional medicinal services by State health programmes; (viii) political violence and displacement; (ix) death of knowledgeable elders without records of knowledge being left; (x) loss of indigenous languages; and (xi) the influence of organized religion and its erosion of traditional beliefs and rites regarding the relationship between mankind and the natural environment.

development.<sup>15</sup> Their traditional economy is negatively affected which, in turn, impacts on the availability of natural resources and contributes to the destabilization of family structures. The young are forced to migrate to the cities and gender patterns of labor distribution change.<sup>16</sup> In the Amazon region, illegal mining, drug trafficking, and armed conflict also significantly threaten the cultural patterns and the physical integrity of indigenous peoples.<sup>17</sup> Secondly, adequate incentives do not exist to encourage the younger generation to learn traditional knowledge and to take it forward through its conservation, production, reproduction, use and practice.<sup>18</sup> Thirdly, although indigenous peoples have had several fundamental rights recognized, their culture and traditional knowledge continue to be affected by patterns of discrimination.<sup>19</sup> Fourthly, and, perhaps the most important in the context of this thesis, is the lack of mechanisms to safeguard indigenous peoples' culture and knowledge.<sup>20</sup> This is coupled with a lack of recognition and respect for customary law and its decision-making processes in relation to access to and use of traditional knowledge.

One of the major problems facing indigenous peoples is that 'cultures are dying out faster than the peoples associated with them'.<sup>21</sup> As a result, it is predicted that half the world's languages – the storehouses of intellectual heritage and the framework for each cultural world view – will disappear within a century.<sup>22</sup> Thus, a key challenge facing the modern world is how to respond to the rapid and critical loss of indigenous peoples, and their traditional knowledge, language and lifestyles. For example, in the Amazon region, where

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<sup>15</sup> Jeffrey Mcneely and Willian Keeton, *The Interaction Between Biological and Cultural Diversity* (1995) IUCN <<http://www.iunc.org>> 11 December 2003. See also Erica-Irene Daes, *Protection of the Heritage of Indigenous People*, Human Rights Study Series (1997) 3. Daes notes that at present tourism in indigenous area is growing, along with the commercialization of indigenous arts and the spoiling of archaeological sites and shrines.

<sup>16</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) and Related Provisions, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations, and Practices of Indigenous and Local Communities. Regional Report: Latin America, Central and the Caribbean*. Note by the Executive Secretary, 4th mtg, [60], UNEP/CBD/WG8J/4/INF/5, (2005).

<sup>17</sup> Ibid 60.

<sup>18</sup> Ibid 60. It has been said that young people living in the Amazon rainforest do not want to learn from their elders as they prefer to work on different activities such as tourism and mining, or to migrate to urban areas.

<sup>19</sup> Ibid 60.

<sup>20</sup> Anil K. Gupta, *The Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge. Part One: Introductory Essay. Rewarding Conservation of Biological and Genetic Resources and Associated Traditional Knowledge and Contemporary Grassroots Creativity* (2004) WIPO <[http://www.wipo.int/tk/en/publications/769e\\_unep\\_tk.pdf](http://www.wipo.int/tk/en/publications/769e_unep_tk.pdf)> at 28 February 2004.

<sup>21</sup> Inter-Commission Task Force on Indigenous Peoples, *Indigenous Peoples and Sustainability: Cases and Actions* (1997) .

<sup>22</sup> Ibid.

the loss of indigenous culture is particularly marked, it has been estimated that one Amazonian indigenous group has disappeared for each year of this century.<sup>23</sup>

The role of culture in sustainable development and the importance of preserving different cultural identities and the unique understandings of the lifestyle enjoyed and expressed by indigenous peoples were highlighted in a speech by Federico Mayor, then Director-General of UNESCO, who declared:

[i]f the unique and particular understandings of humanity's different cultures are lost or simply reduced to a lowest common denominator, something precious and perhaps even essential for our collective survival will have been squandered. Their world view, their values and their innate respect for nature and life represent potential contributions to the profound change in attitude and behavior that can alone engender a global culture capable of acting responsively and responsibly in the face of global change. The world's cultures must be preserved in their diversity - 'for their sake and ours'.<sup>24</sup>

As Kymlicka argues, cultural communities are entitled to special protection under the law when their integrity is threatened by outside forces.<sup>25</sup> Kymlicka also argues that all individuals have a right to the resources necessary to develop their capacity in order to make effective choices about their lifestyles. Indigenous peoples ought to be able to control external use of the resources that are important to their cultural integrity and secure structure in which they can benefit and live purposeful lives.<sup>26</sup>

Preservation of cultural integrity helps to promote, maintain, and develop cultural diversity and human creativity. The United Nations Development Programme's (UNDP) 'Human Development Report 2004' highlights the need for recognition, respect, promotion and protection of cultural diversity and pluralism in order to achieve the effective flow of cultural

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<sup>23</sup> Kristina Plenderleith (ed.), *Indigenous Knowledge and Ethics. A Darrel Posey Reader* (2004) 144.

<sup>24</sup> Federico Mayor, 'Crucible for a Common Ethic: Explanation of the Role of Culture in Sustainable Development', (1996) 8.2 Our Planet, 1.

<sup>25</sup> Will Kymlicka, *Multicultural Citizenship: A Liberal Theory of Minority Rights* (2a ed, 1996) 49. Kymlicka has reconsidered the collectivist/liberal debate and has argued for group-differentiated rights in support of groups like indigenous peoples.

<sup>26</sup> Anthony J. Stenson and Tim S. Gray, *The Politics of Genetic Resources Control* (1999) 74-116. The Autonomy-based theory elaborated by Stenson and Gray should provide a foundation for the acknowledgement of indigenous peoples' rights over their traditional knowledge. The Autonomy-based theory is founded on the relationship between individual rights and cultural community membership. Its central thought is that cultural integrity is weakened when members of a community have no control over their cultural integrity owing to outsiders using their cultural creations without authorization.

goods.<sup>27</sup> The Report also argues that the underlying reasons for adopting protective policies are linked to the intrinsic way cultural goods operate as a part of the community identity.<sup>28</sup>

In addition, the rights of indigenous peoples to enjoy their culture are inextricably tied to their human rights. Failure to recognize and/or respect indigenous rights regarding their cultural integrity has consequently failed to recognize and respect their human rights.<sup>29</sup> The integrity of indigenous cultures, values, practices, systems of knowledge and institutions, including their rights over lands and resources, should be respected and protected. Protection of traditional knowledge should aim to enhance indigenous peoples' enjoyment of their individual cultures. A cultural integrity which preserves and expresses both purpose in life and provides a fulcrum in which issues of identity may be developed must also be supported.<sup>30</sup> Thus, traditional knowledge should be protected to strengthen and revitalize indigenous cultural integrity and to ensure that it can be passed on to future generations.

### **III PROMOTING SOCIAL EQUITY, EQUALITY OF TREATMENT AND NON-DISCRIMINATION**

The second justification for the protection of traditional knowledge is closely linked to the first. However, here the emphasis is on the need to provide indigenous peoples with opportunities to protect their intellectual creations and innovations equal to those afforded to individuals or corporations in mainstream society. Intellectual property regimes have been created in response to specific needs and values in non-indigenous society. Traditional knowledge evolves in a different system, guided by different values. However, indigenous peoples have the right to be recognized as distinct peoples, with their own cultural values and systems of knowledge. Therefore, when these peoples become involved - deliberately or otherwise - with the outside world, measures to accommodate these differences are necessary to respect their rights and provide equity. The principle of equity, in the sense of equality and

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<sup>27</sup> United Nations Development Programme, 'Human Development Report 2004. Cultural Liberty in Today's Diverse World' (United Nations Development Programme (UNDP), 2004) 11.

<sup>28</sup> Ibid 97.

<sup>29</sup> Mary Robinson, *Bridging the Gap Between Human Rights and Development: From Normative Principles to Operational Relevance*, Lecture at the United Nations High Commissioner for Human Rights, World Bank, Washington D.C., Preston Auditorium, (3 December 2001).

<sup>30</sup> United Nations Children's Fund, 'UNICEF Activities for Indigenous Children Around the World' (Media Backgrounder, 2004) editorial by Marta Santos Pais. A Report conducted by the United Nations Children's Fund, Ensuring the Rights of Indigenous Children asserts that cultural identity and values, and preservation of the culture and knowledge, and rights over lands and resources are of vital importance for maintaining the survival of communities, the integrity of culture, as well as for the welfare, self-confidence, and interests of indigenous children. See also Hans Morten Haugen, 'Traditional Knowledge and Human Rights' (2005) 8(5) *Journal of World Intellectual Property* 663-72.

distributive justice, should encourage positive measures to be adopted. A greater than equal allocation of treatment to indigenous peoples is required to respond to the often deeply entrenched inequities that operate between indigenous culture and mainstream society. In this way, equity works to ensure social justice, so as to enable indigenous peoples to achieve empowerment and full equality.

Traditional knowledge generates values that are rarely recognized and compensated under the existing intellectual property regimes adequately. If traditional knowledge-based processes and/or products have been successfully protected by non-indigenous people, it is reasonable to assume that indigenous peoples should also be allowed to use the same regime to protect their knowledge. Hence, it is argued that the relationship between the protection of traditional knowledge and intellectual property rights needs to be reconceived. Intellectual property rights in respect to traditional knowledge should be leavened by applying the principles of equity and non-discrimination.

There is currently an obvious inequity between the lack of intellectual property rights capable of protecting traditional knowledge and the availability of such protection for the products and processes which have been developed using such knowledge.<sup>31</sup> As will be demonstrated later in this thesis, in most cases traditional knowledge fails to fulfill the requirement of patentability. However, traditional knowledge has been used by non-indigenous persons to develop processes and/or products which are protected by patents and marketed without acknowledging the contribution made by traditional knowledge to the invention, or without sharing with them the economic benefits.<sup>32</sup> If existing legislation is applied, without considering the differing impacts on indigenous peoples, this will result in unequal and unjust treatment. Equity is, therefore, achieved by ensuring that indigenous peoples enjoy privileges equivalent to others in mainstream society. For example, access to the existing legislative scheme, while maintaining their cultural distinctiveness as it is expressed through concepts of identity, economic systems, social institutions and systems of knowledge.

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<sup>31</sup> Michael I. Jeffery, 'Intellectual Property Rights and Biodiversity Conservation: Reconciling the Incompatibilities of the TRIPS Agreement and the Convention on Biological Diversity' in Burton Ong (ed.), *Intellectual Property and Biological Resources* (2004) 185, 208.

<sup>32</sup> Graham Dutfield, *Indigenous Peoples, Bioprospecting and the TRIPs Agreement: Threats and Opportunities* (2001) ACTS <<http://www.acts.or.ke/pages/publications/dutfield.doc>> at 21 September 2005. Dutfield mentions that 'the disproportionate legal treatment of commercially useful knowledge held by companies and similarly useful knowledge held by indigenous peoples seems unjust to the latter.' See also Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity: The Case of Seeds and Plant Varieties* (1999) IUCN <<http://www.iucn.org/themes/pbia/wl/docs/biodiversity/sbstta4/ipr.pdf>> 23 September 2006.

It is argued that the political, socio-economic and cultural structures currently informing the context of intellectual property regimes override the rights and interests of indigenous peoples which results in discrimination and racism. Dutfield notes that:

To the extent that present-day IPR systems cannot protect traditional knowledge whose dissemination is beneficial to the wider community and that has commercial application, these systems are failing to operate optimally in terms of their public policy function.<sup>33</sup>

Likewise, Mugabe suggests that:

[t]his discrimination in the coverage of IPRs also frustrates benefit-sharing, since the contributions of an informal innovation carried on collectively over time by the people of a particular community, such as developing a new plant variety or plant-based cure, are not rewarded by the IPR system in the same way that an industrial plant-breeder or pharmaceutical firm is rewarded.<sup>34</sup>

Dutfield's and Mugabe's arguments embrace the ideals of equality and a belief that the international community should be responsible for creating an egalitarian system for the acquisition, maintenance and enforcement of intellectual property rights which do not *a priori* exclude any particular section of society.<sup>35</sup> Such a system should be available to protect holders of all useful knowledge whose dissemination is beneficial to the wider public.<sup>36</sup> To achieve real equality differential treatment should be granted to indigenous peoples. This differential treatment does not imply discrimination; rather it is a necessary corrective measure to ensure that indigenous peoples have equal opportunity and the right to protect their knowledge.<sup>37</sup>

<sup>33</sup> Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity* (2000) 50. See also Graham Dutfield, 'The Public and Private Domains, Intellectual Property Rights in Traditional Knowledge' (2000) 21(3) *Science Communication* 274-79.

<sup>34</sup> John Mugabe, Charles Victor Barber, Gudrun Henne, Lyle Glowka and Antonio La Vina, 'Managing Access to Genetic Resources. Strategies for Sharing Benefits' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 5, 22.

<sup>35</sup> Council for Trade-Related Aspects of Intellectual Property Rights, *Protection of Traditional Knowledge and Folklore. Summary of Issues Raised and Points Made. Note by the Secretariat*, [8], IP/C/W/370, (2002).

<sup>36</sup> Graham Dutfield, *Sharing the Benefits of Biodiversity: Access Regimes and Intellectual Property Rights* (1999) Center for International Development and Belfer Center for Science and International Affairs, Harvard University, <<http://www2.cid.harvard.edu/cidbiotech/dp/discussion6.htm>> at 21 January 2006.

<sup>37</sup> Inter-American Commission on Human Rights, *Report on the Situation of Human Rights of a Segment of the Nicaraguan Population of Miskito Origin and Resolution on the Friendly Settlement Procedure regarding the Human Rights Situation of a Segment of the Nicaraguan Population of Miskito Origin*, OEA/Ser.L/V/II.62, doc. 26 (1983), OEA/Ser.L/V/II.62, doc. 26, [76 and 81], (1984). This Report concluded that because of the vulnerable condition of indigenous peoples in relation to majority populations, certain special and additional legal protection (further than those granted to all citizens), should be granted to indigenous peoples in order to promote the effective equality among the nationals of a state, as well as to protect and preserve their cultural identities.

The United Nations Development Programme recognizes that respect for cultural diversity means that different notions of ownership, property rights and systems of knowledge should be accommodated within a global regime.<sup>38</sup> If indigenous peoples are forced to relinquish their traditional customs in order to fit into or benefit from the existing intellectual property rights regimes - if this is indeed the case - this situation constitutes a violation of their fundamental rights. Further, it may be concluded that failure to accord legal protection to traditional knowledge violates the fundamental principles of equity and non-discrimination which form the cornerstone of human rights.<sup>39</sup>

A similar view has been expressed by the United Nations Commission on Human Rights which emphasized that states should recognize that an essential component in ensuring equality before the law is the legal recognition and protection of the cultural diversity of indigenous peoples.<sup>40</sup> Similarly, Caportorti argues that 'prevention of discrimination, on the one hand, and the implementation of special measures to protect minorities, on the other, are merely two aspects of the same problem: that of fully ensuring equal rights of all persons.'<sup>41</sup>

The failure to provide protection for indigenous peoples' rights and interests to the same degree that the rights and interests of other people are protected would illegitimately discriminate against their customs and practices, violating the principle of equality under the law. It is also argued that failing to recognize indigenous peoples' rights to be treated differently due to their unique cultural values will lead to their forced assimilation into the mainstream society.<sup>42</sup> Further, the lack of protection for developing countries is also unfair, as

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<sup>38</sup> United Nations Development Programme (UNDP), 'Human Development Report 2004', above n 27, 11.

<sup>39</sup> Dutfield, Indigenous Peoples, *Bioprospecting and the TRIPs Agreement: Threats and Opportunities*, above n 32. Dutfield notes that 'while corporations can acquire huge IP portfolios, holders of valuable knowledge common in developing countries, such as indigenous communities, find that the system does not meet their needs at all.' See also Graham Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge* (2004) 104.

<sup>40</sup> Commission on Human Rights Chairperson-Rapporteur: Mr. Tomás Alarcón of the United Nations, Sub-Commission on the Promotion and Protection of Human Rights, *International Decade of the World's Indigenous People. Report on the Expert Seminar on Indigenous Peoples and the Administration of Justice*, 56th Sess of the Sub-Commission on the Promotion and Protection of Human Rights and 22th Sess of the Working Group on Indigenous Populations, [48], E/CN.4/Sub.2/AC.4/2004/6, (2004).

<sup>41</sup> F. Caportorti, 'Study on the Rights of Persons belonging to Ethnic, Religious and Linguistic Minorities' (United Nations Centre for Human Rights, 1991) Para. 585.

<sup>42</sup> Inter-American Commission on Human Rights, Report on the Situation of Human Rights of a Segment of the Nicaraguan Population of Miskito Origin, above n 37. In the Report on the Situation of Human Rights of a Segment of the Nicaraguan Population of Miskito Origin, the Commission found that special legal protection is recognized for the use of their language, the observance of their religion, and in general, all those aspects related to the preservation of their cultural identity. To this should be added the aspects linked to productive organization, which includes, among other things, the issue of the ancestral and communal lands. Non-observance of those rights and cultural values leads to a forced assimilation with results that can be disastrous.

protection of traditional knowledge could potentially enhance and provide competitive advantages for their economies.<sup>43</sup>

The Special Rapporteur of the Sub-commission of Prevention of Discrimination and Protection of Minorities found that ‘while indigenous people may guide the biochemist to a valuable molecule, only the work done by the biochemist is treated as property’.<sup>44</sup> The Rapporteur concluded that:

It is discrimination to treat the effort involved in isolating a chemical compound in the laboratory as more worthy of legal protection and compensation than the effort involved in centuries of observation and experimentation with naturally-occurring species. Furthermore, it is clear that using Indigenous Peoples’ knowledge to select plants for laboratory analysis significantly reduces the cost of discovering new products. Thus, traditional knowledge has economic value, which should not be treated as a ‘free good’.

The challenge, therefore, is to ensure that indigenous peoples receive equal opportunity and treatment under intellectual property law to protect their traditional knowledge whilst at the same time having their identity, values, customs, languages, and institutional and organizational structures effectively considered and respected.<sup>45</sup>

A prescriptive approach to the principle of equality requires that equal persons be treated equally and the unequal persons be treated unequally, in direct proportion to their inequality. The argument is that equality in law no longer means pure or absolute equality or identical treatment; rather it requires a relative equality and this often demands differential treatment.<sup>46</sup> This is to say, equality in law has both a negative aspect (non-discrimination) and a positive aspect (special measures of protection).<sup>47</sup> Accordingly, in order to be legitimate, different

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<sup>43</sup> Dutfield, *Indigenous Peoples, Bioprospecting and the TRIPs Agreement: Threats and Opportunities*, above n 32, 12.

<sup>44</sup> Erica-Irene Daes, *Special Rapporteur of the Sub-comm. of Prevention of Discrimination and Protection of Minorities and Chairperson of the Working Group on Indigenous People. Study on the Protection of the Cultural and Intellectual Property of Indigenous Peoples*, (1993).

<sup>45</sup> Dutfield, *Intellectual Property Rights, Trade and Biodiversity*, above n 33, 70. Dutfield notes that ‘when large industrial concerns in new technological fields find the IPR system cannot protect their innovations; it seems that new forms of IPRs are created in response’. However, according to Dutfield, traditional knowledge holders do not have the political influence to change the system. See also Peter Drahos, ‘Indigenous Knowledge and the Duties of Intellectual Property Owners’ (1997) 11 *Intellectual Property Journal* 179-80. According to Drahos, ‘Prior to 1984 manufacturers of computer chips in the US had complained that existing intellectual property regimes often failed to protect their products. Their chips often failed to clear the patent hurdles of novelty and inventiveness ... In 1984 the Semiconductor Chip Protection Act was passed ... In contrast, the issue of protection for indigenous knowledge has largely remained just that, an issue.’

<sup>46</sup> Warwick McKean, *Equality and Discrimination under International Law* (1983) 51.

<sup>47</sup> *Ibid.*



treatment must be reasonable, pursue a legitimate aim and have an objective justification.<sup>48</sup> States have an obligation to take effective action so as to diminish or eliminate inequality, by creating preferential treatment or distinction. The United Nations Human Rights Committee's General Comment No 18 comments on such obligation as follows:

[t]he principle of equality sometimes requires State parties to take affirmative action in order to diminish or eliminate conditions which cause or help to perpetuate discrimination prohibited by the Covenant...Such action may involve granting for a time to the part of the population concerned certain preferential treatment in specific matters as compared with the rest of the population.<sup>49</sup>

Equitable principles are widely recognized as one of the most appropriate and just means of overcoming the limitations of intellectual property law in protecting traditional knowledge.<sup>50</sup> When evaluating whether the current intellectual property regimes provide equal treatment and opportunities for indigenous peoples, these regimes should be judged in terms of the extent in which indigenous peoples are capable of utilizing them. An equitable intellectual property regime should ensure that indigenous peoples receive equal opportunity and treatment. This includes protecting traditional knowledge, while simultaneously ensuring their rights to maintain distinctive identity, notions of ownership, systems of knowledge and institutional and organizational structures are effectively considered and respected. An equitable regime should recognize and accommodate such cultural differences, instead of being used as pretexts to justify the denial of the protection of traditional knowledge.<sup>51</sup> An equitable regime should, therefore, provide for the recognition of indigenous peoples' rights in order to prevent others from using their knowledge without their prior informed consent and without sharing any economic benefit with them.

This kind of approach - one based on equity, equality and non-discrimination principles - has a strong moral and ethical foundation. An examination of existing intellectual property regimes exposes some contradictions insofar as historically, the vast majority of protective activities undertaken in regard to the commercialization of products derived from traditional knowledge have been aimed at protecting the resulting pharmaceutical, agricultural, herbal

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<sup>48</sup> Ibid.

<sup>49</sup> United Nations Human Rights Committee, *General Comment No 18 (37) (Art 26) UN Doc HR/GEN/1/Rev.2 (1996)*, [10] [12].

<sup>50</sup> Paul Kelly, 'Equity to the Rescue. A Fiduciary Duty to an Aboriginal Clan' (1999) 3 *Southern Cross University Law Review* 233-40. See also Johanna Gibson, 'Justice of Precedent, Justness of Equity: Equitable Protection and Remedies for Indigenous Intellectual Property' (2001) 6(4) *Australian Indigenous Law Reporter* 1-5.

<sup>51</sup> Scientific and Cultural Organization (Unesco) United Nations Educational, *Declaration on Race and Racial Prejudice*, General Conference, [Art. 2], (27 November 1978).

and nutraceutical companies' commodities, rather than safeguarding the rights of the holders of this knowledge. Attention should be focused on the ethics or fairness inherent in taking commercial advantage from traditional knowledge, without adequate compensation being made to the societies from which such knowledge originates, as this effectively condemns indigenous people to remain in poverty.<sup>52</sup> As a consequence, it is reasonable to assert that indigenous peoples deserve recognition and compensation for their time, creative labor, knowledge and practices in developing and maintaining their systems of knowledge, from which pharmaceutical and other commercial entities now profit.

In short, the protection of traditional knowledge should serve as a means to diminish or eliminate conditions which may promote discrimination and inequality related to the allocation of rights and the distribution of benefits over such knowledge. In addition, the notions of social justice and equality are not only core values and ideals; they also obligate states to undertake positive corrective measures to empower them. This will be discussed later in this chapter.

#### **IV      RECOGNITION OF THE VALUABLE CONTRIBUTIONS OF TRADITIONAL KNOWLEDGE AND PROMOTION OF ITS USE AND DEVELOPMENT**

The third reason why traditional knowledge should be protected is because it has the potential to contribute to the development of new agricultural, pharmaceutical and botanical products and processes. In addition, traditional knowledge is crucial for sustainable agriculture and food security.<sup>53</sup> Traditional knowledge has already been responsible for the discovery, development, and preservation of a tremendous range of medicinal plants, health-enhancing herbal formulations, agricultural and forest products which are traded internationally and generate considerable economic value.<sup>54</sup> In most cases, pharmaceutical corporations and other industries capture virtually all the 'value added' component. This situation needs to be addressed so that indigenous peoples can be compensated for the use of their knowledge.

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<sup>52</sup> B.M. Boom, 'Giving Native People a Share of the Profits', (1990) 14 *Garden*, 28.

<sup>53</sup> Food and Agriculture Organization of the United Nations (Fao), *Rome Declaration on World Food Security and World Food Summit Plan of Action*. World Food Summit. Food and Agricultural Organization of the United Nations, D/W3324E/1/11.96/5500, (1996). One definition of food security was developed at the World Food Summit in Rome in 1996. According to FAO 'food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active healthy life.'

<sup>54</sup> Dutfield, *Protecting Traditional Knowledge: Pathways to the Future*, above n 4.

The great quantity of genetic resources known exclusively by indigenous peoples has the potential to create new opportunities, thereby enhancing competitiveness across a number of industrial sectors, such as pharmaceuticals and agriculture. It can clearly be seen that traditional knowledge may make a considerable contribution to the expansion of a national economy. So, it is reasoned that if the entity which appropriates and uses traditional knowledge derives a benefit from its commercial exploitation, then the holders of such knowledge should also share in that benefit.

Protection is, therefore, essential in order to provide indigenous people with a legal framework that will prevent others from using their traditional knowledge without gaining prior informed consent and without sharing any benefits. The absence of legal protection may raise the stakes and therefore, increase the potential for opportunistic behavior from some non-indigenous companies and/or individuals.<sup>55</sup> Other companies and/or individuals, in turn, may avoid using traditional knowledge if legal uncertainty surrounds the rights of indigenous peoples over that knowledge.<sup>56</sup> Industries could, for example, develop a product or process and duly apply for intellectual property protection, at which point the indigenous peoples may submit a claim for its revocation on the grounds that the product or process consists of, or has been developed by using traditional knowledge without prior informed consent.

The protection of traditional knowledge could also encourage the conservation and continued use of traditional knowledge that is related to health and food production. The protection of traditional knowledge is, therefore, not only an issue relevant to the equitable treatment of indigenous peoples; it is also the foundation for the ongoing maintenance of traditional knowledge and associated traditional resources. Both are of considerable economic benefit to industrial research, making significant savings possible in both time and money regarding the research and development processes which ultimately benefit the society in general.

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<sup>55</sup> O. E. Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications* (1975) 127. Williamson notes opportunistic behaviour is fairly common in cases involving public goods and trade in information.

<sup>56</sup> Kerry Ten Kate and Sarah Laird, *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing* (1999) 87. Ten Kate and Laird note that in general, industries are very skeptical about accessing traditional knowledge in nations where there is no legal framework clarifying indigenous peoples' rights over their knowledge or where the existing legislation of access and benefit-sharing to genetic resources and associated traditional knowledge is too strict. See also Padmashree Gehl Sampath, *Biodiversity Prospecting Contracts for Pharmaceutical Research. Institutional and Organizational Issues in Access and Benefit-Sharing* (Doctoral thesis, University Hamburg, 2003) 131. Sampath provides an example of the problems posed by legal uncertainty. She mentions that the project of ICBG Drug Discovery with the Mayans of Mexico failed, after five years of drug discovery, because of the lack of a national legal framework to clarify the rights of indigenous peoples.

The value of traditional knowledge as an important source of income, food, and healthcare for the whole population is increasingly recognized.<sup>57</sup> The following section provides information about the valuable contributions that traditional knowledge can potentially make to the pharmaceutical, agricultural and food industries.

### A *Value of Traditional Knowledge*

Estimating the value of traditional knowledge in monetary terms is difficult, if not impossible.<sup>58</sup> Attempts have been made to estimate the contribution made by traditional knowledge to modern industry, particularly with regard to pharmaceuticals and botanicals. The annual global market value for products derived from genetic resources in health care, agriculture, horticulture, and biotechnology lies between US\$500 billion and US\$800 billion.<sup>59</sup> It has been said that in 1995 the market value of pharmaceutical derivatives from traditional knowledge was about US\$43 billion worldwide.<sup>60</sup> In the context of agriculture, the importance of genetic and biological resources is also considerable. In 1998, the value of the global agriculture market for all products derived from genetic resources was reckoned to be between US\$300 and 450 billion.<sup>61</sup> However, there is no comparable evaluation for plant genetic material acquired from indigenous peoples or for natural insecticides and insect repellents developed with traditional knowledge.<sup>62</sup> It can be concluded that by protecting traditional knowledge, potentially the performance of various national economies - by enabling greater commercial exploitation of the biological wealth and increasing exports of traditional knowledge-based products - may improve.<sup>63</sup>

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<sup>57</sup> Dutfield, *Protecting Traditional Knowledge: Pathways to the Future*, above n 4.

<sup>58</sup> Carlos M. Correa, *Protection and Promotion of Traditional Medicine. Implications for Public Health in Developing Countries* (2002) IPRonline.org <<http://www.iprsonline.org/resources/health.htm>> at 22 February 2004. See also Graham Dutfield, 'Valuing Traditional Knowledge. A Review of the Issues' (Paper presented at the Seminar, Rockefeller Foundation, 2000).

<sup>59</sup> Kerry Ten Kate and Sarah A. Laird, 'Bioprospecting Agreements and Benefit Sharing with Local Communities' in Joseph Michael Finger and Philip Schuler (eds), *Poor People's Knowledge: Promoting Intellectual Property in Developing Countries* (2004) 133, 334. Kate and Laird note that the value of the global pharmaceutical market for products derived from genetic resources lies between US\$75 billion and US\$150 billion each year, and between US\$20 billion and US\$40 billion for botanical medicines each year. See also Sophia Twarog and Promila Kapoor (eds), *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions* (2004). The authors mention that according to the Secretariat of the CBD, in 2000 the world market for herbal medicines, including products and raw materials, was US\$ 60 billion.

<sup>60</sup> Courts Canada Ipbns Factsheet, 'Indigenous People, Biodiversity and Health' (1995).

<sup>61</sup> Ten Kate and Laird, *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing*, above n 56, 70.

<sup>62</sup> Plenderleith, *Indigenous Knowledge and Ethics. A Darrel Posey Reader*, above n 23, 4.

<sup>63</sup> Dutfield, *Protecting Traditional Knowledge: Pathways to the Future*, above n 4.

## B      *The Use of Traditional Knowledge for Medicinal Purposes*

Over the centuries, plants have traditionally been used by humans as the main source of medicine. Animals are also sources of medicines: insects, frogs and toads, spiders and snakes produce venom that may be curative or toxic depending on the dose and form in which preparations are administered.<sup>64</sup> Regardless of the progress in pharmacology, particularly synthetic chemistry, the dependence on natural products, principally on plants, remains basically unaffected, as there is growing consumption of natural products.<sup>65</sup>

At least 25,000 plant species are thought to be used, or have been used, for medicinal purposes.<sup>66</sup> However, all 120 pure chemical substances extracted from plant genetic resources used in medicine today were isolated from less than 90 species of plants.<sup>67</sup> Less than 10 per cent of the 250,000 flowering plant species on the planet have been screened in laboratories to determine their chemical composition and medical potential.<sup>68</sup> This means that most plants

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<sup>64</sup> Indigenous peoples from the Amazon rainforest have used the slime from a poisonous tree frog as an ancestral remedy to treat illness, pain, even laziness. Currently, scientists are saying the promise of this traditional knowledge lies in isolating peptides from the frog's slime and then reproducing them for medicines to treat hypertension, strokes and other illnesses. For more information, see <<http://www.nytimes.com/2006/05/30/business/worldbusiness/30frogs.html?ex=1306641600&en=22f38e534414a221&ei=5088&partner=rssnyt&e=>> at 15 July 2006.

<sup>65</sup> David S. Tilford, 'Saving the Blueprints: The International Legal Regime for Plant Resources' (1998) 30 *Case Western Reserve Journal of International Law* 373-28. Tilford mention that the goals of using genetic resources in pharmaceuticals and botanical products are: (i) to isolate bioactive compounds for direct therapeutic use; (ii) to produce bioactive compounds for the development of semi-synthetic products; (iii) to serve as a model for new synthetic compounds; (iv) to use the whole plant or part of it as a herbal remedy, and (v) to use plants as taxonomic markers for the discovery of new compounds by the exploration in related species with peculiar chemical qualities. See also P. M. Hammond, 'Magnitude and Distribution of Biodiversity' in V. H. Heywood, Robert T. Watson and UNEP (eds), *Global Biodiversity Assessment* (1995) 107-28.

<sup>66</sup> Michael J. Balick and Paul Alan Cox, *Plants, People, and Culture: The Science of Ethnobotany*, Scientific American Library Series (1996) 37, 38. See also Hammond, above n 65, 28. Despite the fact that a large portion of the existing flowering plants have not yet been identified and classified by scientists, it has been confirmed that a huge quantity of them are already known and utilized, and actively managed by indigenous peoples. For example, the ethnobotanist Boom, of the New York Botanical Garden found that the Chacabo Indians from the Bolivian Amazon knew 360 species of vascular plants in the forest surrounding their communities. He then surveyed a one-hectare plot in the tropical forest and found that 82 per cent of the tree species growing there had uses known to the Chacabo. When he measured the densities of plants in the plot, he found that the Chacabo used roughly 95 per cent of the individual trees for some purpose. Similar studies were undertaken by Balee among the Ka'apor and Tembe Indians in Brazil and by Boom among the Panare Indians in Venezuela. The percentage of tree species put to use by the Ka'apor was found to be 76.8 per cent, by the Tembe 61.3 per cent, and by the Panare 48.6 per cent. Another study has shown that the Shuar people of Ecuador's Amazonian lowlands use 800 species of plants for medicine, food, animal fodder, fuel, construction, fishing and hunting supplies. Other research documented by Vickers and Plowman of the Field Museum of Natural History, shows that the Secoyas people have discovered 224 plant species for daily use as food, medicine, fibre, and shelter.

<sup>67</sup> N. R. Farnsworth and D. D. Soejarto, 'Potential Consequences of Plant Extinction in the United States on the Current and Future Availability of Prescription Drugs' (1985) 39(3) *Econ. Bot.* 39(3) 231-40. See also Josephine R. Axt, M. Lynne Corn, Margaret Lee and David M. Ackerman, *Biotechnology, Indigenous People, and Intellectual Property Rights* (1993) Congressional Research Service, Library of Congress <[http://www.ipmall.fplc.edu/hosted\\_resources/crs/93-478.pdf](http://www.ipmall.fplc.edu/hosted_resources/crs/93-478.pdf)> at 18 November 2003.

<sup>68</sup> Balick and Cox, above n 66, 93.

have not been investigated as potential sources of medicinal drugs and genetic resources might have more varied uses than investigators have yet realized.<sup>69</sup>

Consequently, the pertinent question is: 'Which genetic resources samples should be screened?'<sup>70</sup> As Schultes notes, bioprospectors are concentrating (primarily) on those species that have been used by indigenous people.<sup>71</sup> Bioprospectors believe that the selection and collection of plants on the basis of their uses by indigenous peoples should provide a short-cut to the discovery of new, useful, medical or industrial compounds. In the same way, using indigenous knowledge as a lead to pinpoint promising plants for new medicines can be a more efficient strategy for some companies,<sup>72</sup> since the indigenous peoples' pre-screening increases the efficient strategy of finding useful plants with medicinal properties by more than 400 per cent.<sup>73</sup> Another estimate suggests that by using traditional knowledge, bioprospectors can increase the success ratio in trials for useful substances from one in ten thousand samples, to one in two.<sup>74</sup> Traditional preparation of remedies also provides clues as to the type of chemical compounds in plants under investigation.<sup>75</sup>

Bioprospectors have been focusing their activities in indigenous communities because of the availability of traditional knowledge relating to:

- (i) current use, previous use, or potential use of plant and animal species, as well as soils and minerals;<sup>76</sup>

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<sup>69</sup> Ibid 183.

<sup>70</sup> Ibid 37. According to Balick and Cox, two different approaches have been used by pharmaceutical and botanical industries in the selection of plants: random and targeted approaches. In a random plant selection program, a broad net is cast and plants are collected from a given region and screened without regard to their taxonomic affinities, ethno-botanical context, or other intrinsic qualities. Such searches require an enormous investment of money and time. Further, they have consistently low success rates. A targeted selection can be conducted by different approaches. These are: (i) phylogenetic search, where the close relatives of plants known to produce useful compounds are collected; this technique is useful only when the type of compound needed is known in advance; (ii) ecological investigations, which look for plants that live in particular habitats or have certain characteristics, and (iii) ethno-botanical approach which consists in selecting and collecting plants on the basis of their uses by indigenous peoples.

<sup>71</sup> R.E. Schultes, *Where the Gods Reign: Plants and Peoples of the Colombian Amazon* (1988) .

<sup>72</sup> King et al. 1997 quoted by K. Moran, S. R. King and T. J. Carlson, 'Biodiversity Prospecting: Lessons and Prospects' (2001) 30 *Annual Review of Anthropology* 509-09.

<sup>73</sup> Balick and Cox, above n 66, 183.

<sup>74</sup> Roht-Arriaza, 'Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities' Naomi Roht-Arriaza, 'Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities' (1996) 17(Summer) *Michigan Journal of International Law* 919-63.

<sup>75</sup> Richard Evans Schultes and Robert Francis Raffauf, *The Healing Forest: Medicinal and Toxic Plants of the Northwest Amazonia*, Historical, Ethno & Economic Botany Series (1990) .

<sup>76</sup> Graham Dutfield, 'Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation' (International Centre for Trade and Sustainable Development, 2002) 9.

- (ii) preparation, processing and storage of useful species;<sup>77</sup>
- (iii) formulations involving more than one ingredient;<sup>78</sup>
- (iv) planting methods, care and selection criteria relating to individual species,<sup>79</sup> and seed selection and preservation;<sup>80</sup>
- (v) ecosystems conservation;<sup>81</sup>
- (vi) classification systems of knowledge, such as traditional plant taxonomies;<sup>82</sup> and
- (vii) identity and activity of predators and diseases and the effect they have on plants.<sup>83</sup>

In addition, traditional knowledge is widely used in the botanical medicine industry as the basis for determining safety and efficacy, to develop agronomic practices for the cultivation of materials, and to guide the development of new products.<sup>84</sup>

Bioprospecting has been particularly focused on tropical rainforests, especially in areas inhabited by indigenous communities and on coral reefs.<sup>85</sup> For instance, has been estimated that 30 per cent of the 3,000 species known to have anticancer properties are found in tropical forests.<sup>86</sup> Currently, however, as coral reefs, tropical rainforest, indigenous peoples and their traditional knowledge are diminishing rapidly; many potentially useful medicinal species may be disappearing unidentified, along with these unique ecosystems. As a consequence, is believed that bioprospecting in these areas have increased markedly.<sup>87</sup>

The efficiency and efficacy of the contribution made by traditional knowledge to the development of new medicinal drugs is greater than the number of drugs developed through ethno-botanical information, great though that number is. From a total of 122 pharmaceutical

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<sup>77</sup> Ibid 9.

<sup>78</sup> Ibid 9.

<sup>79</sup> Ibid 9.

<sup>80</sup> Bandhopadhyay and Saha, 'Indigenous Methods of Seed Selection and Preservation on the Andaman Islands in India' (1998) 6(1) IKDM 3-6.

<sup>81</sup> Dutfield, 'Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation', above n 76, 9.

<sup>82</sup> Ibid 9.

<sup>83</sup> Posey and Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities*, above n 12, 12. They mention that the Amazonian Kayapo people maintain buffer zones between gardens and forest which contain plants with nectar-producing glands on their foliage which have the effect of drawing away aggressive ants and parasitic wasps from crops.

<sup>84</sup> Ten Kate and Laird, *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing*, above n 56, 70.

<sup>85</sup> Margery L. Oldfield, *The Value of Conserving Genetic Resources* (2 ed, 1989) 132.

<sup>86</sup> National Academy of Sciences, *Ecological Aspects of Development in the Humid Tropics*, 1982, quoted by Roger A. Sedjo, 'Property Rights, Genetic Resources, and Biotechnological Change' (1992) 35(1) *Journal of Law and Economics* 199-99.

<sup>87</sup> Oldfield, above n 85, 302.

natural products examined in one study, about 80 per cent were discovered through research based on information, about the use of plants, obtained from traditional knowledge.<sup>88</sup> The following are examples of such traditional knowledge-based products:<sup>89</sup> the skeletal muscle relaxant d-tubocurarine is a derivative of an Amazonian arrow poison; the Emetine, an important amoebocide species and emetic drug comes from the roots of *Cephalis ipecacuana* which is often used to treat dysentery by the indigenous people of Brazil; the cocaine, one of the world's most important local anesthetics, is a derivative of the leaves of *Erthrosylum coca* which is frequently used by indigenous peoples in the Amazon region to hasten birth labor and relieve pain; the Pilocarpine, a drug used to treat glaucoma, is a derivative of the plant *Pilocarpus jaborandi* which is utilized by indigenous people in Brazil as medicine for several diseases and the anti-malarial drug quinine, obtained from the bark of the several species of *Cinchona* trees, was first called by the Europeans 'Indian fever bark'.

About 80 per cent of the world's population relies on traditional remedies.<sup>90</sup> Furthermore, according to Richard Sullivan, Head of Clinical Programmes, Cancer Research UK, around a quarter of cancer treating drugs come from plants and about 80 per cent of the world's population treats cancer entirely with plants.<sup>91</sup> Further, 78 per cent of antibacterial drugs and 63 per cent of anti-infective drugs also come from plants.<sup>92</sup>

An increasing number of nations such as China, India, Mexico, Nigeria, and Thailand, have integrated traditional medicine into their primary health care systems.<sup>93</sup> The demand for herbal medicine and natural products has significantly increased the global consumption of medicinal plants.<sup>94</sup> For example, one study shows that half of the leading pharmaceuticals in 1991 were either natural-product-derived or contained a compound which was natural-product-based.<sup>95</sup> Another study which analyzed the top 150 proprietary drugs from the National Prescription Audit of the United States found that 57 per cent of the top 150 brand

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<sup>88</sup> Balick and Cox, above n 66, 93.

<sup>89</sup> Steven R. King, 'The Source of Our Cures: A New Pharmaceutical Company Wants to Provide Reciprocal Benefits and Recognize the Value of Indigenous Knowledge', (1991) *Cultural Survival Quarterly*, 19.

<sup>90</sup> Erin Newman, 'Earth's Vanishing Medicine Cabinet: Rain Forest Destruction and Its Impact on the Pharmaceutical Industry' (1994) (20) *American Journal of Law and Medicine* 479-81.

<sup>91</sup> Richard Sullivan, *Medicines Don't Grow on Trees - Or Do They?* Science Museum <<http://www.sciencemuseum.org.uk/nakedscience/bioprospecting/121.asp>> at 27 January 2004.

<sup>92</sup> Gordon M. Cragg, David J. Newman and Kenneth M. Snader, 'Natural Products in Drug Discovery and Development' (1997) 60(1) *Journal of Natural Products* 52-52.

<sup>93</sup> Balick and Cox, above n 66, 159.

<sup>94</sup> Sarah A. Laird, 'Natural Products and the Commercialization of Traditional Knowledge' in Tom Greaves (ed.), *Intellectual Property Rights for Indigenous Peoples: A Sourcebook* (1995) 147, 153.

<sup>95</sup> Geoffrey A. Cordell, Mary Lou Quinn-Beattie and Norman R. Farnsworth, 'The Potential of Alkaloids in Drug Discovery' (2001) 15(3) *Phytotherapy Research* 183-83.



name products contained at least one major active compound derived from biological diversity.<sup>96</sup> Among these top 150 products, 23 per cent were based on animals; 18 per cent on plants (of which 17 per cent were unmodified natural products); and 16 per cent on microbial and marine diversity. The remaining 43 per cent were synthetic compounds believed to be inspired by traditional healers.<sup>97</sup>

### C *The Use of Traditional Knowledge for Food and Agricultural Purposes*

Traditional (agricultural) knowledge is considered to be valuable because of the holistic approach that indigenous farming systems take. This includes information about soil types, pests, pathogens, environmental conditions (such as rainfall and temperature patterns), crop genotypes, irrigation techniques, soil amendments, planting patterns, pest and weed control, and crop selection that is used to produce the unique and special characteristics and qualities found in plant genetic resources.<sup>98</sup>

Indigenous peoples' contributions to food and agricultural products can be easily demonstrated.<sup>99</sup> For example, roughly 6.5 per cent of all genetic research undertaken in agriculture is focused on germplasm derived from wild species and landraces.<sup>100</sup> In brief, the overall benefits that derive from the genetic resources provided currently by indigenous peoples and from their efforts over many generations to develop landraces and domesticate crop selections.

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<sup>96</sup> Ibid 183. This study was based on prescription numbers for the period January to September 1993.

<sup>97</sup> Cragg, Newman and Snader, above n 92, 52-60.

<sup>98</sup> Stephen B. Brush, 'The Demise of 'Common Heritage' and Protection for Traditional Agricultural Knowledge' (Paper presented at the Conference on Biodiversity, Biotechnology and the Protection of Traditional Knowledge, Washington University, 4-5 April 2003).

<sup>99</sup> Stephen Smith, 'Access to Genetic Resources and Intellectual Property Rights: What is Biopiracy?' (Paper presented at the International Expert Workshop on Access to Genetic Resources and Benefit Sharing, Record of Discussion, Cuernavaca, 24-27 October 2004). Smith notes that 'no country has developed a successful agricultural system without resource to non-indigenous plant genetic resources.' To find some examples of the contributions to food and agricultural products made by Amazonian indigenous peoples, see Chapter 2 [III].

<sup>100</sup> According to the Food and Agriculture Organization (FAO) the terms 'landraces' or 'traditional varieties' refer to 'an early, cultivated form of a crop species, evolved from a wild population, and generally composed of a heterogeneous mixture of genotypes.' See Jeffrey A. Mcneely, 'Biodiversity and Agricultural Development: The Crucial Institutional Issues' in David R. Lee and Christopher B. Barrett (eds), *Tradeoffs or Synergies? Agricultural Intensification, Economic Development and the Environment* (2001) 399, 404. See also Jack Ralph Kloppenburg, 'No Hunting! Biodiversity, Indigenous Rights, and Scientific Poaching', (1991) *Cultural Survival Quarterly*, 14-18.

It is common knowledge that the narrow genetic base of most major crops plants is an agricultural risk because natural causes of disease and pest epidemics may increase.<sup>101</sup> For example, in 1970-1 the United States experienced a maize blight epidemic which laid waste approximately 15 per cent of the nation's crop.<sup>102</sup> This occurred because of genetic uniformity, as about 80 per cent of the hybrid maize in the United States was derived from a single, sterile male line that contained T cytoplasm which made plants vulnerable to the maize blight fungus.<sup>103</sup>

Owing to genetic erosion (the loss of genetic diversity within species), dependence on genetic diversity and the maintenance of traditional crop farming systems remain important issues. Apart from being a reservoir of potential future crops, wild plants and landraces are exceptionally important in sustainable agriculture and global food security, as a gene acquired from wild plants or landraces can be used - with the help for example of genetic manipulation - to create a cultivar resistant to pests, diseases, or drought.<sup>104</sup> The genes in domesticated plants and their wild uncultivated relatives are the raw materials with which breeders can increase yields and improve the quality of crops and livestock.<sup>105</sup> Furthermore, germplasm from landraces has proved to be an important source of inputs regarding resistance genes that will control pests and diseases,<sup>106</sup> as well as fertilizers, pesticides, insect repellents, insecticides and a variety of other products.<sup>107</sup> In fact, wild relatives of crop plants have been used to maintain the vitality of many important domesticated crops.<sup>108</sup> The following are a few examples:<sup>109</sup>

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<sup>101</sup> Charles Perrings, 'The Economics of Biodiversity Loss and Agricultural Development in Low-income Countries' in David R. Lee and Christopher B. Barrett (eds), *Tradeoffs or Synergies? Agricultural Intensification, Economic Development, and the Environment* (2001) 64.

<sup>102</sup> Vandana Shiva, *Biopiracy. The Plunder of Nature and Knowledge* (1998) 91. For examples see, Food and Agriculture Organization of the United Nations (Fao), 'The State of the World's Plant Genetic Resources for Food and Agriculture' (FAO, 1997) 83.

<sup>103</sup> Ibid.

<sup>104</sup> Stephen B. Brush, 'Providing Farmers' Rights Through In Situ Conservation of Crop Genetic Resources' (FAO Commission on Plant Genetic Resources, 1994) 3. See also Donald L. Plucknett, *Gene Banks and the World's Food* (1987) 171-96.

<sup>105</sup> Kathryn Rackleff, 'Preservation of Biological Diversity: Toward a Global Convention' (1992) 3 *Colorado Journal of International Environmental Law and Policy* 405-11. See also World Wildlife Fund, *The Importance of Biological Diversity* (1989) 19.

<sup>106</sup> J. J. Burdon and A. M. Jarosz, 'Wild Relatives as Sources of Disease Resistance' in A. H. D. Brown et al (eds), *The Use of Plant Genetic Resources* (1989) 280, 280.

<sup>107</sup> For more information about the use of plant genetic resources to produce non-food materials, see Anne S. Moffat, 'Plants as Chemical Factories' (1995) 268 *Science* 659-59.

<sup>108</sup> Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies, and Institutions* (2003) 11.

<sup>109</sup> For more examples about the valuable agronomic traits from landraces and their wild relatives, see FAO's Report on 'The State of the World's Plant Genetic Resources for Food and Agriculture', above n 102, 28 and 29.

- (i) access to exotic germplasm has annually added a value of US\$3,200 million to the value of the United States US\$11,000 million soybean production, and approximately US\$7,000 million to its US\$18,000 million maize crop;<sup>110</sup>
- (ii) the genes that protect the United States' barley crop from yellow dwarf disease were obtained from an Ethiopian landrace;<sup>111</sup>
- (iii) the University of Wisconsin has developed a new type of bean capable of supplying up to 60 per cent of its own nitrogen needs by breeding bean varieties collected from the fields of Latin American peasant farmers;<sup>112</sup>
- (iv) an exotic maize germplasm from Brazil, the Caribbean and Mexico was used by United States researchers to develop a new commercial maize variety with genetic resistance to armyworms, a pest that causes up to US\$ 30 million leaf damage per annum in the south-eastern United States;<sup>113</sup> and
- (v) a gene from a single wild tomato species from Peru contributed \$8 million per annum to United States tomato processors.<sup>114</sup>

In short, landraces have been a major source of information for large gains in agricultural productivity - benefiting both producers and consumers. Such gains, however, are not generally shared with the providers of the genetic resources and/or associated traditional knowledge. While maintenance of a diverse set of landraces may prove valuable to current or future plant breeding, indigenous peoples do not directly capture these benefits; as such they have little incentive to take account of them when preserving such varieties.<sup>115</sup>

Agricultural genetic diversity is critical for food security throughout the world. The Food and Agriculture Organization (FAO) estimates that world food production will have to increase more than 75 per cent in the next 30 years to keep pace with population growth.<sup>116</sup> In order to do so, food production must be intensified, productivity increased and productive natural systems must be optimally managed in a sustainable manner. It has been predicted that the

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<sup>110</sup> Hope Shand, *Human Nature: Agricultural Biodiversity and Farm-Based Food Security* (1997) 23.

<sup>111</sup> Kelly Day-Rubenstein and Paul Heisey, 'Plant Genetic Resources: New Rules for International Exchange', (2003) 1 *Amber Waves*, 22-24.

<sup>112</sup> Kloppenburg, above n 100.

<sup>113</sup> Shand, above n 110, 23.

<sup>114</sup> *Ibid* 23.

<sup>115</sup> Kelly Day-Rubenstein, Paul Heisey, Robbin Shoemaker, John Sullivan and George Frisvold, *Crop Genetic Resources: An Economic Appraisal* (2005) United States Dept. of Agriculture <<http://www.ers.usda.gov/Publications/eib2/>> at 30 June 2005.

<sup>116</sup> Jacques Diouf PR 96/3 - Announces World Food Summit (1996) FAO <[http://www.fao.org/WAICENT/OIS/PRESS\\_NE/PRESSENG/H4F.HTM](http://www.fao.org/WAICENT/OIS/PRESS_NE/PRESSENG/H4F.HTM)> at 5 September 2006.

combined application of biotechnologies, including innovative approaches to plant and animal breeding and to farming and indigenous practices, sometimes using wild relatives and landraces, will be required in order to improve yields.<sup>117</sup>

Traditional knowledge also contributes to the development of biologically based agrochemicals, novel foods or food ingredients, including colors, antioxidants, antimicrobials, phytoestrogens,<sup>118</sup> new lubricants, and other industrial products by providing genetic material from landraces and knowledge associated with plant predators, diseases and the effects that they have on plants. Accordingly to Hellerstein the pesticide/fungicide neem is one example of a natural compound being used as an agricultural chemical.<sup>119</sup> Another example mentioned by Hellerstein is the use of the jojoba plant as a traditional knowledge-based product that has become economically important to cosmetic manufacturers.<sup>120</sup>

This section has shown contributions made by indigenous peoples to the development of new medicinal drugs are not limited to identifying or locating a particular plant. They also provide knowledge about the proper time for harvesting which parts of the plant to use, its precise utility and functions in treating particular diseases, and the symptoms the substance will alleviate, as well as the best methods to store, prepare, and administer the medicine.<sup>121</sup> It has also shown that the contributions made by traditional knowledge are essential to the development of new medicinal products. Such contributions bring value to pharmaceutical and botanicals companies by providing them with opportunities to reduce their research costs and shorten the research cycle.<sup>122</sup> It has also shown that traditional (agricultural) knowledge is important not just in terms of the particular breeding methods, but also in terms of the maintenance of the ecological processes and biological diversity linked to traditional

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<sup>117</sup> J. Esquinas-Alcazar, 'International Treaty on Plant Genetic Resources for Food and Agriculture' (2004) (139) *PGR Newsletter*, FAO-IPGRI 1-1. See also Kloppenburg, above n 100.

<sup>118</sup> John Hunter and Chris Jones, 'Bioprospecting and Indigenous Knowledge in Australia: Valuing Indigenous Spiritual Knowledge and its Implications for Integrated Legal Regimes' (Paper presented at the Conference on Biodiversity and Biotechnology and the Protection of Traditional Knowledge, Washington University in St Louis, Missouri, April 4-6 2003).

<sup>119</sup> Daniel Hellerstein, *Agricultural Resources and Environmental Indicators* United States Dept. of Agriculture <[http://www.ers.usda.gov/publications/arei/ah722/arei3\\_1/arei3\\_1wildlifeintro.pdf](http://www.ers.usda.gov/publications/arei/ah722/arei3_1/arei3_1wildlifeintro.pdf)> at 3 July 2005.

<sup>120</sup> Ibid.

<sup>121</sup> Elaine Elisabetsky, 'Folklore, Tradition, or Know-How? The Ethnopharmacological Approach to Drug Discovery Depends on Our Ability to Value Non-Western Knowledge of Medicinal Plants', (1991) 15 *Cultural Survival Quarterly*, 10.

<sup>122</sup> Michael W. Toffel, *Intellectual Property Rights and Traditional Resources: The Indigenous Challenge* (2002) University of California <[http://faculty.hass.berkeley.edu/toffel/papers/indigenous\\_manuscript.pdf](http://faculty.hass.berkeley.edu/toffel/papers/indigenous_manuscript.pdf)> 03 June 2004.

economic activities, such as cultivation or animal husbandry.<sup>123</sup> In short, this section has shown that the protection of traditional knowledge should encourage indigenous peoples to reveal their knowledge (where they wish to do so), thereby reducing the cost of acquiring it. It should also provide incentives for indigenous to be innovative with their traditional knowledge with the aim of preserving and increasing the entire knowledge pool, which is passed on from one generation to another.<sup>124</sup>

## V PROMOTING THE CONSERVATION AND SUSTAINABLE USE OF BIOLOGICAL DIVERSITY

The fourth reason why traditional knowledge should be protected is because it has the potential to play an important role in biological diversity conservation, it can help in combating desertification, and it is important in providing food security. The conservation of biological diversity is critical to meet food, health and other needs of a rapidly growing world population.<sup>125</sup>

While the conservation and sustainability of biological diversity is a common concern for all humankind,<sup>126</sup> traditional knowledge held by Amazonian indigenous peoples plays a vital role in assisting in the conservation and sustainability of biological diversity from within the Amazon rainforest. This is not only because of the vast size of the Amazon rainforest, but also because the Amazon rainforest is one of the last territorial frontiers that defies modern technology and remains a challenge to western society.<sup>127</sup> In this context, Amazonian indigenous peoples have been recognized as the only societies with the expertise necessary to understand the various ecological interrelation of the Amazonian ecosystem.<sup>128</sup> In other words, Amazonian indigenous peoples' knowledge about tropical ecology, ecological zones, complex plant-animal-human relationships, as well as their knowledge about the numerous plants and animals - which each have the potential for exploitation - is vital for the Amazon rainforest's conservation and sustainable use of biological diversity.<sup>129</sup> It is logical to assume

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<sup>123</sup> Gonzalo Oviedo, Luisa Maffi and Peter Bille Larsen, *Indigenous and Traditional Peoples of the World and Ecoregion Conservation: An Integrated Approach to Conserving the World's Biological and Cultural Diversity* (2000) 9.

<sup>124</sup> Padmashree Gehl Sampath, 'Intellectual Property Rights on Traditional Medicinal Knowledge: A Process-Oriented Perspective' (2004) 7(7) *Journal of World Intellectual Property* 711-33.

<sup>125</sup> CBD, above n 1, Preamb. Para 20.

<sup>126</sup> CBD, above n 1, Preamb. Para 3.

<sup>127</sup> Darrel A. Posey, *Kayapó Ethnoecology and Culture*, Studies in Environmental Anthropology (2002) 33.

<sup>128</sup> R. J. Goodland and H. S. Irwin, *Amazon Jungle: Green Hell to Red Desert?* (1975) 65.

<sup>129</sup> Posey, *Kayapó Ethnoecology and Culture*, above n 127, 14.

that the loss or degradation of the systems of knowledge held by Amazonian indigenous peoples would be a disaster for the conservation of the Amazon rainforest.

The symbiotic relationship between biological diversity and traditional knowledge, and the contribution of traditional knowledge to the preservation and sustainability of biological diversity have already been described in this thesis.<sup>130</sup> This relationship is of major significance in the protection of traditional knowledge. At this point in the chapter, a brief restatement of this relationship is helpful.

It is recognized that biological diversity is created through the interaction between human communities and local ecosystems. Such interaction works through an interrelated, dynamic and continually evolving process where plants and animals are carefully selected and improved by indigenous peoples and local communities.<sup>131</sup> A significant part of the world's biological diversity – both domesticated and wild – extending from the level of genes, species and ecosystems to entire landscapes, is created and maintained through cultural practices.<sup>132</sup> In addition, accordingly to the RAFI, approximately, 90 percent of the earth's most biologically-diverse lands have no government protection, and are cared for exclusively by indigenous communities, farming communities and other traditional resource users.<sup>133</sup> Further, RAFI mentions that, the wild relatives of almost every cultivated crop are found in biologically-diverse regions of the Southern hemisphere and are nurtured by indigenous communities.<sup>134</sup> Accordingly, indigenous peoples and local communities in Africa, Asia and Latin America are the primary custodians of most of the earth's biological diversity, mainly agricultural genetic resources.<sup>135</sup>

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<sup>130</sup> See Chapter 3 of this thesis.

<sup>131</sup> Shand, above n 110.

<sup>132</sup> Governing Council of the United Nations Environment Programme, *Environment and Cultural Diversity. Note by the Executive Director*, See also Elias Carreno Peralta, 'A Call for Intellectual Property Rights to Recognize Indigenous People's Knowledge of Genetic and Cultural Resources' in Anatole F. Krattiger et al. (eds), *Widening Perspectives on Biodiversity* (1994) 287-89.

<sup>133</sup> Rural Advancement Foundation International (Rafi), *Enclosures of the Mind: Intellectual Monopolies. A Resource Kit on Community Knowledge, Biodiversity and Intellectual Property* Rural Advancement Foundation International (RAFI) and International Development Research Centre (IDRC) <[idrinfo.idrc.ca/archive/corpdocs/118990/other\\_enclosures.pdf](http://idrinfo.idrc.ca/archive/corpdocs/118990/other_enclosures.pdf)> at 23 September 2006.

<sup>134</sup> Ibid.

<sup>135</sup> Shand, above n 110, 4.

Coombe notes that neither biological diversity nor traditional knowledge is a static collection of species,<sup>136</sup> resources, data, or information.<sup>137</sup> Overall, genetic resources (in their natural habitat) continue to evolve, adapt and transform in new ways and manifest genetic characteristics which will never be demonstrated in those stored in *ex situ* collections. Gupta notes that in dynamic processes of innovation and adaptation of traditional knowledge systems, new materials are incorporated, new processes are developed, and new uses or purposes evolve.<sup>138</sup> Further, Coombe highlight that genetic resources stored in gene-banks only provide partial snapshots of the genetic diversity available at the particular moment in time when they were collected.<sup>139</sup> A further complicating factor is that seeds and other reproductive plant materials in storage must be regrown or regenerated periodically. FAO has found that even the most technologically sophisticated gene banks cannot always provide adequate security for stored germplasm. Thus, many seeds are stored under inadequate conditions, and a high number of stored resources are in need of regeneration. As a result, it can be safely assumed that some gene banks could be storing more dead than live seed.<sup>140</sup> Thus, it is believed that genetic resources should be preserved in their natural setting or *in situ* conditions rather than off-site or in *ex situ* conditions – where plant parts, tissues or cells are maintained in cold storage, i.e., gene banks.<sup>141</sup> In addition, *in situ* conservation of genetic resources has the advantage of preserving the context of practice in which traditional knowledge is practiced.<sup>142</sup> It can, therefore, be asserted that the conservation of biological diversity is intricately linked to the recognition, reward and protection of the traditional knowledge systems as a living and evolving body of knowledge, while the protection of

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<sup>136</sup> The authors define the term 'species' means 'the basic unit of classification and the most practical and commonly used currency when referring to biodiversity'. See V. H. Heywood, Robert T. Watson and United Nations Environment Programme, *Global Biodiversity Assessment* (1995) 86.

<sup>137</sup> Rosemary J. Coombe, 'The Recognition of Indigenous Peoples' and Community Knowledge in International Law' (2001) 14 *St Thomas Law Review* 275-79.

<sup>138</sup> Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge*, above n 4.

<sup>139</sup> Coombe, above n 137.

<sup>140</sup> For more information about the state of *ex situ* conservation, see Food and Agriculture Organization of the United Nations (FAO), 'The State of the World's Plant Genetic Resources for Food and Agriculture'. See also Shand, above n 110, 37.

<sup>141</sup> Brush, 'The Demise of 'Common Heritage' and Protection for Traditional Agricultural Knowledge', above n 98. Brush mentions that there are two basic methods for conserving genetic diversity which are: *in-situ* and *ex-situ* conservation strategies. *In-situ* conservation means 'the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties'. In contrast, '*ex-situ*' conservation means 'the conservation of components of biological diversity outside their natural habitats'. The CBD recognizes that *in-situ* conservation is preferable to *ex-situ* strategies.

<sup>142</sup> Stephen B. Brush, 'Indigenous Knowledge of Biological Resources and Intellectual Property Rights: The Role of Anthropology' (1993) 95(3) *American Anthropologist* 653-64.

traditional knowledge is intricately connected with the preservation of indigenous peoples' cultural and economic integrity.<sup>143</sup>

As previously mentioned, indigenous peoples have existed in equilibrium with their natural environment for thousands of years and are disappearing along with the ecosystems that have sustained them.<sup>144</sup> With this loss, traditional knowledge about the place or location of genetic resources in nature and information about their potential uses are also being eroded and lost. In most cases, crop diversity is also being steadily compromised because of the disappearance of associated knowledge. Posey emphasizes that 'with the extinction of each indigenous group, the world loses millennia of accumulated knowledge about the tropical ecosystems. This priceless information is forfeited with hardly a blink of the eye: the march of development cannot wait long enough to even find out what it is about to destroy.'<sup>145</sup> Similarly, the Rural Advancement Foundation International notes that 'to destroy or ignore this system (traditional knowledge) would be a dangerous mistake. It would deprive the world of one of its main sources of innovation and diversity'.<sup>146</sup>

The fact that indigenous peoples' systems of knowledge and (in some cases) indigenous peoples themselves are in jeopardy has been used by non-indigenous as a reason for obtaining their traditional knowledge even more rapidly - even without the proper authorization of traditional knowledge holders.<sup>147</sup> Given this, it is not surprising that one of the most urgent contemporary issues is the preservation, promotion, and protection of existing cultural diversity and traditional knowledge held by indigenous peoples and local communities, particularly in association with the conservation and sustainable use of the biological diversity. The Global Biodiversity Strategy declares that:

Human cultural diversity could also be considered part of biodiversity. Like genetic or species diversity, some attributes of human cultures (say, nomadism or shifting cultivation) represent

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<sup>143</sup> Unctad Commonwealth Secretariat, 'Report of the UNCTAD-Commonwealth Secretariat' (Paper presented at the Workshop on Elements of National Sui Generis Systems for the Preservation, Protection and Promotion of Traditional Knowledge, Innovations and Practices and Options for an International Framework, Geneva, 4-6 February 2004). See also Shand, above n 110, 3.

<sup>144</sup> Mayor, above n 24.

<sup>145</sup> Darrell A. Posey, 'Indigenous Knowledge and Development: An Ideological Bridge to the Future' in K. Plenderleith (ed.), *Kayapó Ethnoecology and Culture* (2002) 59.

<sup>146</sup> Rural Advancement Foundation International (Rafi), 'Conserving Indigenous Knowledge: Integrating Two Systems of Innovation' (United Nations Development Programme (UNDP), 1994) Introduction.

<sup>147</sup> Erica-Irene Daes, *Protection of the Heritage of Indigenous People*, *Human Rights Study Series* (1997) 33.



‘solutions’ to the problems of survival in particular environments. And like other aspects of biodiversity, cultural diversity helps people adapt to changing conditions.<sup>148</sup>

In some ways, the conservation of biological diversity depends on the survival of indigenous peoples and other local communities and their traditional practices. Further, in economic terms, the possibility of discovering something useful and valuable declines contemporaneously with the disappearance of traditional knowledge.<sup>149</sup> Gupta describes the importance of this connection between biodiversity and traditional knowledge when he states, ‘conserving biodiversity without conserving associated knowledge systems is thus like building and maintaining a library without a catalog.’<sup>150</sup>

A workshop on ‘Drug Development, Biological Diversity and Economic Growth’, convened in 1991 by the National Cancer Institute of the US National Institutes of Health, concluded that ‘traditional knowledge is as threatened and is as valuable as biological diversity. Both resources deserve respect and must be conserved.’ At present, there is growing international awareness that the degree of human impact on the environment is threatening human existence and the survival of many species. Further, international debates about access to biological and genetic resources include a broad array of issues such as sovereign control over genetic resources; the equitable sharing of benefits; respect for, protection and wide application of traditional knowledge and access to and transfer of technology and capacity building. Therefore, in general, development of legislation regulating the access to biological and genetic resources is inextricably linked to the development of appropriate laws to recognize and protect the rights of indigenous peoples over their traditional knowledge.<sup>151</sup> As a result an increased number of calls are being made for the more sustainable use of biological diversity.<sup>152</sup> Similarly, there are calls to recognize the role played by indigenous peoples in the conservation and sustainable use of biological diversity.<sup>153</sup> In short, the link between the conservation and sustainable use of biological diversity, the preservation and protection of cultural diversity and traditional knowledge is imperative, as is the importance of finding the

<sup>148</sup> World Resource Institute, World Conservation Union and United Nations Environment Programme, *Global Biodiversity Strategy* (1992) 3.

<sup>149</sup> Anil K. Gupta, ‘Securing Traditional Knowledge and Contemporary Innovations: Can Global Trade Links Help Grassroots Innovations?’ in T. Cottier and P. Mavrodis (eds), *Intellectual Property: Trade, Competition and Sustainable Development. Proceedings of the World Trade Forum* (1999) 27-28.

<sup>150</sup> *Ibid.*

<sup>151</sup> Brendan Tobin, ‘Regulating Access and Benefit Sharing in the Andes: Exploring the Challenges of ABS Governance’ (Paper presented at the Mountain Forum: A Global Network for Mountain Communities, Environment and Sustainable Development, 2006).

<sup>152</sup> CBD, above n 1, Preambular Para. 20.

<sup>153</sup> CBD, above n 1, Preambular Para. 12.

appropriate mechanism to preserve and protect both traditional knowledge and existing biological diversity. The need to protect traditional knowledge as a means of promoting the conservation and sustainable use of biological diversity has been highlighted by *Convention on Biological Diversity* (CBD), the Agenda 21 Global Programme of Action on Sustainable Development (Agenda 21),<sup>154</sup> the Rio Declaration on Environment and Development,<sup>155</sup> the Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Forests,<sup>156</sup> and the United Nations *Convention to Combat Desertification* (UNCCD).<sup>157</sup> These international frameworks will be examined further in the next section.

## VI ENSURE COMPLIANCE WITH INTERNATIONAL LEGAL OBLIGATIONS

Another reason why Amazonian countries should protect traditional knowledge is that they have legal and moral obligations to do so under international treaties they have ratified. Amazonian countries, therefore, have to honor their commitments and to implement legal frameworks to protect traditional knowledge.

Protection of traditional knowledge is receiving substantial attention in numerous international conventions and treaties. It is an important issue in agreement concerning food and agriculture, the environment, health, human rights and cultural policy, trade, and economic development.<sup>158</sup> The following part will highlight the key international agreement that impact on Amazon countries.

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<sup>154</sup> *UNCED Global Programme of Action on Sustainable Development*, adopted June 1992 (Agenda 21) at <<http://www.un.org/esa/sustdev/documents/agenda21/index.htm>> at 23 January 2004.

<sup>155</sup> *Rio Declaration on Environment and Development*, opened for signature June 1992, (entered into force June 1992) at <<http://www.un.org/esa/sustdev/documents/agenda21/index.htm>>. See Vienna Declaration and Programme of Action, opened for signature, 25 June 1993 (entered into force 5 June 1993) <[http://www.unhchr.ch/huridocda/huridoca.nsf/\(Symbol\)/A.CONF.157.23.En?OpenDocument](http://www.unhchr.ch/huridocda/huridoca.nsf/(Symbol)/A.CONF.157.23.En?OpenDocument)> at 13 September 2006.

<sup>156</sup> *UNCED Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Forests*, adopted June 1992 (Forest Principles) at <<http://www.un.org/esa/sustdev/documents/agenda21/index.htm>> at 23 January 2004.

<sup>157</sup> *United Nations Convention to Combat Desertification*, opened for signature, October 1994 (entered into force October 1994) at <<http://www.unccd.int/main.php>> at 22 September 2006.

<sup>158</sup> Megan M. Carpenter, 'Intellectual Property Law and Indigenous Peoples: Adapting Copyright Law to the Needs of a Global Community' (2004) 7(51) *Yale Human Rights and Development Law Journal* 52-54.

## A *The Commitments of Amazonian Countries Relating to the Preservation of Cultural Diversity and the Granting of Equal Rights and Non-Discrimination*

The need to respect and preserve cultural integrity and the need to ensure that indigenous peoples have equal rights have strong foundations in many international frameworks. The key international frameworks dealing with the need to preserve cultural integrity and to free exercise equal opportunity based on indigenous origin or identity are the United Nations *International Covenant on Civil and Political Rights* (CCPR)<sup>159</sup> and the *Convention on the Elimination of All Forms of Racial Discrimination* (CERD).<sup>160</sup> In addition, the need to protect indigenous peoples' cultural integrity was expressly recognized in UNESCO's *Declaration of San Jose on Ethno-Development and Ethnocide in Latin America*.<sup>161</sup>

### 1 *Covenant on Civil and Political Rights (CCPR)*

The commitment to protect cultural diversity is embodied in Article 27 of the *Covenant on Civil and Political Rights* (CCPR) which states:

In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language.<sup>162</sup>

Article 27 provides for the rights of ethnic, religious, and linguistic minorities to enjoy their own cultures. This Article is also significant as it recognize indigenous peoples' human rights and rights of self-determination.

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<sup>159</sup> *United Nations International Covenant on Civil and Political Rights*, opened for signature 16 December 1966 (entered into force 23 March 1976) (CCPR) at <<http://www.ohchr.org/english/countries/ratification/3.htm>> at 22 January 2004.

<sup>160</sup> *United Nations International Convention on the Elimination of All Forms of Racial Discrimination*, opened for signature 21 December 1965, (entered into force 21 December 1965) (CERD) at <<http://www.hrcr.org/docs/CERD/cerd2.html>> at 23 January 2004.

<sup>161</sup> *Declaration of San Jose* provides that: "The Indian peoples have a natural and inalienable right to the territories that they possess as well as the right to recover the land taken away from them. This implies the right to the natural and cultural heritage that this territory contains and the right to determine freely how it will be used and exploited." See *Declaration of San Jose on Ethno-Development and Ethnocide in Latin America*, opened for signature December 1981, (entered into force December 1981). The need to protect cultural property and to ensure equity is also supported by the *International Labour Organization Convention 169* (ILO 16), at <<http://www.unhchr.ch/html/menus/B/62.htm>>. See also the *Organization of American States (OAS) Inter-American Convention on Human Rights (ICH)*, at <<http://www.oas.org/juridico/english/treaties/B-32.htm>>. See also the *United Nations International Covenant on Economic, Social and Cultural Rights (CESCR)*, at <<http://www.ohchr.org/english/countries/ratification/3.html>>.

<sup>162</sup> *International Covenant on Civil and Political Rights*, above n 159, Art. 27.

The United Nations Human Rights' General Comment on Article 27 of the CCPR further defines precisely what constitutes cultural practices. In essence, the CCPR links cultural practices and indigenous peoples with their lands. The CCPR also declares that the preservation of these practices may oblige nations to take positive steps to ensure the maintenance and promotion of traditional knowledge. With regard to the exercise of the cultural rights as provided by Article 27, the United Nations Human Rights Committee (HRC) has observed that:

Culture manifests itself in many forms, including a particular way of life associated with the use of land resources, especially in the case of indigenous peoples. That right may include such traditional activities as fishing or hunting and the right to live in reserves protected by law. The enjoyment of these rights may require positive measures of protection and measures to ensure the effective participation of members of minority communities in decisions which affect them.<sup>163</sup>

## **2     *International Convention on the Elimination of All Forms of Racial Discrimination***

The recognition that all human beings are equal before the law and are entitled to equal protection against any discrimination is embodied in the *International Convention on the Elimination of All Forms of Racial Discrimination*. The Convention states that:

In this Convention, the term 'racial discrimination' shall mean any distinction, exclusion, restriction or preference based on race, color, descent, or national or ethnic origin which has the purpose or effect of nullifying or impairing the recognition, enjoyment or exercise, on an equal footing, of human rights and fundamental freedoms in the political, economic, social, cultural or any other field of public life.<sup>164</sup>

The Convention also states that special measures should be taken – when necessary – to ensure that certain racial or ethnic groups, or individuals have equal enjoyment of, or the ability to, exercise their human rights and fundamental freedoms.<sup>165</sup>

All Amazonian countries are members of the United Nations. Furthermore, with the exception of Surinam, they are all signatories to the Charter of the United Nations *International Covenant on Civil and Political Rights* (CCPR) and the *Convention on the Elimination of All Forms of Racial Discrimination* (CERD). Both of these instruments codify into law the rights

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<sup>163</sup> U.N. Human Rights Commission, *General Comment* No. 23 (50) (Art. 27), HRI/GEN/1/Rev.1 at 38.

<sup>164</sup> *Convention on the Elimination of All Forms of Racial Discrimination*, above n 160, Art. 1 (1).

<sup>165</sup> *Convention on the Elimination of All Forms of Racial Discrimination*, above n 160, Art. 1 (4).

covered in the *Universal Declaration of Human Rights*.<sup>166</sup> These rights include general civil and political rights, such as the right to life, liberty and humane treatment, privacy, a fair trial, equality, freedom of expression, and freedom of religion and assembly. To some extent, all Amazonian countries are implementing these Conventions. In general, the Amazonian indigenous peoples are currently enjoying these basic human rights and the right to self-determination to a degree they have not previously experienced. All Amazonian countries (except Surinam) have recognized the cultural and ethnic diversity or the multi-cultural and multi-ethnic character of their respective countries. In the Amazon, an indigenous person is entitled to the same general human rights as other individuals. In addition, indigenous people assert specific collective rights to which persons belonging to national or ethnic, religious or linguistic minorities are entitled. They also have special rights to self-determination which are linked to their particular history, their relationship to land and traditional activities, their collective integrity, and to their unique cultures and practices.<sup>167</sup> The Amazonian indigenous peoples (except those from Surinam)<sup>168</sup> have had their rights recognized through national constitutional and/or legislative provisions. The right to freely maintain express and develop their ethnic and cultural identities, values, and customs, along with the rights to use and preserve their languages. Amazonian indigenous also have the right to develop and control their own systems of knowledge, together with their social, political, economic and social structures and organization. They also have the right to determine their own developmental priorities, insofar as these impact on their social, cultural, religious and spiritual values and practices of their everyday lives. They also have ancestral rights to the lands they occupy.<sup>169</sup>

Although most of the Amazonian countries have made constitutional and legislative changes to recognize indigenous rights, the recently released United Nations Report shows that the

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<sup>166</sup> United Nations *Universal Declaration of Human Rights*, opened for signature 10 December 1948, (entered into force 10 December 1948).

<sup>167</sup> Stefan Matiation, 'A Brave New World Where Biotechnology and Human Rights Intersect. Biotechnology, Rights and Traditional Knowledge' (BioPortal of the Government of Canada, 2005) 7.4.

<sup>168</sup> Human Rights Committee of the International Covenant on Civil and Political Rights (Iccpr), 'The Republic of Suriname and its Compliance with the International Covenant on Civil and Political Rights. Articles 1, 26 and 27: The Rights of Indigenous Peoples and Maroons in Suriname' (2002) .

<sup>169</sup> Bolivian Constitution with Amended Text of 1995 and Reforms of 2002 and 2004, 1995, Art. 171 (I and II) <[http://www.iadb.org/sds/ind/ley/bolivia\\_leg.pdf](http://www.iadb.org/sds/ind/ley/bolivia_leg.pdf)>. See Colombian Political Constitution, 1991, Art. 7 <[http://www.iadb.org/sds/ind/ley/colombia\\_leg.pdf](http://www.iadb.org/sds/ind/ley/colombia_leg.pdf)>. See Ecuadorian Political Constitution, 1988, Arts 68, 69 and 84 <<http://www.georgetown.edu/pdba/Constitutions/Ecuador/ecuador98.html>>. See Peruvian Political Constitution, 1993, Art. 2 <[http://www.iadb.org/sds/ind/ley/peru\\_leg.pdf](http://www.iadb.org/sds/ind/ley/peru_leg.pdf)>. See Venezuelan Political Constitution, 1999, Art. 124 <[http://www.iadb.org/sds/ind/ley/venezuela\\_leg.pdf](http://www.iadb.org/sds/ind/ley/venezuela_leg.pdf)>. See Brazilian Federal Constitution of the Republic, 1988, Art. 231 <[http://www.iadb.org/sds/ind/ley/brasil\\_leg.pdf](http://www.iadb.org/sds/ind/ley/brasil_leg.pdf)>. See Guyanese Constitution, Amendment Act No 2, 2003, Sc149(G).

rules are either ineffective or being breached.<sup>170</sup> The Report shows that despite some progress over the last decade, the Amazonian indigenous peoples still experience a degree of discrimination in the deprivation of fundamental cultural rights.<sup>171</sup> For example, the existing intellectual property regime does not recognize indigenous peoples' customary laws and systems as a valid mechanism to protect traditional knowledge. Another associated problem is that, excluding Brazil and Peru, the Amazon countries do not provide effective protection of traditional knowledge. As a result of this lack of protection, quite often leads individuals and/or corporations merely to incorporate minor modifications into traditional knowledge and then claim private rights over the 'new' invention, without acknowledging the contribution of the holders of traditional knowledge and without sharing the benefits with indigenous peoples. Such predatory conduct operates to further marginalize and impoverish indigenous peoples – those who already rank as the poorest of the poor.<sup>172</sup> Another significant problem in the Amazonian countries is the lack of legal mechanisms to assist indigenous peoples to preserve their distinctive identity and their cultural integrity.<sup>173</sup> Given that traditional knowledge and associated genetic resources and ecosystems are essential to indigenous peoples' cultural, economic and physical well-being, it can be concluded that the protection of traditional knowledge is essential to effectively ensure equity, recognition of human rights, equality, and social justice for the Amazonian indigenous peoples.

**B      *The Commitments of the Amazonian Countries Relating to Respect, Preservation  
and Protection of Traditional Knowledge Relevant to the Conservation of the  
Biological Diversity***

As previously mentioned, there is a need to respect, preserve and protect traditional knowledge, as a means of promoting the conservation and sustainable use of biological diversity and the wide application of traditional knowledge. This has been highlighted by the CBD, Agenda 21, the Rio Declaration, the Statement of Principles for a Global Consensus on

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<sup>170</sup> United Nation, ECLA 'Social Panorama of Latin America - Preliminary Version', (2006). [http://www.eclac.cl/publicaciones/xml/4/27484/PSI2006\\_Summary.pdf](http://www.eclac.cl/publicaciones/xml/4/27484/PSI2006_Summary.pdf) at 26 September 2007.

<sup>171</sup> Daniela Estrada, *Latin America: Indigenous People Gaining Ground* (2006) IPS-Indigenous Peoples <<http://www.ipsnews.net/news.asp?idnews=35727>> 15 December 2006.

<sup>172</sup> Recent research by the World Bank concluded that of all Latin Americans living in extreme poverty one quarter is indigenous. This proportion is higher in countries with relatively large indigenous populations such as Bolivia, Peru and Ecuador. See Amazon Cooperation Council, Recommendations for the ACTO Strategic Plan and Concept Paper for the Formulation on Agenda for Amazon Sustainability and an Amazon Sustainable Development Strategy (2004) The World Conservation Union (IUCN) <<http://www.sur.iucn.org/publicaciones/documentos/documentos/165.pdf>> at 20 July 2004.

<sup>173</sup> Caportorti, above n 41, 316.

the Management, Conservation and Sustainable Development of All Forests, and the United Nations *Convention to Combat Desertification* (UNCCD).<sup>174</sup>

## 1 *Convention on Biological Diversity (CBD)*

The Convention on Biological Diversity (CBD) is the key international instrument that deals with conservation and sustainable use of biological diversity, access to genetic resources, and the preservation, promotion, and use of the associated traditional knowledge of indigenous and local communities.<sup>175</sup> The CBD is a legally binding international agreement, although the responsibility for enforcing its provisions is vested in the nation states.

The main objectives of the CBD are the conservation of biological diversity; the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the use of genetic resources.<sup>176</sup> Additionally, the most important feature of the CBD is that it offers official and international recognition of the central role in which indigenous peoples play in the conservation of biological diversity through their traditional knowledge.

The Preamble Paragraph 12 of the CBD recognizes the involvement of indigenous peoples in the conservation and sustainable use of biological diversity. This recognition is later emphasized in Articles 8(j), 10(c) and 18(4). Following this, Paragraph 12 states that it is desirable to share ‘equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.’ The issue of equitable sharing of benefits is further emphasized in Articles 1, 8(j), 10 and 15(7).

Article 8(j) is particularly important in acknowledging the authority of indigenous peoples over their traditional knowledge. The requirement to respect the rights of indigenous and local communities is stated in Article 8(j), in a list of obligations to advance *in situ* conservation. Article 8(j) states that:

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<sup>174</sup> United Nations *Convention to Combat Desertification*, above n 157.

<sup>175</sup> United Nations Commission on Human Rights, Sub-Commission on the Promotion and Protection of Human Rights, *Intellectual Property and Human Rights. Resolution 2001/21 (E/CN.4/SUB.2/RES/2001/21)*, (2001).

<sup>176</sup> CBD, above n 1, Art. 1.

Each Contracting Party shall, as far as possible and as appropriate:

(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.<sup>177</sup>

Furthermore, the CBD recognizes the need to protect and encourage the customary use of biological resources. Article 10(c) states that each contracting party shall, as far as possible and appropriate ‘protect and encourage the customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.’<sup>178</sup> Article 10 (c) constitutes a more authoritative assertion of indigenous peoples’ rights over their traditional knowledge because it recognizes that customary laws and practices relating to the use of biological resources and environmental management can improve the conservation of biological diversity.<sup>179</sup> Further, Article 18(4) defines technologies broadly to include ‘indigenous and traditional technologies’.

For the sake of brevity, only the main efforts made by Conference of the Parties (‘COP’)<sup>180</sup> in the negotiation of the recognition and granting of protection for traditional knowledge of indigenous and local communities are briefly mentioned. For example, COP3 agreed on the need to develop national legislation and corresponding strategies for the implementation of Article 8(j), in consultation with representatives of their indigenous and local communities.<sup>181</sup> It also recognized ‘that traditional knowledge should be given the same respect as any other form of knowledge in the implementation of the Convention’.<sup>182</sup> COP3 also recognized the importance of making intellectual property-related provisions of Article 8(j) of the CBD and provisions of international agreements relating to intellectual property mutually supportive,

<sup>177</sup> CBD, above n 1, Art. 8 (j).

<sup>178</sup> CBD, above n 1, Art. 10 (c).

<sup>179</sup> Darrell A. Posey (ed.), *Cultural and Spiritual Values of Biodiversity* (1999) 508 and 509.

<sup>180</sup> Conference of the Parties (‘COP’) is the governing body of the CBD and consists of the countries that have ratified the Convention. It advances implementation of the Convention through the decisions it takes at its periodic meetings of the CBD.

<sup>181</sup> United Nations Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Decision III/14: Implementation of Article 8(j)*, [Art. 1], (1996).

<sup>182</sup> Decision III/14, above n 181, preambular para 9.



and the desirability of undertaking further cooperation and consultation with the World Intellectual Property Organization.<sup>183</sup>

In addition, COP4 decided to create an Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) composed of Parties, including indigenous peoples and local communities, with a mandate to, *inter alia*, provide advice as a priority on the application and development of legal and others forms of protection for knowledge, innovations and practices of indigenous and local communities.<sup>184</sup> Moreover, COP5 expressly recognized the potential importance of *sui generis* and other appropriate systems for the protection of traditional knowledge and the equitable sharing of benefits arising from its use, and also requested Parties to support the development of registers of traditional knowledge, innovations and practices taking into account strengthening legislation, customary practices and traditional systems of resources management, such as the protection of traditional knowledge against unauthorized use.<sup>185</sup>

Through COP6, Parties to the CBD recognized that the CBD is the primary international instrument with the mandate to address issues regarding the respect, preservation and maintenance of knowledge, innovations and practices of indigenous and local communities. COP6 has encouraged the disclosure of the country of origin of genetic resources and traditional knowledge in intellectual property rights application, such as patent.<sup>186</sup> COP6 has also addressed the issue of *sui generis* system for the protection of traditional knowledge.<sup>187</sup> After that, the Bonn Guidelines, adopted in 2002, at the sixth meeting of COP the CBD have linked access to genetic resources with traditional knowledge to the obligation to acquire prior informed consent ('PIC') of indigenous and local communities for the use, reproduction or

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<sup>183</sup> United Nations Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Decision IV/9: The Implementation of Article 8(j) and Related Provisions*, (1998).

<sup>184</sup> Decision IV/9, above n 183, art 1.

<sup>185</sup> United Nations on Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Decision V/16: Article 8(J) and Related Provisions*, 5<sup>th</sup> mtg, [Arts 14 and 17], (2000).

<sup>186</sup> United Nations on Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Decision VI/24: Access and Benefit-sharing as Related to Genetic Resources. Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*, 6th mtg, [Part C [para 1 and 2]], (2002). <<http://www.biodiv.org/doc/decisions/cop-06-dec-en.pdf>> at 24 January 2005. The Bonn Guidelines is aimed to assist parties, governments and other stakeholders in establishing legislative, administrative policy to govern access and benefit-sharing and in negotiating contractual arrangements for access and benefit-sharing.

<sup>187</sup> United Nations on Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Decision VI/10: Article 8(j) and Related Provisions*, [s F para. 33], (2002).

commercial exploitation of their traditional knowledge.<sup>188</sup> This recommendation is important because the CBD does not clearly state that it is necessary to obtain prior informed consent of indigenous and local communities. Such a requirement has been said to be implicit in the text of the CBD; even so, it is not explicitly mentioned. Therefore, it appears that the Bonn Guidelines clarified an outstanding ambiguity in the CBD.<sup>189</sup> The Guidelines also address issues such as increasing indigenous community participation and capacity to participate, and call for benefit-sharing to be instituted for derivatives of genetic products.<sup>190</sup> This recommendation is of course designed to ensure that synthesized genetic resources or derivative materials or products should also be considered for the effect of benefit-sharing.

In the Bonn Guidelines, the CBD has invited Parties and governments to encourage applicants for intellectual property to disclose the country of origin of genetic resources and the origin of traditional knowledge when the subject matter of the application concerns or makes use of genetic resources or traditional knowledge in its development.<sup>191</sup> The COP to the CBD has also stated that disclosure of origin requirements could contribute to tracking compliance with prior informed consent and the mutually agreed terms thus ensuring equitable benefit-sharing on which access to genetic resources was granted.<sup>192</sup> National legislation requiring disclosure of origin already exists in some countries.<sup>193</sup> However, such requirements have yet to be adopted in many countries where intellectual property rights may be sought after. Hence, international initiatives are needed to ensure international framework to implement disclosure of origin requirements.

The COP7 recognized that a *sui generis* system for the protection of traditional knowledge at the international level may enable indigenous and local communities to effectively protect

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<sup>188</sup> Bonn Guidelines, above n 186. Among others, the Bonn Guidelines recommend that 'respecting established legal rights of indigenous and local communities associated with the genetic resources being accessed or where traditional knowledge associated with these genetic resources is being accessed, the prior informed consent of indigenous and local communities and the approval and involvement of the holders of traditional knowledge, innovations and practices should be obtained, in accordance with their traditional practices, national access policies and subject to domestic laws.'

<sup>189</sup> Food and Agriculture Organization of the United Nations (Fao), 'Shaping Local KNowledge and Agrobiodiversity: Policies, Institutions and Processes' (2004) .

<sup>190</sup> Bonn Guidelines, above n 186, Arts 16(a)(vi)-(vii) and 44.

<sup>191</sup> United Nations on Environment Programme, *Bonn Guidelines*, Available at <<http://www.biodiv.org/doc/decisions/cop-06-dec-en.pdf>> at 24 January 2005.

<sup>192</sup> Decision VI/24, above n 186, para 1.

<sup>193</sup> National legislation requiring disclosure of origin already exists in some countries, including in the Andean Community, Brazil, Costa Rica, Denmark, India, Nepal, Norway and the African Union. In some cases, requirement has been included as part of law regulating the access to genetic and biological resources. In others, disclosure is part of intellectual property legislation. See Martha Chouchena-Rojas, Manuel Ruiz Muller, David Vivas and Sebastian Winkler (eds), *Disclosure Requirements: Ensuring Mutual Supportiveness Between the WTO TRIPS Agreement and the CBD* (2005) 9-9.

their knowledge against misuse and misappropriation. It also recognized that such a system should be flexible and respect the interests and rights of indigenous and local communities. It has once again, invited Parties and Governments to consider appropriate measures, with the full and effective participation of indigenous and local communities, to implement at local, national, sub-regional, regional and international levels *sui generis* systems and other new innovative mechanisms that ensure the protection of traditional knowledge, innovations and practices, taking into consideration customary law and traditional practices.<sup>194</sup>

The COP 7 also requested the Working Group on Article 8(j) to consider non-intellectual property-based *sui generis* forms of protection of traditional knowledge, innovations and practices relevant for the conservation and sustainable use of biodiversity. It has also requested further development of, as a priority issue, elements for *sui generis* systems for the protection of the knowledge, innovations and practices of indigenous and local communities which embody traditional lifestyles, and which are relevant for the conservation and sustainable use of biological diversity and for ensuring benefit-sharing arrangements for these communities when their traditional knowledge and associated genetic resources are accessed.<sup>195</sup>

It should also be pointed out that, the COP to the CBD decided to mandate the Ad Hoc Open-ended Working Group on Access and Benefit-Sharing with the collaboration of the Working Group on Articles 8(j) to elaborate and negotiate an international regime on access to genetic resources and benefit-sharing with the aim of adopting an instrument(instruments to effectively implement the provisions in Articles 15 and 8(j) of the CBD,<sup>196</sup> as well as its three main objectives.<sup>197</sup> The following elements are closely related to Article 8(j) of the CBD and should be considered for inclusion in the international regime: (i) measures to ensure compliance with prior informed consent of indigenous and local communities holding

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<sup>194</sup> United Nations on Environment Programme and Conference of the Parties Convention on Biological Diversity, *Decision VII/16 Article 8(j) and Related Provisions. Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices*, 7th mtg, [Art. 1], (2004).

<sup>195</sup> Ibid COP *Decision VII/16*, [Preamble para 17].

<sup>196</sup> United Nations on Environment Programme and Conference of the Parties *Convention on Biological Diversity, Decision VII/19. Access and benefit-sharing as related to genetic resources (Article 15)*, 7th mtg, [Part E, Para. 3], (2004). It is available at <<http://www.biodiv.org/decisions/default.aspx?m=COP-07&id=7756&lg=0>> at 23 January 2005.

<sup>197</sup> The three main objectives of the *Convention on Biological Diversity* (CBD) are: (i) the conservation of biological diversity, (ii) the sustainable use of its components, and (iii) the fair and equitable sharing of benefits arising out of the utilisation of genetic resources. Articles 15 and 8(j) are concerned, respectively, with access to genetic resources and the issues of respect, preservation and maintenance and application of traditional knowledge. See CBD, above n 1.

traditional knowledge, in accordance with Article 8 (j); (ii) disclosure of origin/source/legal provenance of genetic resources and associated traditional knowledge in applications for intellectual property rights; (iii) recognition and protection of the rights of indigenous and local communities over their associated traditional knowledge subject to the national legislation of the countries where these communities are located; (iv) customary law and traditional cultural practices of indigenous and local communities and (v) code of ethics/code of conduct/models of prior informed consent or other instruments in order to ensure fair and equitable sharing of benefits with indigenous and local communities.<sup>198</sup>

As part of the proposal to set up an international regime on access to and sharing of potential benefits from genetic resources and traditional knowledge, the Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing of the CBD has submitted to the COP8 of the CBD a draft proposing an international regime for access and benefit-sharing of genetic resources, as well as a proposal for an international certificate of 'origin/source/legal provenance'.<sup>199</sup> The COP8 of the CBD the Parties made some progress toward defining a process to carry out further negotiations on the topic and agreed to a timetable to complete this process by COP-10 to be held at 2010.<sup>200</sup>

Finally, it should be mentioned that the CBD provisions relating to access to genetic resources, benefit-sharing and prior informed consent have generated considerable debate about the mechanisms and conditions for their implementation. In Amazonian countries the natural non-renewable resources are owned by the state.<sup>201</sup> In many cases, indigenous peoples' rights to use, possess and manage such resources have been recognized as a corollary

<sup>198</sup> Decision VII/9 D, annex, above n 196.

<sup>199</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, *Report of the Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing on the Work of its Fourth Meeting*, 4th mtg, UNEP/CBD/COP/8/6, (2006). at <<http://www.biodiv.org/doc/meetings/cop/cop-08/official/cop-08-06-en.doc>> at 13 April 2006. See also United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, *International Regime on Access and Benefit-Sharing: Consolidated Text of the Comments and Proposals Contained in Submissions by Parties, Governments and Organizations Regarding the International Regime*, 4th mtg, UNEP/CBD/WG-ABS/4/2, (2006). at <<http://www.biodiv.org/doc/meetings/abs/abswg-04/official/abswg-04-02-en.doc>> at 13 April 2006. More information about the certificate of origin/source/or legal provenance can be found at <<http://www.ias.unu.edu/research/certificatesoforigin.cfm>> at 13 April 2006.

<sup>200</sup> Convention on Biological Diversity, United Nations on Environment Programme, Conference of the Parties, *Decision VIII/5. Article 8(j) and Related Provisions*, 8th mtg, (2006). <<http://www.biodiv.org/doc/meetings/abs/abswg-04/official/abswg-04-02-en.doc>> at 13 April 2006.

<sup>201</sup> Efraim Perez, 'Access in Roman-Napoleonic Legal Systems' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 219, 220. Perez notes that, in general, Roman-Napoleonic civil and public administrative law systems are adopted by Amazon countries. Thus, national constitutions provide that natural resources are in the domain of the State.

of the rights over land.<sup>202</sup> In this case, the ownership of biological material would connote ownership of the genetic resources. However, the common understanding in many Amazonian countries is that the authority to determine access, procedures, rules and rights over biological and genetic resources should remain with the state.<sup>203</sup> Nevertheless, given the close relationship between traditional knowledge and genetic resources, indigenous peoples argue that they should have the right to authorize access to genetic and biological resources within their lands, and also access to associated traditional knowledge.<sup>204</sup> They also expect that the procedures for taking such decisions should be based on their own customary decision-making mechanisms.<sup>205</sup>

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<sup>202</sup> In Bolivia, the Constitution (Art. 136) recognizes indigenous peoples' rights to the sustainable use of their renewable natural resources within their lands, as well as having priority for grants of forestry concessions in their areas. The Brazilian Constitution (Art. 231) and the Peruvian Law of Native Communities grant the indigenous peoples the exclusive right to utilize (not ownership rights) the natural resources within their lands. In Peru, wood and wildlife in the territories of indigenous peoples can be harvested only by the members of those communities. Extraction for commercial or industrial purposes must be carried out communally. In Colombia, neither the Constitution nor the subsidiary legislation makes it clear whether the rights over natural resources within indigenous lands should belong to indigenous peoples or to the State. To date, the Colombian Constitutional Court has established that indigenous peoples do own renewable natural resources on their lands. However, the Court has recognized that genetic resources contained in biological resources are owned by the State. See Roldan Ortega, 'Models for Recognizing Indigenous Land Rights in Latin America.' (The World Bank Environmental Department, 2004) 13. See also Paola Ferreira-Miani, 'Colombia: Access and Exchange of Genetic Resources' in Santiago Carrizosa et al (eds), *Accessing Biodiversity and Sharing the Benefits: Lessons from Implementing the Convention on Biological Diversity* (2004) 79, 87. In Ecuador, the State has ownership of biological resources which are considered to be national and public goods (*Law on the Conservation and Sustainable Use of Biodiversity*, Art. 1). Indigenous peoples' rights over the biological/genetic resources within their lands should be recognized by decree. Such decree has not been promulgated so far. In Guyana, the State has ownership of natural resources. Indigenous peoples have the right to continue their traditional practices such as fishing, farming, hunting and forest gathering in their land, as well as in State forests. See Beryl David, Percival Issacs, Angelbert Johnny, Larry Johnson, Maxi Pugsley, Claudine Ramacindo, Gavin Winter and Yolanda Winter, *Wa Wiizi-Wa Kaduzu. Our Territory-Our Custom. Customary Use of Biological Resources and Related Traditional Practices within Wapichan Territory in Guyana* (2006) 51. In Venezuela, indigenous peoples have the right to utilize the natural resources within their lands. Indigenous peoples shall protect, develop and use genetic resources in a sustainable way according to their uses and customs and according to the laws that govern the matter. See *Ley Organica de Pueblos y Comunidades Indígenas and Venezuelan Constitution*, above n 169, Art. 120. In Surinam, the State owns all natural resources and has the inalienable right to exploit or authorize others to exploit those resources. Surinamese law also does not provide any mechanism or recognize any right of indigenous peoples to be consulted about, and participate in, decisions that may affect them. See *Surinam Political Constitution, 1987*, (Surinam) (Art. 41), ('Surinam Political Constitution') <[http://www.iadb.org/sds/ind/ley/suriname\\_leg.pdf](http://www.iadb.org/sds/ind/ley/suriname_leg.pdf)> at 16 August 2006.

<sup>203</sup> Note should be made of the fact that the CBD has recognized the state authority to determine access to genetic resources. See Sarah A. Laird and Rachel Wynberg, 'Biodiversity Prospecting in South Africa: Developing Equitable Partnerships' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 143, 59.

<sup>204</sup> In this particular, the CBD requires states to seek the approval and involvement of the indigenous and local communities before promoting wider application of their traditional knowledge. The term 'prior informed consent' is not defined in the CBD. However, the basic principles of prior informed consent were settled in the Bonn Guidelines. These principles are: legal certainty and clarity; access at minimum cost; transparency of restriction on access, and obtaining consent of the national authority, and, where appropriate, of the relevant stakeholders such as indigenous and local communities.

<sup>205</sup> World Intellectual Property Organization, *Intellectual Property and Traditional Knowledge. Booklet n. 2* (2005) 5.

## 2 *Global Programme of Action on Sustainable Development (Agenda 21)*

Agenda 21 is a global action plan for sustainable development in the 21st century. It establishes a programme which countries can implement to promote sustained and responsible development of the planet.<sup>206</sup> Agenda 21 is considered to be a major achievement of the United Nations Conference on Environment and Development (UNCED) in addressing the social, environmental, and economic implications of development.<sup>207</sup>

It has been suggested that Agenda 21 reflects unprecedented global environmental consensus, commitment and cooperation in identifying practical strategies for solving difficult problems.<sup>208</sup> This is particularly so with the indigenous issues since indigenous peoples' rights to preserve their traditional way of life and land rights are recognized and outlined in Chapters 12, 15, 16, 26, and 32 of Agenda 21.<sup>209</sup>

The focal point of Agenda 21 for indigenous peoples is Chapter 26, entitled 'Recognizing and Strengthening the Role of Indigenous People and their Communities'. This expressly recognizes the importance of indigenous and local communities, their knowledge and culture, and the contribution they make to protect biodiversity. Governments are encouraged to adopt or strengthen appropriate policies and/or legal instruments to protect the intellectual and cultural property of indigenous people, as well as their right to preserve customary administrative systems and practices.

The phrase 'self-management of their resources' mentioned in Chapter 26 encompasses the protection of human rights, as well as intellectual property rights. The provision of Chapter 26 can be used by indigenous peoples to support development and implementation of financial, legal, social and political mechanisms, procedures or projects that strengthen their involvement in and control over land management.<sup>210</sup>

In conclusion, it is clear that Agenda 21 uses clearer and more precise language than the CBD. Agenda 21, however, is not a legally binding agreement, but it may be argued that

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<sup>206</sup> *Agenda 21*, above n 154.

<sup>207</sup> Johannesburg Summit 2002 at <[http://www.johannesburgsummit.org/html/basic\\_info/unced.html](http://www.johannesburgsummit.org/html/basic_info/unced.html)> at 26 November 2003.

<sup>208</sup> Darrell A. Posey, *Traditional Resource Rights: International Instruments for Protection and Compensation for Indigenous Peoples and Local Communities* (1996) 64.

<sup>209</sup> Posey and Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities*, above n 12, 123.

<sup>210</sup> Posey, *Traditional Resource Rights: International Instruments for Protection and Compensation for Indigenous Peoples and Local Communities*, above n 208, 64.

Agenda 21 is one of the most comprehensive examples of international soft law ever established. This proposition aligns with Posey's view that Agenda 21 provides a 'moral if not legal force which may subsequently serve to underpin both national actions and subsequent, possibly more stringent international agreements in specific areas.'<sup>211</sup>

### **3     *Rio Declaration on Environment and Development***

The statements in Agenda 21 are reinforced by similar principles in the Rio Declaration.<sup>212</sup> The Rio Declaration is a proclamation of non-legally binding principles which serves as a framework for governmental actions in the fields of environmental, developmental and economic responsibility.<sup>213</sup> The Rio Declaration proclaims that human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.<sup>214</sup> It also recognizes that that indigenous peoples play a vital role in environmental management and development because of their knowledge and traditional practices. So that, states should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.<sup>215</sup>

### **4     *Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Forests***

The Statement of Forest Principles is a set of fifteen non-legally binding principles governing national and international policy-making for the protection and sustainable management and use of global forest resources.<sup>216</sup> The Statement of Forest Principles provides that national forest policies should recognize and duly support the identity, culture, and rights of indigenous peoples, local communities and forest dwellers.<sup>217</sup> It also recommends that traditional knowledge should be recognized, respected, recorded, developed and, as appropriate, implemented into programmes with equitable sharing of benefits arising from the utilization of indigenous knowledge with indigenous peoples.<sup>218</sup>

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<sup>211</sup> Ibid 57.

<sup>212</sup> Michael Davis, 'Biological Diversity and Indigenous Knowledge. Research Paper 17 1997-98' (Parliament of Australia, 1998) .

<sup>213</sup> *Rio Declaration*, above n 155.

<sup>214</sup> *Rio Declaration*, above n 155, Principle 1.

<sup>215</sup> *Rio Declaration*, above n 155, Principle 22.

<sup>216</sup> *The Statement of Forest Principles*, above n 156.

<sup>217</sup> *The Statement of Forest Principles*, above n 156, Principle 5(a).

<sup>218</sup> *The Statement of Forest Principles*, above n 156, Principle 21(d).

### C *The Commitments of the Amazonian Countries Relating to the Preservation and Protection of Traditional Knowledge Relevant to Food and Agriculture*

The adoption of the *International Treaty on Plant Genetic Resources for Food and Agriculture* (FAO Treaty)<sup>219</sup> by the Amazonian countries creates a legal obligation to protect traditional knowledge relevant to food and agriculture.

The FAO Treaty is a legally-binding instrument that seeks to ensure the conservation and sustainable management of plant genetic resources for food and agriculture, while protecting traditional knowledge relevant to food and agriculture.<sup>220</sup> In harmony with the CBD, the Treaty also aims to guarantee food security, through the conservation, exchange and sustainable use of plant genetic resources for food and agriculture, along with the fair and equitable sharing of benefits derived from their use. In order to implement its objectives, the Treaty has created a Multilateral System of Access and Benefit-sharing Regime for an identified list of 64 of the most important food and forage crops essential for food security – 35 food crops and 29 forage crops.

The Treaty recognizes the enormous contribution that local and indigenous communities and farmers, particularly those in centres of origin/diversity,<sup>221</sup> have made and continue to make to the conservation and development of plant genetic resources. This recognition is the basis of the Farmers' Rights.<sup>222</sup> The issue of protecting traditional knowledge has arisen out of the context of the definition and the implementation of the concept of Farmers' Rights. Farmers' Rights are specifically addresses farmers, without any reference to the rights of indigenous peoples.<sup>223</sup> The Treaty, however, does not provide a clear definition of 'farmers'. However, it has been assumed that the concept of 'farmers' includes any individuals or groups who contribute to the development and conservation of genetic resources to which access is

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<sup>219</sup> The *International Treaty on Plant Genetic Resources for Food and Agriculture*, opened for signature 3 November 2001, entered into force 29 June 2004 (FAO Treaty).

<sup>220</sup> Ibid.

<sup>221</sup> Gerald Moore and Witold Tymowski, *Explanatory Guide to the International Treaty on Plant Genetic Resources for Food and Agriculture*, IUCN Environmental Policy and Law Paper (2005) 34. The authors define the term 'centre of origin' as 'a geographical area where a plant species, either domesticated or wild, first developed its distinctive properties'; and the term 'centre of crop diversity' as 'a geographical area containing a high level of genetic diversity for crop species in in situ conditions.'

<sup>222</sup> Ibid Preambular Para. 7 and Art. 9. See also FAO Resolution 5/98 <<http://www.fao.org/waicent/FaoInfo/Agricult/AGP/AGPS/Pgrfa/pdf/gseeng14.pdf>> at 17 March 200.

<sup>223</sup> FAO Resolution 5/98, above n 222. With regard to indigenous peoples, Article 5(1d) of the FAO Treaty calls on States to 'promote in situ conservation of wild crop relatives and wild plants for food production, including in protected areas, by supporting, inter alia, the efforts of indigenous and local communities.'



facilitated by the FAO Treaty. Indigenous peoples are, therefore, covered by the concept of 'farmers'.<sup>224</sup>

**D      *The Commitments of the Amazonian Countries Relating to the Preservation and Protection of Traditional Knowledge Aimed at Combating Desertification and/or Mitigating the Effects of Drought***

The needs to protect, promote, and use traditional knowledge relevant to combating desertification and/or mitigating the effects of drought is recognized by the United Nations *Convention to Combat Desertification* (UNCCD). Article 17 (c) of the UNCCD states that Contracting Parties shall preserve and protect traditional and local knowledge, know-how, and the practices relevant to combating desertification and/or mitigating the effects of drought. Contracting Parties shall also ensure that the holders receive the benefit from any commercial utilization of their technology, knowledge, know-how, and practices.<sup>225</sup>

Similarly, Article 18.2 requires Contracting Parties to protect, promote and encourage the use of relevant traditional and local technology, knowledge, know-how and practices.<sup>226</sup> In order to do so, Contracting Parties shall make inventories of such technology, knowledge, know-how and practices, as well as their potential uses with in the participating local populations.<sup>227</sup> Further, they shall ensure that such technology, knowledge, know-how and practices are adequately protected and that local populations benefit directly, on an equitable basis and as mutually agreed, from any commercial utilization of them or from any technological development derived from them.<sup>228</sup>

Maggio argues that the recognition by the UNCCD of the rights of holders of traditional knowledge suggests emerging acceptance of new normative standards in international law

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<sup>224</sup> Peter-Tobias Stoll and Anja Von Hahn, 'Indigenous Peoples, Indigenous Knowledge and Indigenous Resources in International Law' in Silke von Lewinski (ed.), *Indigenous Heritage and Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore* (2004) 4, 12.

<sup>225</sup> United Nations *Convention to Combat Desertification*, above n 157, Art. 17 (c).

<sup>226</sup> United Nations *Convention to Combat Desertification*, above n 157, Art. 18.2.

<sup>227</sup> United Nations *Convention to Combat Desertification*, above n 157, Art. 18.2 (a).

<sup>228</sup> United Nations *Convention to Combat Desertification*, above n 157, Art. 18.2 (b).

relating to environmental protection and sustainable development.<sup>229</sup> These new standards include the acceptance in international law of three principles; firstly, the need to recognize the rights and interests of indigenous peoples and local communities; secondly, the recognition of the legal obligation for equitable sharing of the benefits arising out of the utilization of local peoples' knowledge; and thirdly, the importance of effective participation by indigenous peoples and local communities at the local level in order to ensure the effective implementation of conventions concerned with sustainable development.<sup>230</sup>

### **E      *The Commitments of the Amazonian Countries Relating to the Preservation and Protection of Traditional Medicinal Knowledge***

The importance of traditional medicine as a source of primary healthcare was officially recognized by the World Health Organization (WHO) in the *Primary Health Care Declaration of Alma Ata*, in 1978.<sup>231</sup> In 2003, the WHO recognized that traditional medicine is the property of communities from which that knowledge originated, and should be fully respected as such. It also required member states to take measures to protect and preserve traditional medicinal knowledge and medicinal plant resources.<sup>232</sup>

## **VII      SUMMARY OF FINDINGS**

The aim of this chapter has been to provide answers to the question 'Why should traditional knowledge be protected?' This chapter has shown that there are several important rationales for protecting traditional knowledge. Specifically, this chapter has focused attention on the five more compelling justifications for protecting such knowledge. The first justification for the protection of traditional knowledge examined in this chapter is based on the need for improving the livelihood of traditional knowledge holders and for preserving the cultural integrity of indigenous peoples. The adoption of a cultural integrity-based approach in order

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<sup>229</sup> Gregory F. Maggio, 'Recognizing the Vital Role of Local Communities in International Legal Instruments for Conserving Biodiversity' (1997/1998) 179 *Ucla Journal Of Environmental Law And Policy* 179-81. According to Maggio, it is possible to draw a parallel between the Convention to Combat Desertification (UNCCD) and the United Nations Convention on the Law of the Sea (UNCLOS) which codified some existing principles of customary international law, crystallized certain emerging principles and suggested the development of new rules of international law prior to its coming into force years later. Likewise, the UNCCD represents the emergence of nascent legal principles that may emerge as customary international law relating to environmental protection and sustainable development.

<sup>230</sup> Ibid.

<sup>231</sup> World Health Organization (Who), *Declaration of Alma-Ata on Primary Health Care*, Alma-Ata, USSR, [IV], (1978).

<sup>232</sup> World Health Organization, *WHO Medicines Strategy 2004-2007. Countries at the Core* (2004) <whqlibdoc.who.int/hq/2004/WHO\_EDM\_2004.5.pdf> at 23 September 2006.

to protect traditional knowledge is essential to ensure that indigenous peoples' rights to enjoy their own culture are fully respected and implemented. The protection of traditional knowledge should strengthen and revitalize indigenous peoples' cultural heritage. It should also ensure that such knowledge can be passed on to future generations. The protection of indigenous peoples' cultures, values, practices, systems of knowledge and institutions (including systems of ownership rights of land and resources) requires also the preserving the necessary background for the creation, innovation, and development of traditional knowledge systems.

The second referred to the need to reinforce and to promote equity, equality and non-discrimination with regard to protecting traditional knowledge. This chapters has argued that the application of the principles of equity, equality and non-discrimination provide vital support for the protection of traditional knowledge. This contrasts starkly with the existing intellectual property regimes which have focused almost entirely on the protection of the pharmaceutical, agricultural, herbal and nutraceutical products that companies derive from traditional knowledge, to the detriment of the traditional knowledge holders. This raises questions about the ethics or fairness when traditional knowledge is utilized; the protection of traditional knowledge is needed, therefore, to diminish or eliminate conditions which may cause or help to perpetuate discrimination and inequality related to the allocation of rights over and the distribution of benefits from such knowledge.

The third reason for protecting traditional knowledge is, however, that is it valuable for trade and economic development, as well as (forth reason) it is essential for the conservation of biological diversity and to combat desertification. It is also important for other environmental purposes, including food security and human health. This chapter has shown that traditional knowledge and indigenous peoples' involvement are essential for the conservation and sustainable use of biological diversity and to global food security. The loss of traditional knowledge and cultural diversity would constitute an irretrievable loss of biological resources. It has been argued that the conservation of biological diversity is intricately linked to the recognition, reward and protection of traditional knowledge. Thus, action aimed at preserving biological diversity and associated traditional knowledge should be linked to action aimed at preserving and protecting the cultural and economic integrity of indigenous peoples.

The protection of traditional knowledge as a means of encouraging its use in the development of commercial products has also been considered. It has been argued that that traditional

knowledge should be protected because it has the potential to contribute to the development of new medicinal drugs, foods and other products. Indigenous peoples contribute to the development of new products through the use of their traditional knowledge. This occurs, for instance, when indigenous peoples introduce bioprospectors to the wild plants that they use for medicinal purpose, and provide knowledge about the proper time for harvesting, the appropriate parts of the plant to use, their precise utility and functions in treating particular diseases, and the best methods to store, prepare, and administer the medicine. Additionally, plants used by indigenous peoples in their traditional medicine are often used as sources of inspiration and as models for the synthesis of new drugs with better therapeutic, chemical or physical properties than the original compounds. When traditional knowledge is used as a tool to select genetic resources, it increases the efficiency of finding useful plants with, for example, medicinal properties which result in enhanced rates of innovation. Traditional knowledge also reduces the research time and cost of drug discovery processes. Traditional knowledge can also provide the chemical groundwork on which the development of a drug is based. In short, traditional knowledge contributes significantly to global health care systems through the use of medicinal plant-based drugs developed from plants known to, and grown by, indigenous peoples.

This chapter has also demonstrated that traditional knowledge associated with food production is essential for world food security. Traditional knowledge contributes to the development of new crop varieties, insecticides, and other products by providing genetic material and landraces, and by providing knowledge about plant predators, diseases and their associated effects on plants. However, using traditional knowledge-based information and converting it into innovations that are useful for society as a whole, will not occur if indigenous peoples have no incentives to maintain, preserve, innovate and transfer their knowledge to non-indigenous individuals or corporations.

The fifth justification for the protection of traditional knowledge is concerned the need for ensuring compliance with international legal and moral obligations. This chapter has also highlighted the high level of international recognition of the need to protect traditional knowledge. This obligates Amazonian countries to honor their commitments and to implement legal frameworks to protect traditional knowledge. International agreements, declarations and statements concerned with the conservation and sustainable use of biological diversity have all recognized the need for, and importance of, indigenous peoples' involvement in the conservation of biological diversity, through the application of their

traditional knowledge and their traditional cultural practices. The claims of indigenous peoples to the right to control access to their traditional knowledge have also received comprehensive and significant recognition. Additionally, the need for non-indigenous individuals and/or corporations to obtain prior informed consent from indigenous peoples before accessing their traditional knowledge has also been recognized. Human rights recognition is based on the need to protect the status of indigenous peoples and preserve and maintain their lifestyle and culture. Further, indigenous peoples' rights over land, decision-making processes and the rights to participate in the development of activities that may affect them, have also been internationally recognized.

## **PART THREE**

## PART THREE: PROTECTING TRADITIONAL KNOWLEDGE

### I INTRODUCTION

Part three of this thesis considers some of the ways in which traditional knowledge can be protected. Even though, of all the aspects of an indigenous peoples' cultural and intellectual heritage, their expressions and knowledge are most easily appropriated by third parties – exactly because they are intangible and more readily copied.<sup>1</sup> Until the middle of the 1980s, the discussion on intellectual property of indigenous peoples was focused basically on traditional cultural expressions or expressions of folklore, such as traditional songs, dances, clothing or pottery. Since then, the role of intellectual property rights has become much broader, including international debates on the recognition of rights over traditional knowledge relevant for the conservation and sustainable use of biological diversity, as well as associated with the use and proprieties of genetic resources and how such rights should be substantiated so as to strengthen their respect in a wider context.<sup>2</sup>

The question of how to protect traditional knowledge has been debated in a number of different international fora including the *Convention on Biological Diversity* (CBD); the World Intellectual Property Organization (WIPO); the World Trade Organization's (WTO) Council on Trade-related Aspects of Intellectual Property Rights; the *International Treaty on Plant Genetic Resources for Food and Agriculture* (FAO Treaty); and the United Nations Commission on Human Rights. Most of the discussions are concentrated on whether traditional knowledge is the subject of protection and on whether the protection of traditional knowledge should be pursued within the context of an intellectual property regime. The ongoing discussions are concerned as to whether or not, and if so, to what extent existing intellectual property regimes offer adequate protection to traditional knowledge; or whether it is necessary to introduce a new *sui generis* regime.

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<sup>1</sup> *Customary Law & The Intellectual Property System in the Protection of Traditional Cultural Expressions and Traditional Knowledge: Issues Paper. Version 3.0, [6] (2006)* <[http://www.wipo.int/tk/en/consultations/customary\\_law/index.html](http://www.wipo.int/tk/en/consultations/customary_law/index.html)> at 26.09.2007.

<sup>2</sup> Protection of traditional cultural expression has been generally discussed in copyright or copyright-plus terms, while protection of traditional knowledge associated with genetic resources has been discussed in context of patents laws and access to biological and genetic resources. See Michael Blakeney, 'Intellectual Property in the Dreamtime: Protecting the Cultural Creativity of Indigenous Peoples' (Paper presented at the Research Seminar, Oxford Intellectual Property Research Centre, 1991). See also Matthias Leistner, 'Analysis of Different Areas of Indigenous Resources' in Silke von Lewinski (ed.), *Indigenous Heritage and Intellectual Property: Genetic Resources, Traditional Knowledge and Folklore* (2004) 49, 65.

As a preliminary point, it is useful to highlight that there are two broad approaches to the protection of traditional knowledge. The first is positive protection which entails the active assertion of intellectual property rights with a view to excluding others from using traditional knowledge without the prior authorization of its holders. The second is defensive protection which refers to measures aimed at preventing others from claiming intellectual property rights over traditional knowledge.

The most important intellectual property rights treaties in the context of biological diversity and plants, as well as the international trade regime are the Agreement on Trade-Related Aspects of Intellectual Property Rights ('TRIPs Agreement')<sup>3</sup> and the Convention for the Protection of New Varieties of Plants ('UPOV Convention').<sup>4</sup>

The TRIPs Agreement seeks to establish minimum level standards of intellectual property protection for seven regimes of intellectual properties rights, namely, copyright and related rights, trademarks, geographical indications, industrial designs, patents, layout of designs of integrated circuits and protection of undisclosed information. Among these regimes, a patent (and related forms such as utility models, plant patents and petty patents/innovation patents) and plant breeders' rights are the prevalent intellectual property regimes for the protection of inventions using or based on isolation, modification or application of genetic resources, as well as protection of plants, varieties, genes and processes of molecular biology and genetic transformation.<sup>5</sup> Hence, patent is the regime of choice in the field of biotechnology and pharmaceuticals.<sup>6</sup> To a large extent, patent has been considered to be the most workable mechanism to protect traditional knowledge associated with genetic resources. However, it should be noted that beyond the patent, other forms of intellectual property rights such as trade, collective, and certification marks, geographical indications, designations of, and

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<sup>3</sup> *WTO - Agreement on Trade-Related Aspects of Intellectual Property Rights*, opened for signature, (entered into force Article 1.2 of the TRIPs Agreement states that 'for the purposes of this Agreement, the term 'intellectual property' refers to all categories of intellectual property that are the subject of Sections 1 through 7 of Part II'. at <[http://www.wto.org/english/tratop\\_e/trips\\_e/t\\_agm0\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/t_agm0_e.htm)> at 05 May 2004.

<sup>4</sup> *The International Convention for the Protection of New Varieties of Plants* (the "UPOV Convention") was signed in Paris in 1961 and entered into force in 1968. It was revised in Geneva in 1972, 1978 and 1991. The 1978 Act entered into force in 1981, and the 1991 Act entered into force in April 1998. See [www.upov.org](http://www.upov.org) at 23 January 2006. The text of the 1961. See also <<http://www.upov.org/en/publications/conventions/index.html>> at 4 April 2006.

<sup>5</sup> Rob Tripp, Derek Eaton and Niels Louwaars, 'Intellectual Property Rights. Designing Regimes to Support Plant Breeding in Developing Countries. Report No 35517-GLB' (The International Bank for Reconstruction and Development (The World Bank), 2006) 3.

<sup>6</sup> Catherine Geci and Bartha Maria Knoppers, 'Patenting of Higher Life Forms: A Canadian Perspective' in Burton Ong (ed.), *Intellectual Property and Biological Resources* (2004) 163, 163. Geci and Knoppers emphasize that patents on DNA sequences, protein molecules and drugs derived from these substances have been filed worldwide.



appellation of origin, copyright and related rights and databases may be relevant mechanisms for the protection of the interest and rights of the indigenous peoples.<sup>7</sup>

However, the common understanding is that, in most cases, traditional knowledge does not fulfill the requirements for protection provided under international standards for patent law and by most national legislation.<sup>8</sup> Moreover, it has been said that the existing regime does not perfectly meet the needs of traditional knowledge holders, as their interests might not be limited to a positive protection. In some cases, such as those connected with religious and ethical beliefs, the stakeholders feel the need for a negative protection against any commercial exploitation.<sup>9</sup> In this context, the conclusion of the Concise Report of the Secretary General of the United Nations, which has reviewed the *Berne Convention for the Protection of Literary and Artistic Works* ('Berne Convention') and the *Paris Convention for the Protection of Industrial Property* ('Paris Convention'), in order to analyze the possibilities for indigenous peoples to secure intellectual property rights by utilizing existing international standards and mechanisms should be mentioned.<sup>10</sup> The Report concluded that 'existing international agreements on intellectual property appear largely inadequate to meet the concerns of indigenous people for protection of their traditional knowledge.'<sup>11</sup> Moreover, it has been

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<sup>7</sup> Examples which illustrate how the current intellectual property system can be utilized as a mechanism to protect traditional knowledge can be found at World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Review of Existing Intellectual Property Protection of Traditional Knowledge*, [Para. 35], WIPO/GRTKF/IC/3/7, (2002). See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Information on National Experiences with the Intellectual Property Protection of Traditional Knowledge*, [Paras 2 and 18], WIPO/GRTKF/IC/5/INF/2, (2003).

<sup>8</sup> See Graham Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge* (2004) 95.

<sup>9</sup> Posey and Dutfield note that: 'IPR laws are generally inappropriate and inadequate for defending the rights and resources of local communities. IPR protection is purely economic, whereas the interests of indigenous are only partly economic and linked to self-determination. Furthermore, cultural incompatibilities exist in that traditional knowledge is generally shared and, even when it is not, the holders of restricted knowledge probably still do not have the right to commercialise it for personal gain.' See Darrell A. Posey and Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities* (1996) Intro. See also Leistner, 'Analysis of Different Areas of Indigenous Resources', above n 2.

<sup>10</sup> Secretary General of U.N. Escor. Comm. On Human Rights, *Discrimination Against Indigenous Peoples: Intellectual Property of Indigenous Peoples: Concise Report of the Secretary General*, U.N. Escor. Comm. on Human Rights 9th sess, [6], U.N. Doc. E/CN.4/Sub.2/1992/30, (1992).

<sup>11</sup> Gibson notes that the holders of traditional knowledge are concerned not only with the issue of traditional knowledge protection but also with respect for and conservation, preservation and promotion of cultural significance and value of particular practices, methods, and customs, as well as restrict the disclosure of secret and sacred knowledge. See Johanna Gibson, *The National Encroachment Upon Community Space: Recent Australian Decisions in Indigenous Rights to Natural Resources* (2003) American Studies Website <<http://www.americanstudies.wayne.edu/xchanges/2.2/gibson.html>> at 23 April 2006.

noted that acquiring, exercising and enforcing property rights, particularly in the case of international protection, is expensive, perhaps prohibitively so for indigenous peoples.<sup>12</sup>

Furthermore, indigenous peoples themselves have issued declarations and statements affirming that the existing protection mechanisms, in particular the patent regime, are not sufficient to protect their cultural and intellectual property rights.<sup>13</sup> In addition, the Statement sponsored by the Coordinator of Indigenous Organizations of the Amazon Basin ('COICA') pointed out that adjusting indigenous systems to the prevailing intellectual property regime could distort indigenous peoples own systems of knowledge and their protection.<sup>14</sup>

Therefore, indigenous peoples claim that their customary laws are of vital importance for the preservation of traditional knowledge and that knowledge protection should be considered in the context of their livelihood needs, customary laws and values. Indigenous peoples demand that a *sui generis* regime be designed in conformity with their customary laws.<sup>15</sup> Such a *sui*

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<sup>12</sup> Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 8, 105. See also Graham Dutfield, 'TRIPS-Related Aspects of Traditional Knowledge' (2001) 33(3) *Case Western Reserve Journal of International Law* 233-57. Dutfield notes that it would cost about US\$ 20,000 to prepare and prosecute a patent in the United States. This cost is likely to make patents prohibitive for indigenous peoples.

<sup>13</sup> *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples*, adopted on 12-18 June, [2.5], (1993). The *Mataatua Declaration* asserted, in Article 2.3, that 'existing protection mechanisms are insufficient for the protection of Indigenous Peoples cultural and intellectual property rights'. See also Coordinator of Indigenous Organizations of the Amazon Basin ('Coica'), *Intellectual Property Rights and Biodiversity: The COICA Statement* (1994) <<http://users.ox.ac.uk/~wgtrr/coica.htm>> at 30 September 2003.

<sup>14</sup> *The COICA Statement*, above n 13, art 9. COICA has formulated short term recommendations, as well as medium terms strategies to deal with this issue. The short term recommendations are in general related to the need of the identification and evaluation (from the standpoint of the indigenous worlds) of the existing intellectual property regimes, including mechanisms instruments and forums which are either adverse to or useful for indigenous peoples, as well as studies of the feasibility of alternative systems and mechanisms for protection of their resources and knowledge. They also include the recommendation for establishment of a regional and local indigenous advisory body on intellectual property and biodiversity with functions involving legal advice, monitoring, production and dissemination of information, and production of materials. As medium terms measures, the Statement intends to design a mechanism for maintaining and ensuring rights of indigenous peoples to deny indiscriminate access to the resources of their communities or peoples and making it possible to contest patents or other exclusive rights to what is in essence indigenous. In the medium term, the Statement calls for: (i) the establishment of 'an indigenous programme for the collection, use and protection of biological resources and knowledge'; (ii) the training of indigenous leaders in subject-matters of intellectual property and biological diversity; (iii) the formulation of a 'Legal Protocol of Indigenous Law on the use and community knowledge of biological resources'; (iv) the implementation of a strategy for the broadcasting of this Legal Protocol at national and international levels.

<sup>15</sup> Rodrigo de la Cruz, 'Vision de los Pueblos Indigenas en el Contexto de las Decisiones sobre ABS y 8(j): Impacto de las Decisiones de la CBD/COP sobre el Mandato de la IGC de la OMPI' (COICA, ICTSD, IUCN, 2004) 9. See also Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights of Indigenous Peoples' (TWN Third World Network, 2003). See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, *Report*, 5<sup>th</sup> sess, WIPO/GRTKF/IC/5/15, (2003).

*generis* regime would merely translate and codify customary laws, thereby making them enforceable in national courts and possibly across international borders as well.<sup>16</sup>

These arguments lead to a further consideration of the issues of necessity of creating a *sui generis* regime to provide a positive protection to traditional knowledge, as well as developing special mechanisms for defensive protection. There seems to be a consensus among developing countries that amendments to existing intellectual property rights should provide defensive protection to traditional knowledge. As mentioned before, in the Bonn Guidelines,<sup>17</sup> the CBD has invited Parties and governments to encourage applicants for intellectual property to disclose the country of origin of genetic resources and the origin of traditional knowledge when the subject matter of the application concerns or makes use of genetic resources or traditional knowledge in its development.<sup>18</sup>

Nevertheless, there appears to be a growing consensus among developing countries and also experts that a *sui generis* regime should be developed to provide an effective positive protection for traditional knowledge.<sup>19</sup> A *sui generis* regime of protection of traditional knowledge would most likely provide better protection for such knowledge because it would overcome the difficulty that arises from the public and private domain distinction.

There is no agreement, however, about the appropriate legal form for such a *sui generis* regime. As a result, a wide variety of proposals for the development of a *sui generis* regime

<sup>16</sup> Indigenous Peoples Council on Biocolonialism (IPCB), *Collective Statement of Indigenous Peoples on the Protection of Indigenous Knowledge. Agenda item 49(e): Culture* (2004) UN Permanent Forum on Indigenous Issues. 3rd sess <<http://www.ipcb.org/resolutions/htmls/pf2004.html>> 31 July 2006. See also Graham Dutfield, *Protecting Traditional Knowledge: Pathways to the Future*, (2006) International Centre for Trade and Sustainable Development (ICTSD), at <<http://www.iprsonline.org/unctadictsd/docs/Graham%20final.pdf>> 18 May 2006

<sup>17</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, (entered into force 5 June 1992) ('CBD') Art. 3. There are currently 188 Parties to the Convention. The text of the CBD is available at <<http://www.biodiv.org>> at 23 January 2005.

<sup>18</sup> United Nations on Environment Programme, *Bonn Guidelines*, <<http://www.biodiv.org/doc/decisions/cop-06-dec-en.pdf>> at 24 January 2005

<sup>19</sup> The need to develop new mechanisms to protect traditional knowledge was identified as an objective in WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999), 107 and 226. See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Report*, 6th sess, [Para. 35], WIPO/GRTKF/IC/6/14, (2004). See also Graham Dutfield, 'Outstanding Issues in the Protection of Traditional Knowledge' (2004) 3(2) *Technology Policy Briefs* (Maastricht, Netherlands, UNU/INTECH) 2-2. A counter-argument about the creation of a *sui generis* regime to protect traditional knowledge has been made by Gillespie-White who argues that such a regime is inadvisable to protect traditional knowledge, can be summarised as follows: (i) the diversity of subject matter of protection and (ii) the difficulty with establishing the owner of rights and the procedures and formalities for the acquisition and maintenance of the rights conferred and time limits conferred on the rights. See Lee Gillespie-White, *Is a Sui Generis System Necessary? Benefit Sharing Agreements* (2004) International Intellectual Property Institute (IPI) <[http://www.iipi.org/topics/health\\_pharmaceuticals\\_biotech.asp](http://www.iipi.org/topics/health_pharmaceuticals_biotech.asp)> at 13 April 2006.

has been presented. In addition, different models or legal mechanisms are currently being developed at the national level.<sup>20</sup> Indigenous peoples are also developing guidelines for the access to, and use of their knowledge.<sup>21</sup>

There are also concerns about the need for an international framework for enforcement of the protections granted within national jurisdictions and to promote the relationship among existing *sui generis* regimes with intellectual property rights systems in other countries as a condition for achieving international recognition of the rights granted under the national systems.<sup>22</sup>

Part Three is divided into four chapters. Chapter 5 examines to what extent patents can be used, or are suitable to protect traditional knowledge and whether the stock of traditional knowledge can itself be the subject-matter of protection through the mechanism of patents and provides a brief introduction to the essential features of trademarks, collective, and certification marks, geographical indications and designation of origin, copyright, plant breeders' rights and databases. Chapter 6 reviews and evaluates some of the more prominent proposals for *sui generis* legal frameworks. Subsequently, Chapter 7 examines the feasibility of utilizing the framework of customary laws to regulate access to, and protection of, traditional knowledge. Chapter 8 examines the legal and administrative measures that Amazon countries have adopted to protect traditional knowledge, both individually and as a group.

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<sup>20</sup> Meantime many governments have developed or are developing legislation to protect traditional knowledge. Different measures have been adopted such as: laws on access and benefit-sharing (ABS); environmental framework laws; intellectual property right granted by *sui generis* regime. Among countries which have enacted specific legislation to regulate the access to, and protection of traditional knowledge are Brazil, Costa Rica, Guatemala, Panama, The Philippines, Peru, Portugal, India and Thailand. Further, Australia, Canada, Colombia, Kazakhstan, New Zealand, the Russian Federation, Venezuela and Vietnam are using their existing intellectual property laws to protect traditional knowledge. A detailed summary of the various measures or proposals is to be found in Correa, *Traditional Knowledge and Intellectual Property. Issues and Options Surrounding the Protection of Traditional Knowledge* See also Surinder Kaur Verma, 'Protecting Traditional Knowledge. Is a Sui Generis System an Answer?' (2004) 7(6) *Journal of World Intellectual Property* 765-92.

<sup>21</sup> Some examples are the Council of Yukon First Nations, *Traditional Knowledge Research Guidelines*, (2000). <<http://www.contaminants.ca/done/guidelines/tkGuidelines/TK%20Guidelines.pdf#search='council%20of%20yukon%20first%20nations%20and%20traditional%20knowledge%20research%20guidelines'>> at 23 April 2006. See also Australian Institute of Aboriginal and Torres Strait Islander Studies, *Guidelines for Ethical Research in Indigenous Studies*, which is available at <<http://www.research.murdoch.edu.au/ethics/hrec/absethics.html>> at 23 April 2003. See also *The Thammasat Resolution*, (1997). This resolution was made by 45 representatives of indigenous, peasant, non-governmental, academic and governmental organizations from 19 countries. The full text of this resolution can be found at <<http://www.greens.org/s-r/16/16-13.html>> at 23 April 2006.

<sup>22</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Composite Study on the Protection of Traditional Knowledge*, [Para. 26], WIPO/GRTKF/IC/5/8, (2003). <<http://www.wipo.int/tk/en/index.html>> at 23 January 2005.

## **CHAPTER 5**

### **PROTECTING TRADITIONAL KNOWLEDGE THROUGH THE EXISTING INTELLECTUAL PROPERTY REGIME**

#### **I INTRODUCTION**

This chapter critically examines whether the patent regime is suitable to protect the traditional knowledge of Amazonian indigenous peoples. It also provides a brief introduction on the some salient points of trademarks, collective, and certification marks, geographical indications and designation of origin, copyright, plant breeder's rights and databases. However, no attempt will be made in this thesis to deeply examine how these frameworks with their current standards concerning availability, acquisition, scope, maintenance and enforcement of rights, may be used as effective mechanisms for the protection of traditional knowledge. Instead, attention is focused on whether adequate and appropriate protection can best be provided through the patent regime because as it was earlier mentioned patent has been considered to be the most workable mechanism to protect traditional knowledge associated with genetic resources.

Patent protection for traditional knowledge arises in two contexts. The first is the potential use of patents by indigenous peoples to protect traditional knowledge. Here, the main concern is whether the patent regime is able to accommodate traditional knowledge. The second relates to the use that non-indigenous peoples make of patents to protect traditional knowledge-based products and processes. In this instance, the main concern is the negative impact of patents on indigenous peoples' rights over traditional knowledge. While the focus of this thesis is on the protection of traditional knowledge held by indigenous peoples from the Amazon region, this chapter considers the application and consequences of patent law in non-Amazonian countries. The reason for this is that traditional knowledge is likely to be protected in different jurisdictions.

It should be noted that patent law differs from country to country in regard to the subject matter of the patent protection and also in regard to the concept of novelty in relation to

biological inventions.<sup>1</sup> The concept of prior art also varies between countries.<sup>2</sup> In general, however, there are more similarities than differences in patent laws. Therefore, it is possible to make some generalizations about the impact of patent law on traditional knowledge. In this thesis, the minimum standards for patenting an invention as set out by the *Agreement on Trade Related Aspects of Intellectual Property Rights* (TRIPs Agreement) are used as a guide for the present examination.<sup>3</sup>

## II      USE OF PATENTS BY INDIGENOUS PEOPLES TO PROTECT TRADITIONAL KNOWLEDGE

In broad terms, patent can be defined as exclusive property rights or title of ownership granted by the government to an inventor as a reward for an innovation, either a product or a process.<sup>4</sup> The rights to prevent others from producing, using, selling, or importing the invention are granted for a fixed period of time, usually 20 years, counted from the filing date. Once the patent expires and the protection ends, the invention becomes part of the public domain and can be used freely by any person.

Githaiga argues that 'the challenge of applying existing patent regime to traditional knowledge arises firstly from meeting the requisite conditions for patenting and secondly from the cost of registering and maintaining a patent.'<sup>5</sup> As will be explained in the chapter, discussion about whether traditional knowledge can be protected by patent depends on whether such knowledge fulfils the requirements of patentability. As will be seen, the

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<sup>1</sup> Gelvina Rodriguez Stevenson, 'Trade Secrets: The Secret to Protecting Indigenous Ethnobiological (Medicinal) Knowledge' (1999-2000) 32 *New York University Journal of International Law & Politics* 1119-41. Stenvenson mentions that in the United States, Europe and Japan a biological material that is isolated and/or purified from naturally existing substances can be subject matter of patent protection, as the isolated substance does not exist in nature in the exact form. Other countries, such as Brazil and the Andean Nations, however, consider that such substances cannot be protected owing to the lack of novelty.

<sup>2</sup> Hanns Ullrich, 'Traditional Knowledge, Biodiversity, Benefit-Sharing and Patent System: Romantics v. Economics?' EUI Working Paper Law No 2005/07' (European University Institute, 2005) 19. See also Manuel Ruiz Muller, 'The International Debate on Traditional Knowledge as Prior Art in the Patent System: Issues and Options for Developing Countries' (Center for International Environmental Law, 2002) 16. Ruiz defines the term 'prior art' as follows: 'Prior art or the state of the art usually refers to the complete body of knowledge which is available to the public before a patent application is filed or, if a priority date is claimed, before that priority date'. It should be noted that the scope of the prior art depends on national law. For example, some patent laws recognize oral disclosures made anywhere in the world as forming part of the prior art, while other laws recognize only oral disclosures made within their territorial borders.

<sup>3</sup> *WTO - Agreement on Trade-Related Aspects of Intellectual Property Rights*, opened for signature 15 April 1994, (entered into force 15 April 1994) (TRIPS Agreement) Art. 1(2).

<sup>4</sup> *Ibid.* This definition based on Articles 27(1) and Article 33 of the TRIPS Agreement. *Ibid.* This definition is based on Articles 27(1) and Article 33 of the *TRIPS Agreement*.

<sup>5</sup> Joseph Githaiga, 'Intellectual Property Law and the Protection of Indigenous Folklore and Knowledge' (1998) 5(2) *Murdoch University Electronic Journal of Law* 1-20.

protection requirements present significant impediments to the protection of traditional knowledge. The collective nature of traditional knowledge, together with its non-material form, the fact that it is transmitted orally and the lack of clear authorship, means that a patent regime may not be suitable to protect traditional knowledge. As a result, the general view is that, in most cases, traditional knowledge does not fulfill the requirements for patentability.<sup>6</sup>

Another concern is presented by Posey. He argues that the existing patent system serves to stimulate commercialization and distribution, whereas indigenous peoples may be concerned with restricting the use of and/or prohibiting the commercialization of their traditional knowledge.<sup>7</sup> Furthermore, there are other objectives for traditional knowledge protection, such as promotion, preservation and maintenance of their systems of knowledge that may not be accommodated by patent protection.<sup>8</sup>

### A *Criteria for Patentability*

The TRIPS Agreement establishes the minimum standard for patenting an invention. States are free to set higher standards of protection for existing systems of protection and to introduce new systems, not referred to in the TRIPS Agreement. The minimum standards as to the conditions that must be met for patents to be issued are: there is an invention; there is an identifiable inventor; the invention is new; it involves an inventive step; and it is industrially applicable. In addition, the disclosure of the invention has to be sufficiently clear and complete. These are the basic requirements for a patent in most jurisdictions around the world. All these conditions must be fulfilled before the grant of a patent - if an invention does not comply with any of these requirements the patent will not be issued.

The rules governing the determination of the patentability requirements, and more specifically novelty, inventive step, the scope of the claims, as well as the definition of the term 'prior art' varies according to the nature of the subject-matter for which protection is sought and to national patent law. The next part of this chapter examines whether traditional knowledge fulfill the requirements of patentability.

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<sup>6</sup> Graham Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge* (2004) 95.

<sup>7</sup> Darrell A. Posey, 'Indigenous Peoples and Traditional Resource Rights: A Basis for Equitable Relationships?' (Paper presented at the Workshop on Indigenous Peoples and Traditional Resources Rights, University of Oxford, The Green College Centre for Environmental Policy & Understanding, 28 June 1995).

<sup>8</sup> Grethel Aguilar, 'Access to Genetic Resources and Protection of Traditional Knowledge in the Territories of Indigenous Peoples' (2001) 4(4-5) *Environmental Science & Policy* 241-52.

## 1 *Invention*

The first requirement that needs to be satisfied for the grant of a patent is that there is an invention. The term 'invention' is not defined by the *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS Agreement) or the *Paris Convention for the Protection of Industrial Property* (Paris Convention). Generally, a patent is not granted for a mere discovery, a scientific principle, an abstract theorem, or an idea. It should be mentioned that, medical or surgical treatments, schemes or plans, or methods for doing business are patentable in some jurisdictions.

Since 1980, when the first patent on a living organism was accepted by the United States,<sup>9</sup> the general approach which has been taken by the American, European and Japanese Patent Offices and others is that gene-sequences are inventions when they have been isolated and purified.<sup>10</sup> These patent offices began to grant biotechnology patents on an essential biological process for the production of a plant or animal and on new uses of known biological material and chemical structures produced by a naturally occurring organism, including plant, animals or a human being.<sup>11</sup> At present, genetic information is protectable subject matter as long it fulfils the requirements for protection. As a result, there has been a growing trend focused on claiming rights over genetic resources and associated traditional knowledge.

It is worth noting that neither a chemical substance from nature nor a chemical synthetically produced with the same structure as the natural substance is generally patentable.<sup>12</sup> A technical application must go beyond a simple replication of the natural function of the biological material.<sup>13</sup> Under this perspective, a non-naturally occurring compound (with

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<sup>9</sup> It refers to the recognition by the U.S. Supreme Court which ruled in the case of *Diamond vs Chakrabarty* that a genetically altered bacterium could be granted a utility patent under standard patent law (U.S. Supreme Court, 1980, 447 U.S. 303). For more information about granting of patents on living organisms, see Walter V. Reid, Sarah A. Laird, Rodrigo Gámez, Ana Sittenfeld, Daniel H. Janzen, Michael A. Gollin and Calestous Juma, 'A New Lease on Life' in Walter V. Reid et al (eds), *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development* (1993) 1-21. See also Lara Ewens, 'Seed Wars: Biotechnology, Intellectual Property, and the Quest for High Yield Seeds' (2000) 23 *Boston College International and Comparative Law Review* 285-86. See also Bernard Le Buanec, 'Protection of Plant-Related Innovations: Evolution and Current Discussion' (2004) 9 *IP Strategy Today* 1-3.

<sup>10</sup> Michael Blakeney, 'Access to Genetic Resources, Gene-based Inventions and Agriculture. Study Paper 3b' (Commission on Intellectual Property Rights, 2002) 9.

<sup>11</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Information Provided by WIPO Member States Concerning Practices Related to the Protection of Biotechnological Inventions*, 1st sess, WIPO/GRTKF/IC/1/6, (2001).

<sup>12</sup> Shayana Kadidal, 'Plants, Poverty, and Pharmaceutical Patents' (1993) 103(1) *Yale Law Journal* 223-38.

<sup>13</sup> Blakeney, 'Access to Genetic Resources, Gene-based Inventions and Agriculture', above n 10.



unexpected properties), purified and isolated (from the natural substance) may be patentable as a substance and/or as a purification process.<sup>14</sup> As a result, drugs derived from plants are usually patentable, while traditional knowledge of the existence or therapeutic properties of naturally occurring plants is not.<sup>15</sup>

One of the reasons why traditional knowledge is not suitable for patent protection in many countries is that traditional knowledge is often not considered to be an 'invention'.<sup>16</sup> One reason why traditional knowledge is considered not to be an invention arises from the collective and inter-generational characteristics of traditional knowledge creation, development and maintenance for social and domestic purposes.<sup>17</sup> This makes it difficult or indeed impossible to identify the source of particular knowledge and to demonstrate its single act of creation.<sup>18</sup> Another reason why traditional knowledge may not be considered to be an invention is because traditional knowledge often relies on the natural function of the biological material.<sup>19</sup> In other words, traditional knowledge relates to the use of plant materials in their natural state which may be entire, diluted or otherwise processed. The problem here is that a traditional knowledge-based product, such as a traditional medicine

<sup>14</sup> Kadidal, above n 12. See also Carlos M. Correa, 'Sovereign and Property Rights over Plant Genetic Resources. Study Paper No 2 E' (FAO Commission on Plant Genetic Resources, 1994) 15.

<sup>15</sup> For more information about how pharmaceutical companies are (generally) evading the 'product of nature' concept, and what they are doing in order to create drugs derived from plants capable of legal protection, see Kadidal, above n 12.

<sup>16</sup> Article 1 (3) of the *Paris Convention for the Protection of Industrial Property* allows signatory nations to grant patent to natural products such as wines, grain, tobacco leaf, fruit, cattle, minerals, mineral waters, beer, flowers, and flour. However, many countries do not recognize products of nature, or naturally occurring subject matter, as patentable. However, if the active substance is isolated, purified, or altered, a patent may be granted. However, there are also the cases where traditional knowledge itself can be considered to be an invention capable of being protected, as it was in the Turmeric case for instance. While commenting on the Turmeric case, Dutfield noted that the 'invention' was the traditional use of the plant and it is because this traditional use had been documented that the invention was deemed to lack novelty. See Graham Dutfield, *Indigenous Peoples, Bioprospecting and the TRIPs Agreement: Threats and Opportunities* (2001) ACTS <<http://www.acts.or.ke/pages/publications/dutfield.doc>> at 21 September 2005. See also Stevenson, above n 1. See also Donald S. Chisum and Michael A. Jacobs, *Understanding Intellectual Property Law* (1992) 12.

<sup>17</sup> Gurdial Singh Nijar, 'Community Intellectual Rights Protect Indigenous Knowledge' (1998) 36 *Biotechnology and Development Monitor* 11-12.

<sup>18</sup> Anthony Stenson and Tim Gray, 'Cultural Communities and Intellectual Property Rights in Plant Genetic Resources' in Tim Hayward & John O'Neill (ed.), *Justice, Property and the Environment. Social and Legal Perspectives* (1997) 190. Stenson and Gray argue that with traditional knowledge there is no single act of creation as it results from centuries of collective experience; thus any one person or group is entitled to private property in this knowledge. See also Stevenson above n 1, 1146. For example: 35 U.S.C. § 102(f) of the United States patent law states a person shall be entitled to a patent, unless he did not himself invent the subject matter sought to be patented. This is to say, a patent can not be issued if the putative patent-holder did not himself invent the subject matter of the patent. See U.S. Committee for the World Intellectual Property Organization, at <<http://www.wipousa.org/about.html>> at 23 January 2006.

<sup>19</sup> Leslie Harroun, 'Intellectual Property Rights in Papua New Guinea' in Kathy Whimp and Mark Busse (eds), *Protection of Intellectual Biological & Cultural Property in Papua New Guinea* (2000) 29-35.

directly derived from herbal material including extracts, tinctures and oils of plants, will be considered to be a product of nature rather than an invention.

The extent to which the concepts of 'natural', 'man-made' or 'invented' differ from culture to culture underline the difficulty in determining what should be considered an innovation or simply a product of nature.<sup>20</sup> The key problem here in many cases the demarcation line that separates 'invention' from 'discovery' is very thin.<sup>21</sup> In this context, it is important to determine whether a product is a product of nature and, as such, a 'discovery', or whether it is man-made and, therefore, an invention.

In most intellectual property laws a mere discovery of beneficial qualities of wild organisms does not fulfill the requirements of patentability, primarily because these organisms and their properties are neither man-made inventions nor invented artifacts.<sup>22</sup> While this view is widespread, there are problems with its application to traditional medicinal knowledge. This is because traditional remedies are not mere products of nature and traditional varieties are not raw material. They are not found in nature as such.<sup>23</sup> Instead, they are products of indigenous peoples' knowledge and labor.<sup>24</sup> To transform a plant into a medicine, one has to know the correct species, its location, the proper time for harvesting, which parts of the plant to use,<sup>25</sup> its utility and functions in treating a particular disease and the symptoms the substance will alleviate, as well as the best methods to store, prepare, and finally, how to administer the

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<sup>20</sup> Jessica Scott Jerome, *Intellectual Property Rights and Indigenous Peoples: A History of the Topic as an Object of Study* University of Chicago <<http://www.regionalworlds.uchicago.edu/InterlProp.Jerome.pdf>> at 7 July 2006.

<sup>21</sup> Dan Leskien and Michael Flitner, 'Intellectual Property Rights and Plant Genetic Resources: Options for a *Sui Generis* System. Issues in Genetic Resources No. 6' (International Plant Genetic Resources Institute, 1997).

<sup>22</sup> Markku Oksanen, *Authorship, Communities and Intellectual Property Rights* (1998) University of Indiana <<http://www.indiana.edu/~ascp/Drafts/oksanen.pdf>> at 27 February 2006.

<sup>23</sup> See Erica-Irene Daes, *Protection of the Heritage of Indigenous People*, Human Rights Study Series (1997) 12. The biochemist Georg Albers-Schonberg notes that finding medicines in nature is extremely difficult and unpredictable.

<sup>24</sup> Elaine Elisabetsky, 'Folklore, Tradition, or Know-How? The Ethnopharmacological Approach to Drug Discovery Depends on Our Ability to Value Non-Western Knowledge of Medicinal Plants', (1991) 15 *Cultural Survival Quarterly*, 10. See also David S. Tilford, 'Saving the Blueprints: The International Legal Regime for Plant Resources' (1998) 30 *Case Western Reserve Journal of International Law* 373-28. See also Hope Shand, *Human Nature: Agricultural Biodiversity and Farm-Based Food Security* (1997) 23.

<sup>25</sup> Ranjan Gupta, Bjarne Gabrielsen and Steven M. Ferguson, 'Nature's Medicines: Traditional Knowledge and Intellectual Property Management. Case Studies from the National Institutes of Health (NIH), USA' (2005) 2 *Current Drug Discovery Technologies* 203-11. Gupta [at al.] note that a given compound may be concentrated in the roots rather than in the aerial systems of plant, other may be synthesized in a particular season or developmental stage of the plant. For example, the knowledge which guides the discovery of prostratin was obtained by Dr. Paul Alan Cox, an American ethnobotanist, was from local Samoans who used this tree bark of *Homalanthus nutans* for centuries for treatment against symptoms of liver diseases. There are two varieties of *Homalanthus nutans*; however only one produces the anti-HIV moiety, and it is produced only when the tree is of a certain size.

medicine (the dosage).<sup>26</sup> By doing that, indigenous peoples are giving the genetic resource a new use with scientific or commercial value or significance. Thus, some traditional medicinal knowledge related to preparations from natural substances could be considered as an invention and consequently protectable under a patent regime.<sup>27</sup> Further, landraces or traditional varieties are not found in nature as such. They have been selected and improved by indigenous peoples, and/or farmers, over many generations. Broadly speaking, it can be said that landraces are themselves the product or embodiment of knowledge of the indigenous peoples and farmers who have developed, conserved and improved them.<sup>28</sup>

## 2 *Original Inventor*

The second condition for patenting an invention is that an inventor or co-inventor must be identifiable.<sup>29</sup> An invention is considered to be a creation of an individual or a group of individuals (or co-inventors). It is relatively easy to fulfill this requirement where the first inventor of a particular aspect of traditional knowledge can be identified. However, traditional knowledge systems often do not involve an identifiable single author, creator or inventor. The author or inventors cannot be identified because traditional knowledge is often commonly generated and accumulated in a collective manner, based on the broad exchange and circulation of ideas and information, and transmitted orally from one generation to the other.<sup>30</sup> In such cases, it is difficult, if not impossible, to identify a single creator or inventor or who has passed on or improved from one generation to the next.

Another problem that confronts the protection of traditional knowledge is that only natural or legal entities are considered to be able to hold intellectual property rights.<sup>31</sup> Indigenous

<sup>26</sup> Elisabetsky, above n 24.

<sup>27</sup> Darrell A. Posey and Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities* (1996) 76.

<sup>28</sup> A. Zaid, H. G. Hughes, E. Porceddu and F. Nicholas, *Glossary of Biotechnology for Food and Agriculture - A Revised and Augmented Edition of the Glossary of Biotechnology and Genetic Engineering*, FAO Research Paper 9 (2001) 10. See also Rene Salazar, Niels P. Louwaars and Bert Visser, 'On Protecting Farmer's New Varieties: New Approaches to Rights on Collective Innovations in Plant Genetic Resources. CAPRI Working Paper No. 45' (International Food Policy Research Institute (IFPRI), 2006), 13.

<sup>29</sup> Darrell A. Posey, *OCEES Research Paper N. 6. Provisions and Mechanisms of the Convention on Biological Diversity for Access to Traditional Technologies and Benefit Sharing for Indigenous and Local Communities Embodying Traditional Lifestyles* (1996) Oxford Centre for the Environment, Ethics & Society at Mansfield College <<http://www.mansfield.ox.ac.uk/ocees>> 23 September 2003. See also Aguilar, above n 8.

<sup>30</sup> Juliana Santilli, *Cultural Heritage and Collective Intellectual Property Rights. Collective Intellectual Property Rights* (2006) IK <<http://siteresources.worldbank.org/INTINDKNOWLEDGE/Resources/iknt95.htm>> at 13 November 2006.

<sup>31</sup> Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 6, 104. See also Chidi Oguamanam, 'Localizing Intellectual Property in the Globalization Epoch: The Integration of Indigenous Knowledge' (2004) 11 *Indiana Journal of Global Legal Studies* 135-3.

communities in general lack legal personality to enable them to hold intellectual property rights. It has been presumed that because of their collective or communal organizational structure, indigenous communities do not easily fit within the concept of natural or legal entities adopted by the existent intellectual property regimes. This is not a problem, however, for indigenous peoples from Bolivia, Brazil, Colombia, Peru and Venezuela as they are already recognized by national legislation as legal entities.<sup>32</sup>

### **3     *Indigenous Peoples as Co-inventors***

Patents may be invented jointly number of individuals. The fundamental issue here is to consider whether all members of a community can be considered as the co-inventor of traditional knowledge and whether indigenous persons can qualify as co-inventors with individuals or corporations that develop a traditional knowledge-based product or process.

In order to be recognized as a co-inventor, each inventor must have made a contribution (individually or jointly) to the patentable invention. In general, existing patent laws do not provide a statutory definition of what constitutes collaboration (as to the amount of mental labor) for a person to be recognized as a co-inventor and owner.<sup>33</sup> The main requirement is that each of the co-inventors must contribute to the invention. This is to say, the co-inventors must contribute with each other on the same subject-matter and make some contribution to the inventive thought and to the final result.<sup>34</sup> Furthermore, the providers of background knowledge or general information to an invention can be recognized as co-inventors provided that the information or knowledge supplied helps to distinguish the invention from the prior art. The provider of background information will be considered to be a co-inventor when the information or knowledge constitutes an essential part of the invention - which is taken to mean that without the contribution, the invention could not have been created.

The contribution of traditional knowledge to the creation of an invention may vary from one invention to another. For example, traditional knowledge may be:

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<sup>32</sup> World Intellectual Property Organization, *Intellectual Property and Traditional Knowledge*. Booklet n. 2 (2005) 26.

<sup>33</sup> Lionel Bently and Brad Sherman, *Intellectual Property Law* (2nd ed, 2004) 511.

<sup>34</sup> Michael J. Huft, 'Indigenous Peoples and Drug Discovery Research: A Question of Intellectual Property Rights' (1995) 89(4) *Northwestern University Law Review* 1678-03. See also Joshua Matt, 'Searching for an Efficacious Joint Inventorship Standard' (2002) 44(1) *Boston College Law Review* 245-52. See also Michael Blakeney, 'Bioprospecting and the Protection of Traditional Medical Knowledge of Indigenous Peoples: An Australian Perspective' (1997) 6 *European Intellectual Property Review* 298-99.

- (i) considered to have been a necessary prerequisite for the development of the invention;
- (ii) considered to have been an mechanism to facilitate the development of the invention;
- (iii) the source of necessary background material and information for the development of the invention (for example, as it was in the neem patent case)<sup>35</sup>;
- (iv) used during the process of developing an invention and have constituted an essential part of the conception of the invention (or it can be considered an inventive contribution), to the extent that the traditional knowledge holder is a potential co-inventor (as it was in the Ayahuasca,<sup>36</sup> Cunani, and Tipir cases)<sup>37</sup>;
- (v) used during the process of developing an invention, but was only incidental to the attainment of the invention; and
- (vi) a particular embodiment or one example in the description of the invention, but was not indispensable to arriving at (or replicating) the invention as claimed.<sup>38</sup>

It has been said that indigenous people co-inventorship would also be inapplicable because rarely would the entire community qualify as a co-inventor of a creation or innovation.<sup>39</sup> Further, indigenous peoples face a number of problems in being recognized as co-inventors with individuals or corporations that develop a traditional knowledge-based product or process. The circumstances in which and the extent to which traditional knowledge is used in the development of a product or process are relevant to the understanding the interface between the claims of the inventor and the holder of the traditional knowledge, and to provide a guide to the determination of whether the holders of such knowledge will be treated as co-inventors. The underlying problem is that, as previously mentioned, a person does not become an inventor because of the fact that he/she was the first to observe a useful property or effect

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<sup>35</sup> Dutfield, *Indigenous Peoples, Bioprospecting and the TRIPs Agreement: Threats and Opportunities*, above n 16. While commenting on the neem case, Dutfield noted that 'the neem-related inventions embody uses identical to those of Indian farmers but the products and/or methods of extraction are different. In such cases it can safely be assumed that the existence of relevant knowledge was a (but not the) sine qua non for the inventions.'

<sup>36</sup> Leanne M. Fecteau, 'The Ayahuasca Patent Revocation: Raising Questions about Current U.S. Policy' (2001) 21(1) *Boston College Third World Law Journal* 69-104. Fecteau notes that the unique difference between the variety of ayahuasca over which Loren Miller, an American scientist, claimed a patent and the variety of ayahuasca used by indigenous peoples from the Amazon is the colour of its flower petals.

<sup>37</sup> Luiza Villamea with the Collaboration of João Fábio Caminoto and David Hathaway (English Translation), *Indians Want Patent: Chiefs Prepare International Law Suit Against Scientist Who Registered Indigenous Knowledge* (2000) *ISTO É Magazine* and *Genet News* <<http://www.gene.ch/genet/2000/Jan/msg00069.html>> at 23 September 2005.

<sup>38</sup> United Nations on Environment Programme, Convention on Biological Diversity and Conference of the Parties, *Interrelation of Access to Genetic Resources and Disclosure Requirements in Applications for Intellectual Property Rights*: Report of the World Intellectual Property Organization (WIPO), 8th mtg, [Para. 34 and 62], UNEP/CBD/COP/8/INF/7, (2006).

<sup>39</sup> Daniel J. Gervais, 'Spiritual But Not Intellectual? The Protection of Sacred Intangible Traditional Knowledge' (2004) 11 *Cardozo Journal of International and Comparative Law* 467-82.

of an invention or discover a genetic resource or its use.<sup>40</sup> The second problem is that, in most cases, it is difficult to determine whether a product or new variety was created or derived from traditional knowledge. In simple terms, the contributions of traditional knowledge to the development of an invention may be indistinguishable, unless the inventor discloses information about the use of traditional knowledge in the development of the process or product.<sup>41</sup> The third problem is to determine whether the quantity and/or the quality of the contribution made by traditional knowledge to the development of the process or product is sufficient to enable the holders of traditional knowledge to qualify as co-inventors.

As previously mentioned, an invention needs to be sufficiently clear and complete. At present, however, most intellectual property laws do not include a specific requirement to disclose the contribution of traditional knowledge in the development of an invention. As a result, in many cases the inventor does not acknowledge the contribution made by the use of traditional knowledge in the patent application.<sup>42</sup> Therefore, a patent is likely to be granted to the claimant, regardless of indigenous peoples' rights to be recognized as co-inventor. The consequence of the lack of recognition and the failure to determine the extent to which traditional knowledge has contributed to the creation of an invention, operate to preclude any possibility of the rights of indigenous peoples to be considered as a co-inventor.

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<sup>40</sup> Blakeney, 'Bioprospecting and the Protection of Traditional Medical Knowledge of Indigenous Peoples: An Australian Perspective', above n 34, 299. See also Ullrich, above n 2.

<sup>41</sup> Russel L. Barsh, Gina Allery, Gaia Bernstein, Vivian Buckingham, Claire Charters, Neeta Thakur and Elena Zlatnik, *The North American Pharmaceutical Industry and Research Involving Indigenous Knowledge* (2001) First Peoples Worldwide <[http://www.firstpeoples.org/corporate/company\\_engagement/final\\_biotech.htm](http://www.firstpeoples.org/corporate/company_engagement/final_biotech.htm)> at 15 November 2004. See also Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 6. See also Jerzy Koopman, 'Biotechnology, Patent Law and Piracy: Mirroring the Interest in Resources of Life and Culture' (2003) 7.5 *Electronic Journal of Comparative Law* 1-6. Koopman notes that, in general, highly technical products, such as biopharmaceuticals, are the sum of the parts, and traditional knowledge may be the most indirect one of them. As a result of this, the invention for which a patent application is filed may not show the relation between the use of traditional knowledge and such invention.

<sup>42</sup> Barsh, Allery, Bernstein, Buckingham, Charters, Thakur and Zlatnik, above n 41. They mention that a group of experts has examined the original patent applications in the United States Patent and Trademark Office's (USPTO) on-line database, and searched for other recent patents (1992-2001), that refer to traditional medicinal uses or cite ethno-botanical literature. The group found that applicants differed considerably in the extent to which they recognized indigenous knowledge as a lead or 'prior art'. The group provided some examples: the W.R. Grace application for neem oil stated that neem extracts had been 'used for centuries as an insecticide' and for a wide variety of medical conditions, but argued that the fungicidal use of neem was novel. Six other applications referred to traditional medicinal uses of their natural source, but only one of them (Gorinsky, for *Ocotea rodiei* or 'greenheart') identified a specific Indigenous community (the Wapishana tribe of Guyana's Rupununi region) as the source of the lead.

#### 4 *Novelty*

To be patentable, an invention must be novel. An invention is considered to be novel if it is not in the public domain at the date of the application for the patent. Indigenous peoples often find it difficult to fulfill this requirement. This is because the collective and inter-generational characteristics of traditional knowledge make it difficult for them to show that their knowledge has not been used or known before the date of the application of the patent. In addition, indigenous peoples may face the problem that much of their knowledge has been documented and publicized by other researchers. This precludes indigenous peoples from obtaining a patent subsequently on an innovation derived from that knowledge without new, significant alteration or some obvious improvement. For these reasons, traditional knowledge does not easily fulfill the requirement of novelty.

One could argue that traditional knowledge is new as it is being created and evolving constantly in response to the needs of individuals and communities articulated through their social and natural environment. Each new individual or generation contributes to and adds to traditional knowledge development.<sup>43</sup> It could also be argued that knowledge which is known only within the community and has not been widely disseminated or published outside the community is novel. These arguments have merit, but they are unlikely to succeed given that most patent systems would regard traditional knowledge as a static and antique.

#### 5 *Inventive Step*

Yet another requirement for an invention to be patentable is that the invention involves an 'inventive step' (or is 'non-obvious'). The requirement of an inventive step is determined by making a comparison with the prior art base. An inventive step is considered to be present whenever, from the perspective of a person skilled in that particular field, the invention does not stem as an evident or obvious conclusion from the prior art.<sup>44</sup> In a broad sense, the term 'prior art' usually refers to and includes all matter which has been made available to the

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<sup>43</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities*,

<sup>44</sup> Bently and Sherman, above n 33, 445.

public, before the priority date of the application, through a written or oral description, use or any other means.<sup>45</sup>

It has been said that it is often easier for pharmaceutical or other companies to prove that their invention is non-obvious (by isolating the active chemical), even though their invention performed the same function as the wild plant.<sup>46</sup> In fact, indigenous peoples may also have problems in showing that their inventions are non-obvious. For example, traditional knowledge associated with use or properties of a particular genetic resource may be considered to be obvious because it is often widely shared by different groups.

Another reason why it may be difficult to show an inventive step arises from the dynamic and continually evolving characteristic of traditional knowledge. Innovation does continue within the traditional context, but often in a collective and cumulative ways that may not correspond directly with the notions of inventive step that is embedded within the patent system.<sup>47</sup> The problem here is that the differences between the previous traditional knowledge and its innovation and improvement are often not readily perceptible, given such knowledge is continually evolving. This may lead to the conclusion that there is no identifiable inventive improvement, or it may be concluded that there are some improvements, but the difference between the new and the previous knowledge is not sufficient to demonstrate an inventive step.<sup>48</sup> The fundamental problem with the latter conclusion is that it does not take account of the fact that the level of inventiveness needed in order to fulfill the requirements of novelty and an inventive step is unclear.<sup>49</sup> Further, the perception of the inventiveness is subjective when an invention is continuously innovated and improved. In this context, the question arises as to whether any particular quantum of inventiveness is needed to fulfill the requirement of inventive step.<sup>50</sup> It is worth remembering that the innovative character of traditional

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<sup>45</sup> Bently and Sherman, above n 33, 469.

<sup>46</sup> Stevenson, above n 1, 1147.

<sup>47</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Recognition of Traditional Knowledge within the Patent System: Interim Draft*, 8th sess, [Annex Para 10], WIPO/GRTKF/IC/8/8, (2005).

<sup>48</sup> Marie Ann Battiste and James Youngblood Henderson, *Protecting Indigenous Knowledge and Heritage: A Global Challenge*, Purich's Aboriginal Issues Series (2000) 43. See also, Stevenson, above n 1, 1147.

<sup>49</sup> There has been little guidance about how to find out whether an invention is non-obvious or whether there is an inventive step. For more information see, Bently and Sherman, above n 33, 479. See also Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 6, 95.

<sup>50</sup> It has been said that the perception of the inventiveness is subjective when an invention is continuously innovated and improved. In this context, the question arises as to whether any particular quantum of inventiveness is needed to fulfil the requirement of inventive step. See Harold E. Potts, 'The Definition of Invention in Patent Law' (1944) 7 *Modern Law Review* 113-23. See also Ikechi Mgbeoji, 'Patents and Traditional



knowledge has been acknowledged by Article 8(j) of the *Convention on Biological Diversity* (CBD) and other international treaties. Although it may be difficult to draw the demarcation line between prior art and innovation in the context of traditional systems of knowledge, traditional knowledge is able to be protected by patents. It is instructive, for example, to mention that in China 3300, for example, patents for innovations were granted within the field of traditional medicine in 2001.<sup>51</sup>

## 6 Industrial Application

Another requirement of patentability is that an invention must be capable of industrial application.<sup>52</sup> To be industrially applicable, an invention needs to be capable of being made or used in any industry, including agriculture. One purpose of this requirement is to exclude the patenting of ideas which evidently do not achieve the claimed ends. Another issue of this requirement is to prevent the patenting of things, processes and scientific information having no known practical application as a priority.<sup>53</sup>

To some extent, one can say that this may be the easiest of the patentability requirements for indigenous people to satisfy. However, it has been said that although traditional knowledge can in a broad context show its utility simply by the fact that it has led to the development of products and processes, traditional knowledge itself may not fulfill the requirement of utility under patent legislation. This is because traditional knowledge often does not have direct industrial application. Traditional knowledge needs to be embodied as a product or process to fulfill this requirement.

### B Limitations of the Patent Regime with Respect to Traditional Knowledge

While some traditional knowledge may be patentable, indigenous peoples still face the problem that patent protection is difficult to acquire, exercise and enforce. This is the case even within the country of origin of the genetic resources and associated traditional knowledge at issue. It may be prohibitive (in the sense of cost) for indigenous peoples to hire lawyers to codify their knowledge into patent claims and to file and enforce these patents

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Knowledge of the Uses of Plants: Is a Communal Patent Regime Part of the Solution to the Scourge of Bio Piracy?' (2001) 9(1) *Indiana Journal of Global Legal Studies* 163-81.

<sup>51</sup> World Intellectual Property Organization, *Intellectual Property and Traditional Knowledge*. Booklet n. 2, above n 32, 18.

<sup>52</sup> Bently and Sherman, above n 33, 385.

<sup>53</sup> Saa Bavec and Peter Raspor, *Patenting Biotech Inventions in Europe* (2002) Food Technol. Biotechnol. <public.carnet.hr/ftbrfd/40-353.pdf> 12 December 2006.

locally and abroad.<sup>54</sup> Further, from the perspective of indigenous peoples, the patent regime is an inadequate means of protection because of its limited duration; after the expiration of which the inventions enter the public domain. Another concern with the use of patents is that the effects of a patent are limited to the territory of the country having issued the patent. In addition, although patents may suit the needs of an individual country, there remains the problem arising when two communities own overlapping traditional knowledge rights granted by different countries.<sup>55</sup>

Indigenous peoples have expressed concerns that even if traditional knowledge was able to be protected by patent, patent regimes do not meet the needs of traditional knowledge holders.<sup>56</sup> In this sense, it is argued that patents are not an adequate mechanism to strengthen and to empower indigenous peoples in their quest for preservation of their traditional knowledge and the integrity of their culture, for example.<sup>57</sup> The reason for this is that the patent regime is primarily aimed at stimulating the commercialization and distribution of inventions. In some cases, indigenous peoples are not only concerned with the commercial exploitation or the protection of traditional knowledge; indigenous peoples may also feel the need for a negative protection against any commercial exploitation of elements of their knowledge systems, such as those connected with religious and ethical beliefs.<sup>58</sup> In addition, many indigenous peoples are concerned about the conservation, preservation and promotion of cultural significance and

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<sup>54</sup> Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge*, above n 6, 105. See also Graham Dutfield, 'TRIPS-Related Aspects of Traditional Knowledge' (2001) 33(3) *Case Western Reserve Journal of International Law* 233-57. Dutfield notes that it would cost about US\$ 20,000 to prepare and prosecute a patent in the United States. This cost is likely to make patents prohibitive for indigenous peoples.

<sup>55</sup> Álvaro Zerda-Sarmiento, *Derechos de Propiedad Intelectual Sobre Conocimiento Vernaculo* (Doctoral thesis, Universidad Nacional de Colombia, 2002) 56.

<sup>56</sup> Posey and Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities*, above n 27, Intro.

<sup>57</sup> *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples*, adopted on 12-18 June, [2.3], (1993). The *Mataatua Declaration* asserted, in Article 2.3, that 'existing protection mechanisms are insufficient for the protection of Indigenous Peoples' Cultural and Intellectual Property Rights'. See also Coordinator of Indigenous Organizations of the Amazon Basin (COICA), *Intellectual Property Rights and Biodiversity: The COICA Statement* (1994) at <<http://users.ox.ac.uk/~wgtrr/coica.htm>> at 30 September 2003.

<sup>58</sup> Posey and Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities*, above n 27, Chapter 8. Posey and Dutfield note that: 'IPR laws are generally inappropriate and inadequate for defending the rights and resources of local communities. IPR protection is purely economic, whereas the interests of indigenous peoples are only partly economic and linked to self-determination. Furthermore, cultural incompatibilities exist in that traditional knowledge is generally shared and, even when it is not, the holders of restricted knowledge probably still do not have the right to commercialise it for personal gain.' See also Matthias Leistner, 'Analysis of Different Areas of Indigenous Resources' in Silke von Lewinski (ed.), *Indigenous Heritage and Intellectual Property: Genetic Resources, Traditional Knowledge and Folklore* (2004) 49, 59.

value, of particular practices, methods, and customs, as well as with restricting the disclosure of secret and sacred knowledge.<sup>59</sup>

### **C      *Patent Over Traditional Knowledge Based Inventions Taken Out By A Third Person***

The second way in which patents may interact with and impact on traditional knowledge is where third parties take out patents based upon traditional knowledge. Traditional knowledge about the useful properties of a genetic resource may help an inventor to derive an invention from that genetic resource.

The use of patents by non-indigenous peoples to protect traditional knowledge-based products and processes has become a major point of concern for Southern nations and indigenous peoples. The concept of patentability has been expanded to accommodate the interests of the chemical, pharmaceutical and seed industries.<sup>60</sup> Given that most traditional knowledge is related to the needs of these industries, the change in the concept of patentability has significantly facilitated the misappropriation of traditional knowledge associated with the use of plants.

One aspect of misappropriation of traditional knowledge through patents relates to the use of traditional knowledge and traditional resources as a source of information for the development of 'new' product simply by creating a semi-synthetic or a synthetic version of the compound discovered from traditional resources, or even a purified extract which is protected by patent and marketed without any acknowledgement of the contribution made by traditional knowledge to the invention.<sup>61</sup> This is because the semi-synthetic and/or synthetic version is considered as a 'new' invention and not related to the traditional knowledge from which it was derived or used as the main source of information. This is because the use of traditional knowledge as a source of the new invention is imperceptible, if it is not disclosed.

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<sup>59</sup> Secretary General of U.N. Escor. Comm. On Human Rights, *Discrimination Against Indigenous Peoples: Intellectual Property of Indigenous Peoples: Concise Report of the Secretary General*, In this context, the conclusion of the Concise Report of the Secretary General of the United Nations, which has reviewed the *Berne Convention for the Protection of Literary and Artistic Works (Berne Convention)* and the *Paris Convention for the Protection of Industrial Property (Paris Convention)*, in order to analyse the possibilities for indigenous peoples to secure intellectual property rights by utilizing existing international standards and mechanisms, should be mentioned. The Report concluded that 'existing international agreements on intellectual property appear largely inadequate to meet the concerns of indigenous people for protection of their traditional knowledge.'

<sup>60</sup> Ikechi Mgbefji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge* (2006) 122.

<sup>61</sup> Graham Dutfield, *Protecting Traditional Knowledge: Pathways to the Future* (2006) International Centre for Trade and Sustainable Development (ICTSD) <<http://www.iprsonline.org/unctadictsd/docs/Graham%20final.pdf>> 18 May 2006.

The major problem here is that there is no legal obligation to disclose the information about the relevant traditional knowledge.

Another associated problem *relates* to the concept of novelty. The new invention certainly would be considered to be obvious by the holders of traditional knowledge used in the development of the invention. The concern here is that the use of a biological material in a manner obvious for a person possessing traditional knowledge is probably not sufficient to keep knowledge in the public domain. This is because the type of knowledge in which the person is assumed to be skilled will likely be Western knowledge not traditional or indigenous knowledge.<sup>62</sup> The emphasis here is that the test for patentability should be ‘whether the claimed invention would be non-obvious to a person skilled in that art *anywhere in the world*.’<sup>63</sup> The question here is that ‘could the holders of traditional knowledge be considered to be ‘skilled in the art’?’<sup>64</sup>

In the pharmaceutical sector, traditional knowledge is used to orient research programs. A pharmaceutical medicine which is traditional knowledge-based can be similar to or different from the traditional knowledge used as source of information, depending on the way in which such knowledge and traditional plants were used. Broadly speaking, traditional knowledge may lead to different types of medicines such as: (i) unmodified natural plant product in which the therapeutic efficacy retains essential features of the traditional use of the genetic resources; (ii) unmodified natural products, where the clinical efficacy is only slightly suggested by traditional plant use and (iii) modified natural or synthetic substances based on a natural product used in traditional medicine.<sup>65</sup>

Pharmaceutical products are often derived from or are modelled on a single natural compound. Therefore, pharmaceutical and chemical researchers often screen a diverse range of plants and/or other life forms in order to detect biological activity and to find the relevant

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<sup>62</sup> Morten Walloe, 'How Will a Substantive Patent Law Treaty Affect the Public Domain for Genetic Resources and Biological Material?' (2005a) 8(3) *Journal of World Intellectual Property* 311-22.

<sup>63</sup> A. Samuel Oddi, 'TRIPS - Natural Rights and a Polite Form of Economic Imperialism' (1996) 29 *Vanderbilt Journal of Transnational Law* 415-65. See also Mgbeoji, *Global Biopiracy: Patents, Plants, and Indigenous Knowledge*, above n 60, 149.

<sup>64</sup> Daniel Gervais, 'Traditional Knowledge & Intellectual Property: A TRIPS-Compatible Approach' (2005) *Spring Michigan State Law Review* 137-54.

<sup>65</sup> Paul Alan Cox, 'The Ethnobotanical Approach to Drug Discovery: Strengths and Limitations' in Ghilleen T. Prance, Derek J. Chadwick and Joan Marsh (eds), *Ethnobotany and the Search for New Drugs. Ciba Foundation Symposium* (1994) 25, 25.

chemical compounds.<sup>66</sup> Leads provided by indigenous peoples on therapeutic properties of plants help to narrow down the number of species of plants for drug development.<sup>67</sup>

Another problem facing indigenous peoples is that the concept of novelty in patent law sometimes operates to disregard traditional knowledge. The problem here is that traditional knowledge is sometimes not considered to form part of the prior art during the examination of the patent applications to determine the novelty of an invention.<sup>68</sup> Reasons for this vary but include the lack of a standard definition of what should be considered part of the prior art for the purpose of granting a patent for a product or process which incorporates traditional knowledge and the difficulty that patent offices have in accessing information on traditional knowledge. Another related problem is the way the concept of novelty is interpreted. The concept of 'prior art' varies between the laws of the various jurisdictions. For instance, national laws may impose an absolute standard of novelty which is based on a broad definition of the relevant prior art, including not only knowledge disclosed in a written form but also orally or by use, known in any way, prior to the date of the application. This standard has been adopted throughout Europe and in most African and Latin American countries.<sup>69</sup> Accordingly, when traditional knowledge forms part of the state of the art at the time of the filing of the patent application, a patent will not be granted as the invention will lack the required novelty. In these countries, indigenous peoples should succeed in arguing that the invention should not have been patented, as the invention was not new when compared with traditional knowledge from which the invention is derived.<sup>70</sup>

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<sup>66</sup> Timothy Swanson, 'The Reliance of Northern Economies on Southern Biodiversity: Biodiversity as Information' (1996) 17(1) *Ecological Economics* 1-4.

<sup>67</sup> Padmashree Gehl Sampath, *Biodiversity Prospecting Contracts for Pharmaceutical Research. Institutional and Organizational Issues in Access and Benefit-Sharing* (Doctoral thesis, University Hamburg, 2003) 45.

<sup>68</sup> Muller, 'The International Debate on Traditional Knowledge as Prior Art in the Patent System: Issues and Options for Developing Countries', above n 2.

<sup>69</sup> The *Convention for the Grant of European Patents* in its Article 54 states that: '(1) An invention shall be considered to be new if it does not form part of the state of the art. (2) The state of the art shall be held to comprise everything made available to the public by means of written or oral description, by use, or in any other way, before the date of filing of the European patent application.' For more information, see <<http://www.european-patent-office.org/legal/epc/e/ar54.html#A54>> at 23 April 2006.

<sup>70</sup> For examples of legal processes of opposition and revocation of patent over traditional knowledge, see Shayana Kadidal, 'Subject-Matter Imperialism? Biodiversity, Foreign Prior Art and the Neem Patent Controversy' (1997) 27(2) *IDEA* 371-72. See also Center for International Environmental Law (Ciel), *Comments on Improving Identification of Prior Art. Recommendations on Traditional Knowledge Relating to Biological Diversity. Submitted to the United States Patent and Trademark Office* (1999) CIEL <<http://www.ciel.org/publications/identificationofpriorart.pdf>> 11 November 2003. See also Michael J. Balick and Paul Alan Cox, *Plants, People, and Culture: The Science of Ethnobotany* Scientific American Library Series (1996) 37, 38.

By contrast, indigenous peoples have less chance of succeeding with the same argument in those countries that adopt a relative standard of novelty. This is because under a relative standard of novelty, knowledge which has been disclosed only orally or by use and has only been disclosed abroad does not constitute part of the prior art in relation to the claimed invention. In other words, a relative standard of novelty allows the exclusion of knowledge that is not registered and documented even if such knowledge has been known and used by communities and peoples from various regions of the world for many years or even centuries. This is the standard adopted in the United States of America and Japan. The basic rationale for the relative novelty approach is that only printed material is readily accessible, whereas oral information or the use of an invention is difficult to ascertain.<sup>71</sup> The validity of such a rationale has been questioned owing to the impact of the relative novelty approach on the appropriation of traditional knowledge. In simple terms, it can be said that the practical negative effect of the relative concept of novelty on traditional knowledge is that it allows a third party to claim products and processes that are already known and used by indigenous peoples. Even though only United States and Japan adopt a relative standard of novelty, the impact of the relative novelty approach is still significant, as these two states issue more than half all patents in the world. The practical implication is that as most traditional knowledge originates outside the United States and Japan and is mostly created and transmitted through practice and oral history it can be assumed that traditional knowledge will not be recognized by as part of the prior art by these States.<sup>72</sup>

A patent which does not meet the substantive patentability criteria for protection can be revoked. The difficulty with regard to the revocation of patents is that the legal processes of opposition and revocation under national laws or in multiple jurisdictions is complicated and expensive. It may not be economically feasible for many aggrieved indigenous peoples or nations to pursue claims through these processes.<sup>73</sup> One particular issue is that to oppose the grant of a patent, detailed written evidence of prior art is required.<sup>74</sup> Indigenous peoples may

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<sup>71</sup> Cynthia M. Ho, 'Disclosure of Origin and Informed Consent for Applications of Intellectual Property Rights Based on Genetic Resources: A Technical Study of Implementation Issues' (United Nations Convention on Biological Diversity. UNEP/CBD/WG-ABS/2/INF/2, 2003) para 4.1.12.

<sup>72</sup> Rosemary J. Coombe, 'The Recognition of Indigenous Peoples' and Community Knowledge in International Law' (2001) 14 *St Thomas Law Review* 275-79.

<sup>73</sup> Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights of Indigenous Peoples' (TWN Third World Network, 2003) 28.

<sup>74</sup> *PCT International Search Guidelines*, [31.1(b)], (1998). According to 31.1 (b) of the PCT International Search Guidelines written disclosure is the essential condition for the material information to become significant prior art for the purposes of an international search. See also Kembrew Mcleod, *Owning Culture: Authorship, Ownership, and Intellectual Property Law*, Popular Culture & Everyday Life (2001) 176.

have difficulties, for example, in presenting written evidence of prior art, as much traditional knowledge is customarily transmitted orally and is not normally reduced to a written or fixed form.<sup>75</sup>

### **III THE USE OF TRADE, COLLECTIVE, AND CERTIFICATION MARKS, GEOGRAPHICAL NAMES, COPYRIGHT, PLANT BREEDERS' RIGHTS AND DATABASES**

This part provides a brief introduction to the essential features of trademarks, collective, and certification marks, geographical indications and designation of origin, copyright, plant breeders' rights and databases.

#### **A *Trade, Certification, and Collective Marks***

The WIPO notes that, in general, a trademark performs four main functions related to the distinguishing of marked goods or services, their origin, their quality and their promotion in the market place.<sup>76</sup> The first function of a trademark is to distinguish the products or services of an enterprise from products or services of other enterprises. It means that trademarks facilitate the choice to be made by the consumer when buying certain products or making use of certain services. The second function of a trademark is to refer to a particular enterprise from which the products or services originate, i.e. give an indication as to the origin of the goods or services for which the mark is used. Thus, trademarks distinguish products or services from one source from products or services from other sources, even though they are similar. The third function of trademarks is to refer to a particular quality of the products or services for which the trademark is used. This function is not always recognized. In fact, the quality function of trademarks is one of the most controversial issues of trademark law. The fourth function of trademarks is to promote the marketing and sale of products and the marketing and rendering of services.

Any sign, or any combination of signs - such as words including personal names, letters, numerals, figurative elements and combinations of colors as well as any combination of such signs - capable of distinguishing the goods or services of one business from that of another in

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<sup>75</sup> WIPO/GRTKF/IC/8/8, *Recognition of Traditional Knowledge within the Patent System*, above n 47.

<sup>76</sup> World Intellectual Property Organization, Roundtable on Intellectual Property and Indigenous Peoples, WIPO/INDIP/RT/98/3 Add (1998). See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, *Consolidated Analysis of the Legal Protection of Traditional Cultural Expressions*, 45.

the marketplace, shall be eligible for registration as trademarks.<sup>77</sup> Most countries require that trademarks for which protection is desired must be registered with a government authority. The legal protection provided to a trademark consists essentially of making it illegal for any entity other than the owner of the trademark to use the trademark or a sign similar to it, at least in connection with goods for which the trademark was registered or with goods similar to such goods.

Trademarks has been used by indigenous peoples from different countries, such as Canada, Australia, Mexico, New Zealand, to identify ranges of traditional goods and services, such as traditional art, and artwork to food products, clothing, tourist services, enterprises, cultural festivals, soaps, perfumery, essential oils, body lotions and other natural resources products.<sup>78</sup> There is also the situation where trademarks are registered in order to prevent improper utilization of indigenous symbols or names by non-indigenous. This is because, as it was mentioned in Chapter 2, there are several examples of the use by non-indigenous persons and companies of indigenous peoples traditional words, designs, names, and other distinctive symbols and signs and registering them as trademarks. Thus, the use of indigenous signs as trademarks may give consumers the impression that such products are indigenous-made or have the qualities that are inherent to the indigenous cultures when they do not. Hence, some countries are establishing mechanisms to prevent the registration by non-indigenous of indigenous and traditional signs and symbols as trademarks.<sup>79</sup>

Despite these examples and the potentially permanent duration of the protection and the use of collective and certification marks, indigenous peoples argue that trademark system does not meet their needs because, even though it distinguishes the products for consumers and vis-à-vis competitors, it does not protect the product and the knowledge (itself) on which the product is based.<sup>80</sup>

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<sup>77</sup> WIPO, *Consolidated Analysis of the Legal Protection of Traditional Cultural Expressions*, 45.

<sup>78</sup> Ibid 46.

<sup>79</sup> WIPO, *Consolidated Analysis of the Legal Protection of Traditional Cultural Expressions*, 46.

Ibid 45.

<sup>80</sup> Brad Sherman and Leanne Wiseman, "Towards an Indigenous Public Domain?" in B. Hugenholtz (ed.), *Intellectual Property and the Public Domain* (2005) 259, 277. See also J. Vogel (ed.), *The Biodiversity Cartel: Transforming Traditional Knowledge into Trade Secrets* (2000) . See also Graham Dutfield, *Sharing the Benefits of Biodiversity: Access Regimes and Intellectual Property Rights* (1999) Center for International Development and Belfer Center for Science and International Affairs, Harvard University, <<http://www2.cid.harvard.edu/cidbiotech/dp/discussion6.htm>> at 21 January 2006



## B      *Geographical Names*

The geographical names for which systems of protection have been introduced fall into three categories: indications of origin, geographical indications and appellations of origin. Geographical indication is defined in Article 22.1 of the TRIPs Agreement as an indication which identifies a good as originating in the territory of a Member, or a region or locality in that territory, where a given quality, reputation or other characteristic of the good is essentially attributable to its geographical origin.<sup>81</sup> Any sign or combination of signs, in any form whatsoever, shall be eligible to be a geographical indication.

There are some similarities between the concept of geographical indications, as defined by the TRIPs Agreement, the concept of appellation of origin, as defined by the Lisbon Agreement for the Protection of Appellations of Origin and their International Registration, 1979, and as referred to in the Paris Convention, and which refers to any expression or sign used to indicate that a product or service originates in a country, region, or specific place. The difference, it follows, between geographical indication as used in the TRIPs Agreement, and appellations of origin, as used in the Paris Convention, as an indication of source, is that the former requires a quality link between the product and its area of production, as the latter does not.

It should be noted that, despite the fact that the concepts of origin and protected origin are more widely accepted for wine, because of the link between wine production and territory, many States are recognizing the same link for agri-food products such as cheese or fresh and cooked meats.<sup>82</sup>

Although the above-mentioned characteristics and examples of schemes of geographical names and indications seem appealing as they are useful as a mechanism to protect some traditional products or crafts if particular characteristics of such products can be attributed to a particular geographical origin, it should be mentioned that they are not capable of providing

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<sup>81</sup> Alongside with the definition adopted by *TRIPs Agreement*, there are a number of different situations, with countries or country groups having various definitions and systems of protection, which may further differ from one product to another. See Organisation De Coopération Et De Développement Economiques and Organisation for Economic Co-Operation and Development, 'Appellations of Origin and Geographical Indications in OECD Member Countries: Economic and Legal Implications. Working Party on Agricultural Policies and Markets of the Committee for Agriculture Joint Working Party of the Committee for Agriculture and the Trade Committee. COM/AGR/APM/TD/WP(2000)15/FINAL' (2000) <[www.oecd.org/dataoecd/59/51/23526073.doc](http://www.oecd.org/dataoecd/59/51/23526073.doc)> at 23 January 2006.

<sup>82</sup> Ibid, para 77.

protection to the knowledge itself on which the product is based.<sup>83</sup> Thus, it can be concluded that these frameworks do not meet the need of indigenous peoples with regard to the protection of their traditional knowledge.

### **C      *Copyright***

Copyright protection is available to all literary, scientific and artistic creations, such as poems, novels, music, paintings, cinematographic works, etc, as referred to in the Berne Convention for the Protection of Literary and Artistic Works, 1971 (The Berne Convention). The list of works subject of the protection mentioned in the Berne Convention is not limitative.<sup>84</sup> The Berne Convention allows States Parties to grant copyright to oral works. However, the copyrights law of most countries requires that a work be fixed in material or other form before being eligible for protection.

Protection arises automatically upon the creation of the work. Thus, there is no need for registering copyright. In addition, protection does not depend on the quality of the work. The protection provided by copyright grants to the author the economic rights to prevent or authorize the reproduction, performance, broadcasting, translation and adaptation of the work. It also grants the moral rights to claim authorship of the work and to object to any distortion, mutilation or other modification of, or other derogatory action which would be prejudicial to the author's honor or reputation. The moral rights cannot be transferred from the author to another person or entity. In general, protection subsists for 50 years following the author's death. Some countries have extended this term to 70 years.

Many elements of traditional knowledge, such as music and songs, stories, ceremonies and rituals, carving, pottery, mosaic, basket weaving, can be the subject matter of copyright protection. However, it has been suggested that copyright law is limited in its potential for protecting traditional knowledge associated with genetic resources because:

- (i) while copyright protects only original works, traditional knowledge, in many cases, is considered to be part of the public domain - as it was mentioned in Chapter 3 of this

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<sup>83</sup> United Nations on Environment Programme, Convention on Biological Diversity and Conference of the Parties, *Interrelation of Access to Genetic Resources and Disclosure Requirements in Applications for Intellectual Property Rights: Report of the World Intellectual Property Organization (WIPO)*, 8th mtg, [Para. 13], UNEP/CBD/COP/8/INF/7, (2006). See also Dutfield, *Sharing the Benefits of Biodiversity: Access Regimes and Intellectual Property Rights*, above n 80, 48.

<sup>84</sup> WIPO, *Consolidated Analysis of the Legal Protection of Traditional Cultural Expressions*, above n 76, 35.

thesis. Thus, the concepts of originality and public domain adopted by copyright law may be incompatible with the way that traditional knowledge is owned, managed and transferred in and between indigenous peoples;

- (ii) copyright requires that the creator or creators be identifiable. As it was shown in Chapter Two, in many cases, it is difficult, if not impossible, to identify a single creator or creators of traditional knowledge because they are communally created and held or because the creators are unknown;
- (iii) indigenous people's conception of ownership is incompatible with the notion of ownership within copyright regime. This is because, while copyright confers exclusive private rights in individuals, the recognition of individual rights over traditional knowledge is often communally determined,<sup>85</sup> and the use of such knowledge is bounded by the laws of their community; thus the traditional custodian or caretaker does not have the right to use such knowledge in a free or unconstrained manner;
- (iv) in some countries, the fixation requirement in copyright prevents intangible and oral expressions of culture and knowledge from being protected, unless they are fixed in some form or media.

While copyright protection is possible for certain types of traditional knowledge, it is not generally viewed as a relevant mechanism to protect traditional knowledge that is not a traditional cultural expression. For example, it is not an adequate mechanism to protect traditional language used to describe the genetic resources, or its usage. In addition, it should be mentioned that the protection provided by copyright does not meet the need to protect traditional knowledge in perpetuity.

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<sup>85</sup> Johanna Gibson, *Community Resources: Intellectual Property, International Trade and Protection of Traditional Knowledge. (Globalization and Law)* (2005) 41.

## **D      *Plant Breeders' Rights - Convention for the Protection of New Varieties of Plants***

A framework for intellectual property protection of plant varieties, the Convention for the Protection of New Varieties of Plants ('UPOV Convention')<sup>86</sup> was adopted in 1961.<sup>87</sup> Later, in 1972 and 1978, the Convention was revised with very few changes in the substantive provisions. Further, more substantial changes were established by the 1991 revision of the UPOV Convention. The rights defined under UPOV are known as 'Plant Variety Rights' or 'Plant Breeders' Rights'.

The amendment to the UPOV Convention in 1978 allowed non-European nations to join the Convention. The UPOV 1978 revision has also recognized property rights over varieties of selected species listed as resulting from human intervention in breeding or selection, since such plants are clearly (i) distinguishable from any other variety whose existence is a matter of common knowledge; (ii) novel, (i.e. in terms of trade or commercialization, meaning that they have not been offered for sale, with the agreement of the breeder); (iii) sufficiently homogeneous with regard to the particular feature of their sexual reproduction or vegetative propagation (UPOV 1978) or uniform in their relevant characteristics (UPOV 1991); and (iv) stable (i.e., remain unchanged after repeated reproduction or propagation). Plant Breeders' Rights allow the owners the right to prevent others from producing these plants for commercial purpose, offering for sale or marketing of the reproductive or vegetative propagating material.<sup>88</sup> The UPOV 1978 limited the scope of protection to the commercial use, offering for sale and marketing of reproductive or vegetative propagating material of the variety. The protection shall be granted (according to national legislation) for a minimum period of 18 years for vines, forest trees, fruit trees and ornamental trees, and 15 years for all other species.

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<sup>86</sup> *The International Convention for the Protection of New Varieties of Plants* (the "UPOV Convention") was signed in Paris in 1961 and entered into force in 1968. It was revised in Geneva in 1972, 1978 and 1991. The 1978 Act entered into force in 1981, and the 1991 Act entered into force in April 1998. The text of the 1961 Convention is available at <http://www.upov.org/en/publications/conventions/index.html>. For more information on plant breeders' rights, see Van Overwalle G., 'Patent Protection for Plants: A Comparison of American and European Approaches' (1999) *IDEA-Journal of Law and Technology* 143-94. By 2005, 32 countries has ratified the UPOV 1991, 25 the 1978 version and 2 still operating under older versions.

<sup>87</sup> The Union for Protection of New Varieties of Plants, an independent intergovernmental organization, was established in order to support the implementation of the harmonized system and to expand it to more crops and countries. For more information of the historical development of IPR system for plant varieties see Rob Tripp, Derek Eaton and Niels Louwaars, 'Intellectual Property Rights. Designing Regimes to Support Plant Breeding in Developing Countries. Report No 35517-GLB' (The International Bank for Reconstruction and Development (The World Bank), 2006) 3. at <[http://siteresources.worldbank.org/INTARD/Resources/IPR\\_ESW.pdf](http://siteresources.worldbank.org/INTARD/Resources/IPR_ESW.pdf)> at 23 June 2006.

<sup>88</sup> *UPOV Convention Act 1978*, above n 86, art 5.

The UPOV Convention was further revised in 1991 to allow double protection.<sup>89</sup> Besides the *sui generis* regime granted by UPOV 1978, national governments can also provide patents for plants.<sup>90</sup> In addition, the UPOV 1991 extended the protection to all plants species, as well extended the scope of the protection to all plant genera and species and the term of duration of the breeders' rights to 25 years for vines, forest trees, fruit trees and ornamental trees, and 20 years for all other species. It increased the number of acts for which prior authorization of the breeders is required, including rights to prevent others from producing or reproducing, conditioning for the purpose of propagation, offering for sale, selling or other marketing, importing, exporting, or stocking the claimed invention or a component of the invention.<sup>91</sup> Such acts and rights are extended in order to encompass not only the reproductive or vegetative propagating material as with the UPOV 1978, but also harvested material obtained through the use of propagating material, and essentially derived varieties. The conditions for patentability of plants include the novelty (in term of knowledge), non-obviousness and industrial application criterion, as well as the fulfillment of the other three previously named criteria of distinctiveness, uniformity and stability.<sup>92</sup>

As with patents, it may be difficult for indigenous peoples to obtain protection for their landraces or traditional cultivars under UPOV. In most cases, this happens because landraces or traditional cultivars do not meet the distinctiveness, sufficient uniformity, stability and novelty criteria required for granting of Breeders' Rights under the UPOV Convention.<sup>93</sup> It is important to emphasize, however, that some countries, such as India and Thailand, have adopted alternative forms of intellectual property protection in order to provide legal protection to traditional or local cultivars, and also to ensure benefit-sharing and compensation to their holders.<sup>94</sup>

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<sup>89</sup> *UPOV Convention, Act 1991*, at <<http://www.upov.org/en/publications/conventions/index.html>> at 23 March 2005.

<sup>90</sup> Currently, patent for plant variety is allowed in Australia and Japan.

<sup>91</sup> *UPOV Convention Act 1991*, above n 89, art 14.

<sup>92</sup> Further details on differences between protection systems granted by different UPOV's versions can be found in Tripp, Eaton and Louwaars, 'Intellectual Property Rights. Designing Regimes to Support Plant Breeding in Developing Countries', above n 87, 7.

<sup>93</sup> Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity: The Case of Seeds and Plant Varieties* (1999) IUCN <<http://www.iucn.org/themes/pbia/wl/docs/biodiversity/sbstta4/ipr.pdf>> 23 September 2006.

<sup>94</sup> See *The Protection of Plant Varieties and Farmers' Rights, 2001*, (India) ('Act No. 52') . See also *Plant Varieties Protection Act, B.E. 2,542, 1999*, (Thailand) (44), ('Plant Varieties Protection Act, B.E. 2,542') <[http://www.grain.org/brl\\_files/thailand-pvp-1999-en.doc](http://www.grain.org/brl_files/thailand-pvp-1999-en.doc)> at 4 April 2006. Breeders are required to disclose in their application for registering new variety information regarding indigenous or local communities' use of genetic material used in the breeding program. See Section 18 (1) (e) and also Stephen B. Brush, 'Farmers' Rights and Protection of Traditional Agricultural Knowledge. CAPRI Working Paper No 36' (International Food Policy Research Institute, 2005) 3.

## E      *Databases*

Traditional knowledge has been documented and databases have been created (mainly in India, Peru and South Africa) as a mechanism to conserve and protect traditional knowledge.<sup>95</sup> Further, some indigenous peoples are also themselves using databases to document their knowledge, for example, the Tulatip people. However, the majority of such databases are not under the control of indigenous peoples, having been managed by research institutions, national archives and others. Further, as Tobin comments much of this information was collected without any specific agreement with indigenous peoples,<sup>96</sup> because the creators felt that the knowledge was part of the public domain.

Generally, a registry or other database as a whole can be protected under the copyright system. In some countries, software or hardware that is employed to create or structure a database might be patentable. As such, protection of databases may not mean protection of its contents. However, legal protection should be available not only for database technologies, but also for the contents or the data catalogued within a database.<sup>97</sup> To the extent that the contents of a database constitute original and creative expressions, independent of their inclusion in the database, they may be subject of copyright protection. Similarly, data disclosing new and useful inventions not already in the public domain would be protected by patent. Thus, much traditional knowledge contained in a registry or database would not qualify for protection. A *sui generis* regime to protect databases contents that were not protectable under copyright was adopted in the European Union. Protection is available if the owner can demonstrate that there had been qualitatively and/or quantitatively a substantial investment in either the obtaining, verification or presentation of the contents of that database

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<sup>95</sup> The WIPO has inventoried the existence of several journal and databases containing traditional knowledge data. See World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Inventory of Traditional Knowledge-Related Periodicals*, 3rd sess, WIPO/GRTKF/IC/3/5, (2002). See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Inventory of Existing Online Databases Containing Traditional Knowledge Documentation Data*, 3rd sess, (2002).

<sup>96</sup> See also Brendan Tobin, 'Regulating Access and Benefit Sharing in the Andes: Exploring the Challenges of ABS Governance' (Paper presented at the Mountain Forum: A Global Network for Mountain Communities, Environment and Sustainable Development, 2006).

<sup>97</sup> David R. Downes and Sarah A. Laird, *Community Registries of Biodiversity-Related Knowledge. The Role of Intellectual Property in Managing Access and Benefit* (1999) UNCTAD Biotrade Initiative <<http://www.ciel.org/publications/communityregistries.pdf>> 10 December 2003.

to prevent extraction and/or re-utilization of the whole or of a substantial part, evaluated qualitatively and/or quantitatively, of the contents of that database.<sup>98</sup>

The potential and limitations of databases and registers for the protection of traditional knowledge have also been comprehensively examined by United Nations University Institute of Advanced Studies (UNU-IAS).<sup>99</sup> This thesis endorses the UNU-IAS's conclusion that in the cases in which the main aim is to conserve and disseminate such knowledge for wider public access, the use of databases and registers does improve the availability, searchability and exchangeability of traditional knowledge, as prior art in the processing of patent applications and thereby preventing its misappropriation. Thus, databases and registers may be considered an important mechanisms for the defensive protection of traditional knowledge. However, in the absence of positive rights or absence of recognition of databases and registers status under national law, their efficacy is limited,<sup>100</sup> and the disclosure of traditional knowledge could facilitate the misappropriation of traditional knowledge that the indigenous peoples wish to protect, without guaranteeing complete protection and benefit-sharing for the holders of the knowledge whatsoever. This conclusion is further supported by developing countries and indigenous peoples, and several scholars.<sup>101</sup>

In spite of the benefits of creating traditional knowledge-databases there are many concerns that affect indigenous peoples, such as the matter of access and property. Another relevant concern is the need to ensure that the creation of a database is carried out with consideration for the existing intellectual property regime, in order to adequately protect the interest of the indigenous peoples and to avoid the placement of the knowledge in the public domain, as this

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<sup>98</sup> Ibid.

<sup>99</sup> Institute of Advanced Studies (Unu-Ias) United Nations University, 'The Role of Registers and Databases in the Protection of Traditional Knowledge. A Comparative Analysis' (2004) available online at <[http://www.ias.unu.edu/binaries/UNUIAS\\_TKRegistersReport.pdf](http://www.ias.unu.edu/binaries/UNUIAS_TKRegistersReport.pdf)> at 14 May 2006.

<sup>100</sup> UNU-IAS, 'The Role of Registers and Databases in the Protection of Traditional Knowledge. A Comparative Analysis', above n 99. The UNU-IAS Report concluded that databases and registers of traditional knowledge can amongst other things, serve to: (i) to promote documentation, preserve and maintain traditional knowledge; (ii) to provide a means to assist patent search procedures and identify prior art; (iii) to identify communities which might be entitled to benefit-sharing, and assign exclusive rights; (iv) to provide the means for recording the existence of traditional knowledge over which positive rights have been recognised under national or customary law, and (v) to serve as the mechanism for obtaining protection of traditional knowledge through sui generis database protection.

<sup>101</sup> Graham Dutfield, 'Legal and Economic Aspects of Traditional Knowledge' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (2005) 495, 519. See also Correa, *Traditional Knowledge and Intellectual Property. Issues and Options Surrounding the Protection of Traditional Knowledge* See also Rodrigo de la Cruz, 'Vision de los Pueblos Indigenas en el Contexto de las Decisiones sobre ABS y 8(j): Impacto de las Decisiones de la CBD/COP sobre el Mandato de la IGC de la OMPI' (COICA, ICTSD, IUCN, 2004) 9.

would affect indigenous peoples' rights to apply for patent, copyright or other form of intellectual property protection.<sup>102</sup>

#### IV SUMMARY OF FINDINGS

This chapter has examined whether the patent regime is suitable to protect traditional knowledge. It has been argued that in most cases traditional knowledge does not fulfill the requirements of patentability. There are numerous difficulties in trying to fit traditional knowledge within the requirement for patent protection. Firstly, traditional knowledge is not considered to be an invention because it often relates to the use of genetic resources in their natural state. Secondly, due to the dynamic character of traditional knowledge, it may be difficult to demonstrate a single act of the creation of its invention. Thirdly, patent regimes protect individual inventors, not collective entities such as indigenous peoples. So, the third problem is the lack of individually attributable inventorship. Fourthly, traditional knowledge may not be considered to be novel for the purposes of a patent protection precisely because of the transgenerational and collective characteristics of traditional knowledge, even though only particular persons may know to practice it. Fifthly, indigenous peoples may not be able to demonstrate that their knowledge involves an inventive step. Indigenous peoples may also face problems in demonstrating that their new knowledge is not obvious or that the new knowledge is different from the previous knowledge. Sixthly, traditional knowledge itself does not fulfill the requirement for industrial application. It needs to be embodied as a product or process to do so. Here, there is also additional problem such as the unwritten form of much traditional knowledge. In addition, the current concept of prior art within the patent regime undermines indigenous rights over their traditional knowledge. Another problem identified in this chapter is that the patent regime may not provide appropriate protection for traditional knowledge because it does not take into account indigenous customary practices of sharing traditional knowledge, nor does it recognize indigenous systems of ownership.

This chapter has also examined the use that non-indigenous people makes of patents to protect traditional knowledge based-products and processes. It has been mentioned that one concern in this regard relates to the use of traditional knowledge associated with medicinal properties of genetic resources by pharmaceutical companies to create traditional knowledge-based

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<sup>102</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions, *Plan of Action on and Implementation of Mechanism and Measures to Address the Underlying Causes of the Decline of Traditional Knowledge, Innovations and Practices*, 5th mtg, para 41, UNEP/CBD/WG8J/5/3/Add. 1 (2007).



medicinal drugs. Such medicinal drugs can be similar to or different from the traditional knowledge or resources used as a source of information. In some cases, a synthetic compound derived from or inspired by lead compounds traditionally used by indigenous peoples, is created and protected without any acknowledgement of the contributions made by traditional knowledge. The second concern is the impact that the relative novelty approach has on the appropriation of traditional knowledge. The problem here arises because traditional knowledge is not considered to be part of the prior art during the examination of patent applications. As a result, patents have been granted for inventions that are obvious, mere adaptations, or applications of existing traditional knowledge.

Finally, this chapter provides a brief introduction to the essential features of trademarks, collective, and certification marks, geographical indications and designation of origin, plant breeders' rights and databases. One conclusion is that trademarks, collective, and certification marks, geographical indications and designation of origin are useful as mechanisms to protect some products based on traditional knowledge. However, they are not capable of protecting the knowledge itself on which the product is based. Another conclusion is that it may be difficult for indigenous peoples to obtain protection for their landraces or traditional cultivars under UPOV because, in most cases, landraces or traditional cultivars do not meet the distinctiveness, sufficient uniformity, stability and novelty criteria required for granting of Breeders' Rights under the UPOV Convention. As regards databases, it was concluded that databases are useful as a mechanism to protect traditional knowledge from unwanted property rights fielded by non-indigenous person and companies and also to conserve and promote such knowledge. In addition, as part of a legislative system, databases can also be an important mechanism for the assertion of rights over traditional knowledge and management of such knowledge. Thus, databases are best employed as part of a framework designed to protect traditional knowledge property rights.

## CHAPTER 6

### PROPOSALS FOR THE PROTECTION OF TRADITIONAL KNOWLEDGE AND COMPENSATION FOR INDIGENOUS PEOPLES FOR THE USE OF THEIR KNOWLEDGE

#### I INTRODUCTION

As a significant number of developing countries and indigenous peoples have found the existing intellectual property regimes to be inadequate to govern the access to and protection of traditional knowledge, there is firm consensus that a *sui generis* regime would be a more satisfactory option.<sup>1</sup> Several promising new *sui generis* models have been developed to protect traditional knowledge and to provide compensation to indigenous peoples for the use of traditional knowledge. These models are intended to assist countries, indigenous peoples and local communities to develop legal systems which will adequately protect traditional knowledge.

In this chapter, some of the more prominent alternative mechanisms are critically evaluated. These are the *sui generis* regimes of Traditional Resources Rights (TRR); a Territory-based Approach; a Community Intellectual Rights Regime (CIR-Regime); a Traditional Intellectual Property Rights (TIP rights); a Property Rights in Traditional Biocultural Contribution; a Collective Bio-Cultural Heritage; an Integrated System for the Protection of Traditional Knowledge. These also include the compensatory regimes of Indigenous Medicinal Knowledge Regime (IMK-Regime); a Community Knowledge Fund; and a Compensatory Liability Regime (CLR). These models were chosen because they have been considered to be the more outstanding alternative legal regimes suitable to protect traditional knowledge. In addition, they were chosen because they reflect the diversity that can potentially be used for protecting traditional knowledge.

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<sup>1</sup> *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples*, See also United Nations Environment Programme and Convention on Biological Diversity, *The Impact of Intellectual Property Rights Systems on the Conservation and Sustainable Use of Biological Diversity and on the Equitable Sharing of Benefits from its Use. A Preliminary Study. Note by the Executive Secretary*, 3rd mtg, Buenos Aires, Argentina, [Para. 9], UNEP/CBD/COP/3/22, (1996).

## II MODELS OF SUI GENERIS REGIMES FOR THE PROTECTION OF TRADITIONAL KNOWLEDGE

### A *Traditional Resources Rights (TRR)*

The first and most well-known scheme which was proposed to protect traditional knowledge is the so-called the Traditional Resources Rights (TRR), a system which has been championed by Posey and Dutfield. TRR emerged as a concept of the Working Group on Traditional Resource Rights which was established in 1990 by the Global Coalition for Bio-Cultural Diversity.<sup>2</sup>

Posey and Dutfield argue that knowledge and resources, including plants, animals, and other material objects which may have intangible (e.g., sacred, ceremonial, heritage, or aesthetic) qualities are central to the functional maintenance of identity of indigenous peoples. Accordingly, they argue that control over these resources is of central concern in indigenous peoples' struggle for self-determination.<sup>3</sup> According to Posey, the protection of traditional knowledge will only be adequate if traditional knowledge is conserved, maintained and enhanced in *in situ* conditions, as part of the land and culture of indigenous peoples.<sup>4</sup> Posey and Dutfield argue that the existing intellectual property regime is generally inappropriate and inadequate for protecting the rights and resources of local communities, because under this regime the protection is purely economic, whereas the interests of indigenous peoples are only partly economic and are linked to the broader issues of self-determination.<sup>5</sup>

Posey and Dutfield argue that the recognition and respect of human rights of indigenous peoples, including the right to development, environmental conservation and the preservation of biological diversity are mutually supportive. Hence, the concept of TRR was proposed as a

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<sup>2</sup> The mission of the Working Group on Traditional Resource Rights mission was to unite indigenous peoples, scientific organizations, and environmental groups to implement a forceful strategy for the use of traditional knowledge, involvement of local peoples in conservation and development strategies, and implementation of alternative, people-centred conservation models. For more information see, See also Darrell A. Posey and Graham Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities* (1996) intro.

<sup>3</sup> Darrell A. Posey, 'Indigenous Peoples and Traditional Resource Rights: A Basis for Equitable Relationships?' (Paper presented at the Workshop on Indigenous Peoples and Traditional Resources Rights, University of Oxford, The Green College Centre for Environmental Policy & Understanding, 28 June 1995), See also, Darrell A. Posey, *National Law and International Agreements Affecting Indigenous and Local Knowledge: Conflict or Conciliation?* APFT <[http://lucy.ukc.ac.uk/Rainforest/SML\\_files/Posey/posey\\_1.html](http://lucy.ukc.ac.uk/Rainforest/SML_files/Posey/posey_1.html)> at 25 January 2006.

<sup>4</sup> Darrell A. Posey, *Traditional Resource Rights: International Instruments for Protection and Compensation for Indigenous Peoples and Local Communities* (1996) 64.

<sup>5</sup> Posey and Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities*, above n 2, Chapter 9.

means of recognizing the symbiotic connection between cultural and biological diversity. In this sense, the use of the term 'property' was avoided by the TRR scheme, because property, for indigenous peoples, frequently has intangible, spiritual manifestations. Where the term 'property' is applied to traditional knowledge, there is a conceptual disjunction, as although traditional knowledge is intrinsically worthy of protection, it is inalienable and not susceptible to individual ownership.<sup>6</sup> Instead, the term 'traditional' was adopted to reflect the special practices, beliefs, customs, knowledge, and cultural heritage of indigenous peoples and local communities. The term 'resource' is used in its broadest sense to refer to all knowledge and technology, aesthetic and spiritual qualities, tangible and intangible sources that are deemed to be necessary to ensure healthy and fulfilling lifestyles for present and future generations. In turn, the term 'rights' is used as a means to reflect the basic and inalienable guarantee that all human beings and the collective entities in which they live, need to achieve and maintain the dignity and well-being of themselves, their predecessors, and their descendants.<sup>7</sup>

TRR forms a framework of principles and rights to serve a number of purposes. The primary goals of TRR are to buttress and support indigenous peoples' right to self-determination and the right to safeguard their culture in its broadest sense.<sup>8</sup> In addition, TRR covers a broad range of rights to protect discrete areas such as knowledge, biogenetic resources, cultural property, folklore, and landscapes.<sup>9</sup> Posey argues that an underlying premise of TRR is to prioritize the ability of indigenous peoples to control the access over, and receive benefits from, their traditional resources. Thus, TRR also form the basis for the creation of an alternative *sui generis* system.<sup>10</sup>

The TRR scheme is based both on current intellectual property concepts and also on an existing bundle of rights. These rights are already recognized and supported by international legally-binding conventions, non-legally binding documents and contracts, agreements and

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<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Ibid. See also Susette Biber-Klemm, 'Biotechnology and Traditional Knowledge: in Search of Equity' (2000) 2(1-2-3) *International Journal of Biotechnology* 85-96. Biber-Klemm states that TRR can be understood as a framework concept for developing multiple systems and solutions.

<sup>9</sup> Ibid.

<sup>10</sup> Convention on Biological Diversity, United Nations on Environment Programme, *Traditional Knowledge and Biological Diversity*, Workshop on Traditional Knowledge and Biological Diversity [Para 84] UNEP/CBD/TKBD/1/2, (1997).

protocols. TRR is grounded in basic human rights which include the rights to development, environmental integrity, religious freedom, land and territory, privacy, prior informed consent and full disclosure, farmers' rights, intellectual property rights, neighboring rights, cultural property rights, cultural heritage and rights of customary law and practice.<sup>11</sup> In other words, the concept of TRR is sufficiently comprehensive to include the whole spectrum of rights concerning self-determination of indigenous peoples, including rights over traditional knowledge.

One of the main advantages of the TRR scheme is that it recognizes that the protection of traditional knowledge requires a set of interrelated legal rights, as well as a framework grounded in social, economic and political consideration. Another advantage is the emphasis given to the recognition and respect of indigenous peoples' rights to self-determination, as a means of strengthening their ability to freely determine their political status and pursue their economic, social, and cultural development. Yet another advantage is that TRR may be implemented locally, nationally and internationally.

However, one disadvantage of the TRR scheme is that it does not deal with the problem where traditional knowledge is in the public domain. Another difficulty is that the legal mechanism and structure to implement and operate the TRR system are not expressly delineated.

### **B      *Territory-based Approach***

Another alternative approach was proposed by Greene, who suggests that the issues of traditional knowledge and bioprospecting should be approached under the notion of a right to territory, rather than under intellectual property or Traditional Resources Rights (TRR) which were championed by Posey and Dutfield.<sup>12</sup> Greene argues that, despite being based on bundles of basic rights, the TRR approach is still market-oriented. That is to say, TRR still relies on a utilitarian rationale, as it has converted all the elements and aspects of indigenous culture into exploitable subject-matter.<sup>13</sup> According to Greene one of the key aspects of traditional knowledge is that it incorporates a sense of sacredness, ritual and religion. Greene

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<sup>11</sup> Posey, 'Indigenous Peoples and Traditional Resource Rights: A Basis for Equitable Relationships?', above n 3.

<sup>12</sup> See [II.A] of this chapter for general information about Traditional Resources Rights (TRR).

<sup>13</sup> Shane Greene, 'Intellectual Property, Resources, or Territory? Reframing the Debate over Indigenous Rights, Traditional Knowledge, and Pharmaceutical Bioprospection' in Mark Philip Bradley and Patrice Petro (eds), *Truth Claims: Representation and Human Rights* (2002) 229-44.

argues that such knowledge should not be considered to be alienable, as are other material resources such as oil or wood.

Greene suggests that the *Aguaruna-ICBG* case<sup>14</sup> demonstrates that indigenous peoples should not be seen or treated as a homogenous collective.<sup>15</sup> He also argues that indigenous peoples' internal divisions make it difficult to determine which persons or institutions can be considered legitimate representatives of their interests and when - and in what context- this might occur.<sup>16</sup> Further, the internal divisions and varying interests conflict the notion of collective ownership of traditional knowledge, just as they conflict with attempts to have indigenous intellectual property rights recognized as collective rights.<sup>17</sup>

Greene's proposal is based on the premise that without a definable and defensible territory, indigenous peoples and their culture are particularly vulnerable.<sup>18</sup> As a result, he argues that rights to territory should take precedence over rights to traditional knowledge. Greene considers that the territorial approach should encourage the phrasing of projects dealing with traditional knowledge in terms of access to territory rather than to knowledge.<sup>19</sup> In addition, such approach is likely to promote a stronger sense of political integrity and consistency for indigenous peoples. It should also strengthen the capacity of indigenous peoples to decide whether any aspects or elements of their culture may or may not be the subject of access or the appropriation by third persons, or even of the processes of commercialization. This means that indigenous peoples might, with good reason, decide not to permit certain elements of their culture to be used by outsiders. This approach, he argues, could also be a worthwhile method for preserving the values associated with local cultures.<sup>20</sup>

This thesis, in part, supports Greene's assertion that the issue of territoriality should be considered fundamental to indigenous interests.<sup>21</sup> Certainly, where indigenous peoples are recognized as the legal owners or occupiers of lands, they can rely on trespass laws to keep outsiders off their land. In addition, it is also acknowledged that indigenous peoples' rights

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<sup>14</sup> Ibid 249. For more information about the agreement between the Aguaruna and ICBG see, Shane Greene, 'Indigenous People Incorporated? Culture as Politics, Culture as Property in Pharmaceutical Bioprospecting' (2004) 45(2) *Current Anthropology* 211-14.

<sup>15</sup> Greene, 'Intellectual Property, Resources, or Territory? Reframing the Debate over Indigenous Rights, Traditional Knowledge, and Pharmaceutical Bioprospection', above n 13, 242 and 245.

<sup>16</sup> Ibid 245.

<sup>17</sup> Ibid 243.

<sup>18</sup> Ibid 244.

<sup>19</sup> Ibid 244.

<sup>20</sup> Ibid 245.

<sup>21</sup> Ibid 245.

over their land or territory are vital to their survival and the survival and integrity of their culture and knowledge.

However, the territorial approach offers little help in protecting traditional knowledge, if indigenous peoples are not recognized as owners of such resources. Efforts and achievement of recognition and granting indigenous peoples' rights over territory and resources within their lands, especially genetic and biological resources, would probably involve a number of complementary measures, at a national level. Many of them would be outside the field of intellectual property. As a result, the process of recognition of indigenous peoples' rights over traditional knowledge would be more difficult and demand more time and involvement than could be expected if the protection of traditional knowledge were treated separately.

A territory-based approach would also provide indigenous peoples with the ability to control access to biological resources (as tangible goods). Conversely, once biological resources have been accessed, a territory-based approach does not provide any mechanism to control access to genetic resources, such as genotypes or genetic information. Consequently, it does not prohibit the use of genetic information in biotechnological inventions.

While the territory-based approach provides a number of useful concepts related to the need to preserve and strengthen indigenous peoples' cultural identity, it does not address some of the questions which are, perhaps, most central to the protection of traditional knowledge. For example, it does not provide any practical way of controlling access to, or protecting traditional knowledge shared by more than one indigenous people. Neither does it deal with the problem of traditional knowledge which is considered to be in the public domain. In short, dealing with traditional knowledge through access to the territory could leave traditional knowledge without effective protection and, consequently, leave indigenous peoples without any institutional mechanism to prevent third persons using their traditional knowledge or to enforce their rights. Without formal and legal recognition of communal rights over traditional knowledge, there is no foundation for the control of the subsequent use of traditional knowledge.

### **C      *Community Intellectual Rights Regime (CIR-Regime)***

Another model for the protection of traditional knowledge is the so-called Community Intellectual Rights (CIR-Regime) suggested by Nijar, through the Third World Network.

Nijar argues that under the *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS Agreement) the criteria for protection are primarily concerned with either industrial use or trade-related products. Nijar states that traditional knowledge (generally) is not considered to be patentable as, in most cases, traditional knowledge is communally and inter-generationally created and maintained for social and domestic purposes, involving the concept of free exchange.<sup>22</sup> Nijar's work is important in that it provides a conceptual framework to facilitate the implementation of the CIR-Regime, including a draft law Collectors of Biological Resources (Control and Licensing) Act to establish obligations for collectors of genetic resources and traditional knowledge, and a model contract between the collector and the state.<sup>23</sup>

The cornerstone of the CIR-Regime is the idea that indigenous peoples and local communities have rights to self-determination and to the protection of their cultures, lifestyles and traditional practices.<sup>24</sup> The CIR-Regime aims to protect and promote traditional knowledge, as well as to prevent the usurpation, commoditization and privatization of such knowledge. In this sense, it aims to reflect the culture, value-systems and traditional practices of local communities. Under the CIR-Regime, the term 'local communities' includes indigenous peoples, local populations and any organization duly registered to represent their interests.<sup>25</sup> It also aims to acknowledge and preserve the cultural and social life of traditional societies, embodying knowledge and practices supportive of the conservation and sustainable use of biological diversity.<sup>26</sup>

A central postulate of the CIR-Regime is that it is necessary to redefine the term 'innovation' so that it reflects the cumulative, innovative and collective characteristics of traditional knowledge. This new definition is needed to ensure that legal protection will not only be granted to innovations with industrial use, but also to all hallmarks of community creativity, such as innovations of domestic, common and social value.<sup>27</sup> Protection of innovation in the

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<sup>22</sup> Gurdial Singh Nijar, 'Community Intellectual Rights Protect Indigenous Knowledge' (1998) 36 *Biotechnology and Development Monitor*, 11-12.

<sup>23</sup> Gurdial Singh Nijar, *Community Intellectual Rights Act* (1997) Lewis & Clark Law School <<http://www.lclark.edu/org/ielp/nijar2.html>> 3 March 2004.

<sup>24</sup> Gurdial Singh Nijar, *In Defense of Local Community Knowledge and Biodiversity: A Conceptual Framework and Essential Elements of a Rights Regime* (1997) Mindfully.org <<http://www.mindfully.org/GE/Community-Knowledge-Biodiversity.htm>> 14 September 2005.

<sup>25</sup> Nijar, *Community Intellectual Rights Act*, above n 23, (a).

<sup>26</sup> Nijar, *In Defense of Local Community Knowledge and Biodiversity: A Conceptual Framework and Essential Elements of a Rights Regime*, above n 24.

<sup>27</sup> *Ibid*



CIR-Regime covers any use or product relating to knowledge of local communities. Under this scheme ‘innovation’ is defined so as to:

[i]nclude any collective and cumulative knowledge or technology of the use, properties, values and processes of any biological material or any part thereof rendered of any, or enhanced, use or value as a result of the said cumulative knowledge or technology whether documented, recorded, oral, written or howsoever otherwise existing including any alteration, modification, improvement thereof and shall also include derivatives which utilize the knowledge of local communities in the commercialization of any products as well as to a more sophisticated process for extracting, isolating, or synthesizing the active chemicals in the composition of biological extracts used by the local communities.<sup>28</sup>

Dutfield notes that the definition of the term ‘innovation’ given by Nijar is so broad that it could lead to the understanding that any invention which is derived from traditional knowledge would be considered to be an innovation that belongs to (that) local community for all time.<sup>29</sup>

The proposed legal framework suggests that local communities should hold rights over traditional knowledge in trust for themselves and for future generations as custodians or stewards. The framework also addresses the issue of traditional knowledge shared among different indigenous peoples within a state. It asserts that if the knowledge belongs to more than one community, the right and custodianship of the innovation should be vested in all the communities.<sup>30</sup> As co-owner of the invention, each community would enjoy the same rights, duties and obligations granted to a single owner. All benefits that accrue to one co-owner would inure to the benefits of other co-owners.<sup>31</sup> The benefit can be paid in monetary and non-monetary form. The payment must be made to the duly registered representative organization of the community or where no such organization exists to the state which holds the payment in trust for the community.<sup>32</sup>

The prior informed consent of the holder of traditional knowledge is required to grant access to and commercial exploitation of the knowledge by third parties. When traditional knowledge belongs to more than one community, the consent of all of the communities must

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<sup>28</sup> Nijar, *Community Intellectual Rights Act*, above n 23, (c).

<sup>29</sup> Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity: The Case of Seeds and Plant Varieties* (1999) IUCN <<http://www.iucn.org/themes/pbia/vl/doc/biodiversity/sbsta4/ipr.pdf>> 23 September 2006.

<sup>30</sup> Nijar, *Community Intellectual Rights Act*, above n 23, (8.3).

<sup>31</sup> Ibid Art. 8.4.

<sup>32</sup> Ibid Art 3.5 (a and b).

be obtained.<sup>33</sup> However, there is a lack of detail about how the prior informed consent of the local communities should be obtained. The idea that all communities who share certain knowledge should approve its use may be desirable in principle. However, this may be problematic, as it may be difficult if not impossible to bring all indigenous peoples possessing the same, or similar, knowledge together in unanimous consent. Furthermore, the requirement of unanimous consent conflicts with the traditional decision-making practices of many indigenous peoples which may provide for weighted voting powers for elders and other important members of the community, or some form of majority decision making.<sup>34</sup> A further problem with the scheme is that it does not provide appropriate mechanisms to regulate benefit-sharing among indigenous peoples holding the same knowledge.

Nijar suggests that a declaratory regime to register inventions, in which a community might specifically register its innovations as a simple method of declaring their existence to the world, should be created. Any declaration by the elders or other duly recognized members of the community should constitute sufficient evidence of the existence of the rights over particular traditional knowledge. In this sense, while the failure to register does not surrender the innovation rights, the registering of the knowledge may block a patent application for an identical or similar 'innovation'.<sup>35</sup> A person or corporation wishing to contest a declaration of ownership made by a local community would bear the legal and evidentiary burden of proof for doing so.<sup>36</sup> The proposal does not provide, however, any protective scanning mechanism nor explain how indigenous peoples and local communities could monitor international product development and intellectual property rights applications to control unapproved use of resources.<sup>37</sup>

Despite the absence of appropriate mechanisms to regulate benefit-sharing among indigenous peoples who hold the same knowledge, as well as the lack of clear information as to how prior informed consent of the local communities is to be obtained, the concept of a CIR-Regime provides a worthwhile starting-point for developing a mechanism to protect traditional knowledge held by indigenous people within a state jurisdiction. One disadvantage is that the CIR-Regime does not provide any mechanism to deal with the protection of the same

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<sup>33</sup> Nijar, *In Defense of Local Community Knowledge and Biodiversity: A Conceptual Framework and Essential Elements of a Rights Regime*, above n 24.

<sup>34</sup> Brendan Tobin, 'The Search for an Interim Solution' in Kathy Whimp and Mark Busse (eds), *Protection of Intellectual Biological & Cultural Property in Papua New Guinea* (2000) 196, 76.

<sup>35</sup> Posey, 'Indigenous Peoples and Traditional Resource Rights: A Basis for Equitable Relationships?', above n 3.

<sup>36</sup> Nijar, *Community Intellectual Rights Act*, above n 23, (6.2).

<sup>37</sup> Tobin, 'The Search for an Interim Solution', above n 34, 175.

traditional knowledge where it is held by different indigenous peoples living in different countries.

#### **D      *Traditional Intellectual Property Rights (TIP rights)***

Traditional Intellectual Property Rights (TIP rights) proposed by Cottier constitute another alternative *sui generis* regime aimed at protecting traditional knowledge.<sup>38</sup> TIP Rights would protect commercially viable data, information and methods for the use of plant genetic resources for food, agriculture and medicinal purposes. It would also protect data, information and methods which are vital for the conservation and sustainable use of biological resources and/or have socio-economic value. TIP rights are meant to protect intangible components of traditional knowledge and also knowledge manifested by seeds or domesticated animals.<sup>39</sup> However, they do not protect the genetic information contained in the seed.

Cottier notes that protection of plant genetic resources - such as plants and seeds – where they are linked to traditional knowledge may create a conflict of interest between plant breeders and indigenous peoples. This is because once TIP rights are established, plant breeders would need to obtain a license to use the resources which are associated with traditional knowledge. As a consequence, the TIP rights system needs to be carefully aligned with the existing regime that currently protects plant breeders' rights.<sup>40</sup> However, the mechanism for reconciling these two regimes when there is conflict of interest between plant breeders and the holders of traditional knowledge is not provided.

The central aim of TIP rights is to protect traditional knowledge which is not novel or is already in the public domain. Cottier underlines the necessity for elaborating specific criteria and definitions of types of traditional knowledge which qualify for protection of TIP rights,

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<sup>38</sup> Thomas Cottier, 'The Protection of Genetic Resources and Traditional Knowledge: Towards More Specific Rights and Obligations in World Trade Law' (1998) (4) *Journal of International Economic Law* 555-73. Conversely to Posey and Dutfield, who have avoided using the term 'intellectual property' in the framework of Traditional Resources Rights (TRR), Cottier advocates the use of this term under the argument that the knowledge or information concerned, while in the public domain, has been part of the traditional heritage of the communities and individuals concerned. It has been intellectual and mental, and it should become a legal property in the future.

<sup>39</sup> Thomas Cottier and Marion Panizzon, 'Legal Perspective on Traditional Knowledge: The Case for Intellectual Property Protection' (2004) 7(2) *Journal of International Economic Law* 371-89.

<sup>40</sup> Ibid 396.

thus removing them from the public domain. It should be determined whether such removal should have general effect, or only be limited to further industrial use.<sup>41</sup>

The first basic premise of the TIP rights scheme is that TIP rights ought to be collectively owned and should be vested in the community. Traditional knowledge which is individually owned should be protected by conventional models of intellectual property protection, such as utility models or petty patent, copyrights or database.<sup>42</sup> The point has been made that different communities in different regions of the world may independently develop the same traditional knowledge. In these cases, indigenous peoples holding the same knowledge cannot claim joint ownership because one community may have no knowledge about the other's work. Thus, these communities might assert parallel rights over the same traditional knowledge. In this situation, Cottier and Panizzon argue that states would need to adopt appropriate exceptions for collective administration of TIP rights in order to avoid competition among different communities, in a way that would reduce the value of the benefits arising from their knowledge.<sup>43</sup>

The second premise is that TIP rights should introduce a new level of economic benefits in order to promote the balance of power between the providers and the users of traditional knowledge. TIP rights rest on the complementary idea that entitlement rights should be limited to commercial use and industrial production of traditional knowledge by public or private entities.<sup>44</sup> As a result, two possible legal effects of TIP rights are suggested. The first consists of granting to the holders of traditional knowledge rights to prevent third parties from commercially using traditional information and/or permitting its licensing. The second has a narrower scope, where such rights would be more limited and merely give rise to compensation for the use of traditional knowledge by third parties in light of the fact such knowledge had been in the public domain before.<sup>45</sup>

The TIP rights proposal provides policy makers with guidance as to how a TIP rights system might be established.<sup>46</sup> For instance, it has been suggested that policy makers must delimit the extent to which rights over traditional knowledge should be subject to the research exceptions,

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<sup>41</sup> Cottier, 'The Protection of Genetic Resources and Traditional Knowledge: Towards More Specific Rights and Obligations in World Trade Law', above n 38, 576.

<sup>42</sup> Ibid 388.

<sup>43</sup> Ibid 389.

<sup>44</sup> Ibid 389.

<sup>45</sup> Ibid 389.

<sup>46</sup> Ibid 391.

under which its use would not require the rights holders' consent. Similarly, policy makers must decide whether to allow potential licensees to test their products and obtain market approval, prior to obtaining the rights holders' consent.

Rather than an *ipso iure* origin of the right, Cottier supports a declaratory registration of both the innovative and traditional types of rights as a condition for acquiring the TIP rights, as well as for allocation of the rights to individuals, communities, or regions.<sup>47</sup> Registration would operate *pro futuro*; this means that traditional knowledge already protected by patent or other intellectual property rights could still be registered, but not used retrospectively against existing industrial applications.<sup>48</sup> In addition, Cottier suggests that transitional provisions might be created to regulate non-registered traditional knowledge. This would remain for a fixed period of time, subject to legal protection against new commercial uses, if claimed by the holders.<sup>49</sup> The term of protection is not pre-determined but should last as long as traditional knowledge is used by a particular community.<sup>50</sup> Once traditional knowledge ceases to be used and is no longer of commercial interest to the community, protection should be cancelled. Registration could be subject to opposition by indigenous peoples claiming ownership or joint ownership rights over registered traditional knowledge.<sup>51</sup>

According to Cottier, TIP rights could become the first global intellectual property rights system, independent of national legislation and entitlement.<sup>52</sup> He argues that the legal protection could be introduced on a global scale and filing, opposition and adjudication could take place at this level, with government assistance being limited to enforcing rights.

Cottier proposes that an international approach to this subject should be implemented in close cooperation with different government departments and international organizations, through the existing traditional knowledge networks.<sup>53</sup> In order to ensure that TIP rights are operational and enforceable, with provision for efficient dispute settlement, he strongly

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<sup>47</sup> Cottier, 'The Protection of Genetic Resources and Traditional Knowledge: Towards More Specific Rights and Obligations in World Trade Law', above n 38, 578. See also Cottier and Panizzon, 'Legal Perspective on Traditional Knowledge: The Case for Intellectual Property Protection', above n 39, 394.

<sup>48</sup> Cottier, 'The Protection of Genetic Resources and Traditional Knowledge: Towards More Specific Rights and Obligations in World Trade Law', above n 38, 581.

<sup>49</sup> Ibid 581.

<sup>50</sup> Cottier and Panizzon, 'Legal Perspective on Traditional Knowledge: The Case for Intellectual Property Protection', above n 39, 393.

<sup>51</sup> Ibid 395.

<sup>52</sup> Cottier, 'The Protection of Genetic Resources and Traditional Knowledge: Towards More Specific Rights and Obligations in World Trade Law', above n 38, 580.

<sup>53</sup> Ibid 581.

advocates negotiating integration of these rights into the TRIPS Agreement, in the context of a new round of multilateral trade negotiations.<sup>54</sup> Cottier also highlights the need for the creation of a mechanism to control the legalized acquisition of resources and associated knowledge in the patent application procedure. This would include disclosure of the origin of biological or generic resources and evidence of having obtained informed consent prior to their use.<sup>55</sup> TIP rights, therefore, would need to be aligned with the patent regime.

Biber-Klemm has considered the question of how TIP rights are to be aligned with the patent regime. She argues that one possible solution to promote the scheme for the implementation and enforcement of the TIP rights could be the adoption of certification of origin.<sup>56</sup> Further, she outlines other issues which should be discussed and harmonized internationally, namely distinction between discovery and invention, the requirements of the proof of prior art, and the option of joint industrial-traditional patenting.

TIP rights would provide indigenous peoples with an effective and useful mechanism to control access to traditional knowledge which is in the public domain. One advantage is that TIP rights are to be granted upon formal registration of the knowledge. This would delineate the subject of the protection and thus provide transparency and legal and business security. A further advantage is that TIP rights are consistent with both socio-economic and socio-ecologic approaches.

One disadvantage of TIP rights is that their implementation may be very complex as they would be closely aligned with the *Convention for the Protection of New Varieties of Plant*, the patent regime and also with the farmers' rights under the *International Treaty on Plant Genetic Resources for Food and Agriculture* (FAO Treaty). Further, it is not clear whether TIP rights can also be useful in protecting traditional knowledge held or shared by indigenous peoples from different countries. The issue of the overlapping of rights over identical or similar traditional knowledge held by different indigenous peoples is only briefly considered under the TIP rights system and no particular solution to the question of the overlapping of the rights is presented.

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<sup>54</sup> Ibid 579 and 582.

<sup>55</sup> Cottier and Panizzon, 'Legal Perspective on Traditional Knowledge: The Case for Intellectual Property Protection', above n 39, 394.

<sup>56</sup> Biber-Klemm, above n 8, 85-96. For more information about certification of origin see, Brendan Tobin, 'Certificates of Origin: A Role for IPR Regimes in Securing Prior Informed Consent' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 329, 40.

## E      *Property Rights in Traditional Biocultural Contribution*

Jacoby and Weiss proposed a model of a *sui generis* regime to protect the traditional biocultural contributions of indigenous peoples and local communities. They suggest that if patent legislation were amended in order to provide protection to traditional knowledge, it would disrupt the entire system as it would disturb the balance between the competing interests of the inventor in obtaining a patent monopoly and of the general public in preventing the grant of an undeserved monopoly that diminishes the public domain. In addition, it would require more legislative work than would be required to create a specifically tailored regime. In view of this, Jacoby and Weiss developed an alternative *sui generis* property regime to protect traditional knowledge.<sup>57</sup> In addition, they provide two operational mechanisms that could be used by countries to implement their proposal.

The first mechanism consists of a regime where traditional knowledge should be *compulsorily licensed*. Under the compulsory license regime, indigenous peoples would have no rights to oppose or prevent the use of their knowledge or crop varieties. Instead, companies wishing to use traditional knowledge or traditional crop varieties would have to pay an objectively-determined royalty fee.<sup>58</sup> Under the second mechanism which is a *non-compulsory license* system, indigenous peoples would, with some exceptions, have the right to authorize and license the use of their knowledge. Companies interested in accessing and using traditional knowledge or traditional crop varieties would have to obtain a license from the indigenous peoples and pay a negotiated compensation or royalty.<sup>59</sup>

To ensure that the traditional owners are compensated where their knowledge and traditional resources are used in the development of commercial products, both mechanisms would include the protection of traditional crop varieties that are housed in *ex situ* gene banks.<sup>60</sup> In

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<sup>57</sup> Craig D. Jacoby and Charles Weiss, 'Recognizing Property Rights in Traditional Biocultural Contribution' (1997) 16 *Stanford Environmental Law Journal* 74.

<sup>58</sup> Ibid 103. According to Jacoby and Weiss, the advantage of adopting a compulsory licensing system is that it eliminates the possibility that indigenous peoples will hold up the release of a useful commercial product because of excessive demands for compensation or because of a philosophical opposition to the product or to the company developing it.

<sup>59</sup> Ibid 104. Jacoby and Weiss note that finding appropriate payment would prove challenging because the nature of compensation will differ from group to group in accordance with their wants and needs and because of the divergent valuations of traditional biocultural contributions.

<sup>60</sup> Ibid 109.

this respect, the authors recommend that gene banks should also collect and preserve a record of the group who provided the variety and its origin.<sup>61</sup>

Jacoby and Weiss argue that traditional peoples should provide the definition of the rights holder. According to their definition, the term 'traditional peoples' should not only refer to indigenous peoples, but also to those isolated or marginal groups which face problems similar to those of indigenous peoples when trying to protect their traditional knowledge.<sup>62</sup>

In preference to using the term 'traditional knowledge', Jacoby and Weiss have adopted the term 'traditional biocultural contributions'.<sup>63</sup> This consists of two separate but related unique resources: 'traditional biocultural knowledge' and 'traditional crop varieties'.<sup>64</sup> The term 'traditional biocultural knowledge' refers to knowledge of the medicinal or other practical uses of plants and animals, whereas the term 'traditional crop varieties' refers to landraces.

Under the regime of non-compulsory licenses, the right over traditional biocultural knowledge would be non-exclusive, meaning that any legitimate rights holder would have the right to enter binding license agreements. Jacoby and Weiss suggest that property rights over traditional crop varieties should be granted exclusively to the provider of the variety.<sup>65</sup> However, Jacoby and Weiss recommend that the non-exclusive rights system should not be implemented under the compulsory license regime because of the difficulty in identifying the origins of the knowledge. In this case, the benefit arising from the use of shared traditional biocultural knowledge would be distributed among all of the legitimate rights holders.<sup>66</sup>

In addition, they emphasize that the property rights in traditional biocultural knowledge should not be tied to the source of the plant genetic resource. Further, a company should not

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<sup>61</sup> Ibid 112.

<sup>62</sup> Ibid 81.

<sup>63</sup> Ibid 82. The term 'traditional biocultural contribution' was defined as a subset of traditional intellectual contribution related to the identification and cultivation of plants. The broader category of traditional intellectual contribution includes knowledge, technology, or literary or artistic works created, conserved, or improved by traditional farmers, healers, artists, musicians, authors, or other professionals, either individually, in groups, or by cumulative accretion over a period of time.

<sup>64</sup> Ibid.

<sup>65</sup> Ibid 112. Jacoby and Weiss argue that as a traditional crop variety should come from a specific source, it is fairly simple to assign a exclusive property right over such variety.

<sup>66</sup> Ibid 112. Jacoby and Weiss do not recommend the granting of exclusive rights over traditional biocultural knowledge because in most cases, different traditional groups or individuals may develop the same knowledge about the use of the same plants; thus, there follows the difficulty in identifying which among them was the first to develop such knowledge. Although it is not clearly mentioned by the authors, it can be inferred that traditional groups that had independently developed or maintained the same traditional knowledge should be considered as the legitimate rights holders.



be obliged to license traditional biocultural knowledge from the traditional group that first revealed the knowledge. Instead, the company could license the same knowledge from any legitimate rights holder.<sup>67</sup>

Jacoby and Weiss support non-exclusive property rights over traditional biocultural knowledge arguing that it will allow competitive bidding among the rights holder of the same traditional biocultural knowledge which, in turn, will yield a market price. The authors believe that companies will not necessarily license knowledge from the lowest-priced rights holder, if they can license from the traditional group who provide the most value-added service or reliable biological knowledge and materials. The authors emphasize that the new regime should set forth a mechanism for resolving internal disagreement about whether, or on what terms, a particular traditional biocultural contribution should be licensed, as well as dealing with conflicts between distinct rights holders, who assert rights to similar contributions.

Jacoby and Weiss also argue that indigenous peoples should have perpetual rights over their traditional biocultural knowledge and traditional crop varieties.<sup>68</sup> However, they recognize that setting an infinite term for the property right would result in significant political opposition. Therefore, they suggest that rights over traditional biocultural contributions should last for fifty years.<sup>69</sup> Further, such rights should have prospective, not retrospective, application. That is, a company that has already started the process of developing a product based on or incorporating traditional biocultural contributions before the adoption of the proposed *sui generis* regime should not be obligated to obtain a license for the product nor to pay an additional royalty.<sup>70</sup>

According to Jacoby and Weiss, traditional biocultural contributions arise from the labor and time which indigenous peoples have invested in selecting, nurturing, conserving, and improving traditional varieties over a long period of time. Accordingly, the authors advocate that the rights holder should have a special claim over the resources. Further, indigenous peoples also deserve reward for the value created by identifying plants used in medicine or by the cultivation of specific food crop varieties.<sup>71</sup> The holders of traditional biocultural

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<sup>67</sup> Ibid 113.

<sup>68</sup> Ibid 106.

<sup>69</sup> Ibid.

<sup>70</sup> Ibid 108.

<sup>71</sup> Ibid 84.

knowledge should be compensated for any commercial use of a product based on the plant which they have identified as potentially active, while the holders of traditional crop varieties should be compensated by the producers of new crop varieties that incorporate genetic material which they have provided.<sup>72</sup>

Jacoby and Weiss also provide specific and practical guidance for the implementation of each mechanism that they have proposed. In order to implement a compulsory licensing regime, they recommend that an independent entity should develop guidelines for rates or sets of rates for royalties to be paid for accessing and using traditional cultural knowledge or traditional crop varieties. Such an organization should also develop objective criteria and adjudicate in disputes over individual royalty arrangements.<sup>73</sup> The implementation of both regimes should merit a centralized registry, where traditional biocultural knowledge and the rights holders should be registered.<sup>74</sup> Traditional peoples wishing to assert property rights over their traditional biocultural contributions or crop varieties should register their claims, stating whether they are crop varieties-providers, or whether they have biocultural knowledge or both. In addition, they should also disclose information about the plants and the way they use such plants in their community.<sup>75</sup>

Jacoby and Weiss do not provide any guidance as to how the benefits ought to be distributed as they believe that the fairest approach is to pay compensation directly to traditional people's contributors and to give them the right to decide how to distribute those benefits. Jacoby and Weiss consider that traditional peoples may decide that such benefits should only be paid to the group who had provided the traditional cultural contributions. Alternatively, the provider-group may agree to share the benefits with other potential contributors. According to Jacoby and Weiss, the social unit - which may be an individual, a family, a village, a tribe, a guild of healers, or a group of dealers<sup>76</sup> - which has participated in the development and conservation of the knowledge or the crop varieties should hold property rights over traditional biocultural contributions.<sup>77</sup> The register of traditional crop varieties and/or traditional biocultural

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<sup>72</sup> Ibid.

<sup>73</sup> Ibid 104. Jacoby and Weiss suggest that creating an organization that sets royalty guidelines would be expensive, as it would require extensive scientific expertise and resources to adjudicate disputes over individual royalty arrangements.

<sup>74</sup> Ibid 116. Jacoby and Weiss highlight that registration of the traditional biocultural knowledge and its rights holders should not demand a large fee or the costly preparation of detailed scientific information.

<sup>75</sup> Ibid.

<sup>76</sup> Ibid 111.

<sup>77</sup> Ibid 110.

contributions is a pre-condition for the recognition of property rights and the status of a legitimate rights holder.<sup>78</sup>

The granting of exclusive property rights over traditional crop varieties to a particular traditional people or community is not endorsed in this thesis. Neither is the appropriation of benefits arising from commercial exploitation of traditional biocultural knowledge by a particular indigenous people or community. Such proposals undermine the collective character of the traditional knowledge systems. It is well established that indigenous peoples are accustomed to share their seeds and knowledge with neighboring communities. A particular plant or crop variety can often be found in more than one indigenous community. The appropriation of benefits by an individual indigenous group - from which the crop variety was taken or the knowledge was accessed - without the agreement of the other communities - which have also been cultivating and using the same crop variety or knowledge - is unfair. A more equitable approach would be the distribution of the benefits to all indigenous peoples who are still using such crop varieties or knowledge. In addition, under such a regime companies interested in access to a resource could play communities off against each other. Individually, each indigenous community has little bargaining power. This problem could be largely eliminated, however, if indigenous peoples of a particular region shared the rights over traditional crop varieties and identical or similar traditional knowledge. In this case, companies would have to negotiate with indigenous peoples collectively. While it may be difficult to obtain consent among the indigenous peoples of a particular region, the potentially large gains associated with a regional regime to protect traditional knowledge should make this option well worth pursuing. This is particularly the case in regions such as the Amazon.

Further, a compulsory licensing system is not supported in this thesis because it does not respect or take into account indigenous peoples' rights to decide their own priorities. This affects their lives, beliefs, institutions and spiritual well-being. It also impacts on the lands they occupy or use and their ability to control their own economic, social and cultural development. Further, it does not take account of the situation where customary law prohibits the use of particular knowledge. Compulsory licensing removes control over traditional knowledge and cultural elements, only leaving the price to be determined.<sup>79</sup> Another problem

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<sup>78</sup> Ibid 117.

<sup>79</sup> Lorie Graham and Stephen Mcjohn, 'Indigenous Peoples and Intellectual Property' (2005) 19 *Journal of Law & Policy* 313-34.

with the regime proposed by Jacoby and Weiss is that it runs counter to the provisions of the *Convention on Biological Diversity* (CBD) which requires that the application of traditional knowledge should be subject to the approval and involvement of the holders of traditional knowledge.<sup>80</sup>

## F *Collective Bio-Cultural Heritage*

The International Institute for Environment and Development (IIED) together with several other institutions are implementing a Project called 'Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices'. This Project has been undertaken in Peru, Panama, India, Kenya and China with the involvement of IIED and other national institutions.<sup>81</sup> The leaders of the Project support the establishment of a *sui generis* system at community level to protect traditional knowledge, coupled with the adoption of specific national law. It is believed that the best way for communities to protect their knowledge and resources is at the local level, where they can control and safeguard their resources and support claims of resources custodianship. The leaders of the Project are also in favor of *sui generis* system, access and benefit-sharing regimes and other tools such as registers and protocols at local, national and international levels which, in their opinion, should be developed and administered by and with indigenous and local communities.

The Project leaders assert that the common customary principles and values, such as equilibrium, duality and reciprocity form the basis for *sui generis* system at all local, national and international levels.<sup>82</sup> Further, these principles should be used to outline a range of *sui generis* tools such as community resources management, prior informed consent, registers,

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<sup>80</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, (entered into force 5 June 1992) (CBD) Art. 8 (j).

<sup>81</sup> The International Institute for Environment and Development (Iied), Andes, Dobbo-Yala Foundation, University of Panama, Chinese Centre for Agricultural Policy, Southern Environmental and Agricultural Policy Research Institute, Kenya Forestry Research Institute, Centre for Indigenous Farming Systems, Ecoserve, Herbal and Folklore Research Centre, *Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices. Project Summary* IIDE <[http://www.iied.org/NR/agbioliv/bio\\_liv\\_documents/TradKnowledgeSummaryOctober05.pdf](http://www.iied.org/NR/agbioliv/bio_liv_documents/TradKnowledgeSummaryOctober05.pdf)> at 03 April 2006.

<sup>82</sup> The International Institute for Environment and Development (Iied), Andes, Dobbo-Yala Foundation, University of Panama, Chinese Centre for Agricultural Policy, Southern Environmental and Agricultural Policy Research Institute, Kenya Forestry Research Institute, Centre for Indigenous Farming Systems, Ecoserve, Herbal and Folklore Research Centre, *Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices. Recommendations for Sui Generis Systems & ABS Regime* IIDE <[http://www.iied.org/NR/agbioliv/bio\\_liv\\_documents/TradKnowledgeSummaryOctober05.pdf](http://www.iied.org/NR/agbioliv/bio_liv_documents/TradKnowledgeSummaryOctober05.pdf)> at 3 April 2006. The principles of reciprocity mean that what is received has to be given back in equal measure. The principle of duality means that everything has an opposite which complements. The principle of equilibrium refers to balance and harmony, in both nature and society.

and access and benefit-sharing regimes. Additionally, *sui generis* systems should be based on the holistic character of traditional knowledge. Under this holistic concept, the traditional knowledge systems and its components - biological resources, landscapes, cultural values and customary laws - would be addressed together. This recognizes that the survival of traditional knowledge depends on the existence and continuous interaction of all the components of the knowledge systems.<sup>83</sup> Accordingly, traditional knowledge cannot be separated from biological resources since both are often accessed, used, and transmitted together. Further, many traditional crop and livestock breeds are themselves the product or embodiment of traditional knowledge.

Another component vital for sustaining knowledge systems are the landscapes which provide the physical space for customary use and free sharing of knowledge and resources. Traditional knowledge and customary laws are often acquired and transmitted at particular sites which are of spiritual significance such as sacred lakes, rivers, forests or mountains.<sup>84</sup> The authors of the Project support the assertion that community-based natural resources management together with secure land tenure provides a means of strengthening governance and control of natural resources. It also allows the preservation of traditional knowledge, conservation of biodiversity and improvement of livelihoods.<sup>85</sup> Customary laws and spiritual values govern the way traditional knowledge is acquired and shared, as well as the rights and responsibilities attached to possessing such knowledge.<sup>86</sup> Such a *sui generis* system should therefore protect the rights of indigenous and local communities to all of these components of traditional knowledge systems or to 'collective bio-cultural heritage'.<sup>87</sup>

The term 'collective bio-cultural heritage' is defined in the Project as the 'knowledge, innovations, and practices of indigenous and local communities which are often collectively held and inextricably linked to traditional resources and territories, including the diversity of

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<sup>83</sup> The International Institute for Environment and Development (Iide), Andes, Dobbo-Yala Foundation, University of Panama, Chinese Centre for Agricultural Policy, Southern Environmental and Agricultural Policy Research Institute, Kenya Forestry Research Institute, Centre for Indigenous Farming Systems, Ecoserve, Herbal and Folklore Research Centre, *Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices. Protecting Collective Bio-Cultural Heritage* IIDE <[http://www.iied.org/NR/agbioliv/bio\\_liv\\_documents/TradKnowledgeSummaryOctober05.pdf](http://www.iied.org/NR/agbioliv/bio_liv_documents/TradKnowledgeSummaryOctober05.pdf)> at 3 April 2006.

<sup>84</sup> Ibid.

<sup>85</sup> IIDE [et al.], Recommendations for Sui Generis Systems & ABS Regime, above n 82.

<sup>86</sup> IIDE [et al.], Protecting Collective Bio-Cultural Heritage, above n 83.

<sup>87</sup> IIDE [et al.], Project Summary, above n 81.

genes, varieties, species and ecosystems, cultural and spiritual values; and customary laws shaped within the socio-ecological context of communities.’<sup>88</sup>

According to the leaders of the Project, one of the main aims of the *sui generis* system is to protect traditional knowledge systems as a whole. In this sense, the *sui generis* system should recognize and protect the rights of indigenous peoples and local communities to own and control their biocultural heritage. It should also promote the preservation and maintenance of traditional knowledge systems, livelihood security and conservation and sustainable use of biodiversity through land tenure and traditional resource management systems.<sup>89</sup>

The authors of the Project argue that national and international instruments of access and benefit-sharing regimes should recognize that the sovereign rights of states over natural resources and their authority to decide over the use of genetic resources are conditioned by the customary rights of indigenous and local communities over these resources. Such regimes should also recognize and protect the rights of indigenous and local communities to their knowledge, genetic resources and territories. In addition, the authors support the view that *sui generis* and benefit-sharing regimes should not only focus on facilitating access to traditional knowledge and resources, but also on facilitating access by communities to resources maintained in *ex-situ* collections.<sup>90</sup>

The authors of the Project emphasize that as traditional knowledge and genetic resources are often shared freely between communities, even across borders, there is a need for the recognition of collective rights, collective decision-making/prior informed consent and benefit-sharing amongst neighboring communities.

One advantage of adopting the concept of Collective Bio-cultural Heritage as a means of protecting traditional knowledge is that it recognizes the collective rights of the holders over their traditional knowledge. It also takes into account the evolving nature and the collective character of traditional knowledge. One limitation is that such a regime is aimed at providing protection to traditional knowledge at a local level. However, the authors of the proposal do not provide information on how to integrate the protection granted at the local level with the national and international levels. Further, the proposal recognizes but does not present any

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<sup>88</sup> IIIDE [et al.], Protecting Collective Bio-Cultural Heritage, above n 83.

<sup>89</sup> IIIDE [et al.], Recommendations for Sui Generis Systems & ABS Regime, above n 82.

<sup>90</sup> Ibid.

guidance about how to deal with the issue of traditional knowledge shared among and within indigenous peoples from different countries.

### **G      *An Integrated System for the Protection of Traditional Knowledge***

The adoption of an Integrated System for the protection of traditional knowledge has been supported by Muller. In Muller's opinion there are four basic objectives of a regime aimed at protecting indigenous knowledge. These are: (i) to grant indigenous peoples exclusive rights to control the access to, and use of such knowledge, (ii) to compensate the holders of such knowledge and to ensure the fair and equitable distribution of the benefits, (iii) to maintain and conserve traditional knowledge systems, and (iv) to formally recognize indigenous peoples' intellectual contribution.<sup>91</sup> Further, Muller suggests that the protection should not only be granted to indigenous knowledge itself, but also to native crops and any other types of innovation.

Muller argues that owing to the different ways in which traditional knowledge is expressed, no single legal mechanism would be able to protect traditional knowledge. In addition, different reasons for protecting traditional knowledge may demand the adoption of different regimes of protection. For these reasons, Muller asserts that an effective and efficient system for the protection of indigenous peoples needs to integrate and articulate a series of instruments, mechanisms and tools.<sup>92</sup>

According to Muller, the alternatives for protecting traditional knowledge can be summarized as follows:<sup>93</sup>

- (i) to use or to amend the existing intellectual property regimes. This may demand some amendment of the norms of patents to include considerations on the protection of traditional knowledge and an extension of the scope of copyrights, among others;

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<sup>91</sup> Manuel Ruiz Muller, *La Protección Jurídica de los Conocimientos Tradicionales: Algunos Avances Políticos y Normativos en América Latina* (2006) 200. Available at [http://www.spda.org.pe/portal/\\_data/spda/publicacion/20060508165038\\_.pdf](http://www.spda.org.pe/portal/_data/spda/publicacion/20060508165038_.pdf) at 13 August 2006. See also Manuel Ruiz Muller, 'The Andean Community Regimes on Access to Genetic Resources, Intellectual Property, and the Protection of Indigenous Peoples' Knowledge' in Christophe Bellmann, Graham Dutfield and Ricardo Meléndez-Ortiz (eds), *Trading in Knowledge. Development Perspectives on TRIPS, Trade and Sustainability* (2003)

<sup>92</sup> Muller, 'The Andean Community Regimes on Access to Genetic Resources, Intellectual Property, and the Protection of Indigenous Peoples' Knowledge', above n 91, 244. See also Muller, *La Protección Jurídica de los Conocimientos Tradicionales: Algunos Avances Políticos y Normativos en América Latina*, above n 91, 183.

<sup>93</sup> Muller, *La Protección Jurídica de los Conocimientos Tradicionales: Algunos Avances Políticos y Normativos en América Latina*, above n 91, 198.

- (ii) to create new instruments and tools such as a *sui generis* regime, incorporating new objectives and principles. For example, this made be done by the creation of new criteria for the protection of trade secrets aimed at avoiding disloyal competition, establishment of a mechanism for using traditional knowledge registers, creation of compensatory funds, and development of specific mechanisms for the protection of collective innovations; and
- (iii) to establish an integrated system of protection which coordinates and makes compatible a series of instruments, tools and legal norms which, as a whole, aim to protect traditional knowledge. Such a system should also establish a formal connection between and coordination of the existing intellectual property laws (including trademarks and collective trademarks, trade secrets, geographical indications, patent and plant breeders' rights, as well as contracts, registers and legislations regulating access to genetic resources) and the performances of the national authorities in the matter of intellectual property.

Muller provides a schematic overview of an Integrated System for the Protection of Traditional Knowledge, as follows:<sup>94</sup>

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<sup>94</sup>Ibid.



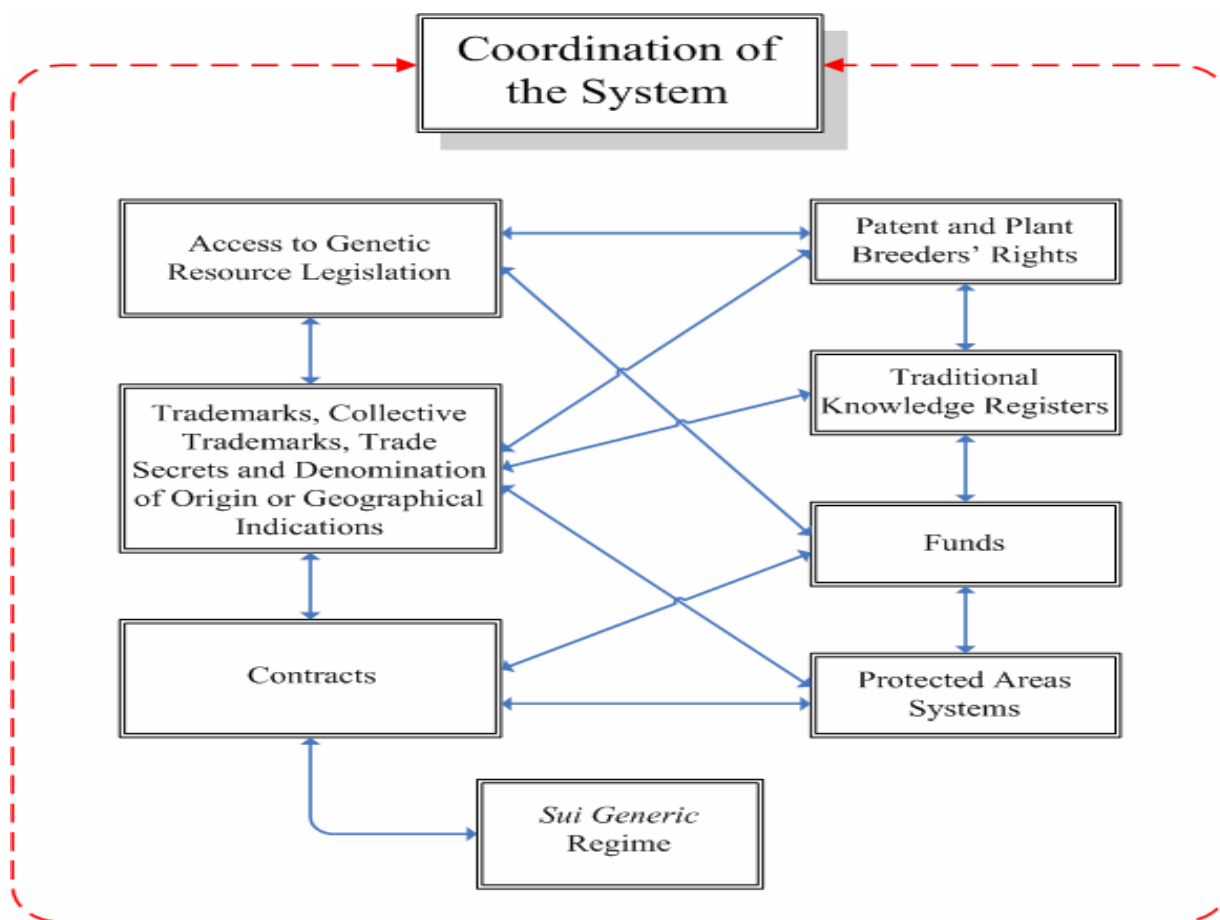


Figure 3: Schematic overview of an Integrated System for the Protection of Traditional Knowledge.

Muller explains the importance and function of each instrument and mechanism that forms part of an Integrated System. He argues that access to genetic resources legislations, contracts and intellectual property laws are significant instruments and mechanisms to guide the establishment of the norms regulating access to and control of traditional knowledge.<sup>95</sup> Muller further points out that traditional knowledge registers are a worthwhile mechanism for the conservation and preservation of traditional knowledge.<sup>96</sup> He also argues that funds and projects for *in situ* conservation of biological diversity and protected areas are useful mechanisms to manage a fair and equitable distribution of the benefits.<sup>97</sup>

Muller recommends the creation of an office, or designation of an existing one, to coordinate and monitor the system at national level. This office would facilitate and represent indigenous

<sup>95</sup> Ibid 201.

<sup>96</sup> Ibid 207.

<sup>97</sup> Ibid.

peoples' interests at regional and international levels. Further, he argues that there is a need to ensure a linkage between and within national systems and at international level. Muller also suggests that the effective implementation of an Integrated System could be supported and improved by the establishment of a coordinated network of authorities or a base including elements of the national system.<sup>98</sup>

Muller acknowledges the complexity of obtaining authorization for access to traditional knowledge which is shared by different indigenous peoples.<sup>99</sup> In this context, he maintains that the interested party may have several options for obtaining the prior informed consent of the holders of traditional knowledge. These are:

- (i) to contact only one specific community and to obtain its consent;
- (ii) to contact the representative organization of that community (and other communities) at the level of federation, confederation or another associative form and to try to gain the consent of the representative leaders; and
- (iii) to contact a community and to propose that a consensus be reached by means of the traditional uses of consultation with other communities.

Further, he argues that any conflicts between indigenous peoples who share the same traditional knowledge regarding the conditions for access to, and use of that knowledge should be solved by them through their customary law and practices.<sup>100</sup>

One of the main advantages of adopting an Integrated System as proposed is that it enables the use of different means of protection for traditional knowledge. One limitation, however, is that it does not provide legal transparency regarding how prior informed consent should be obtained in cases where traditional knowledge is shared. Another limitation is that it is a national regime and therefore does not deal with the problem of traditional knowledge held or shared by indigenous peoples from different countries.

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<sup>98</sup> Ibid 211.

<sup>99</sup> Ibid 213.

<sup>100</sup> Ibid 219.

### III MODELS OF COMPENSATORY REGIMES

#### A *Indigenous Medicinal Knowledge Regime (IMK-Regime)*

The Indigenous Medicinal Knowledge Regime (IMK-Regime) is proposed by Trotti as a mechanism to regulate the use of indigenous medicinal knowledge, as well as the use of all variants of bioactive compounds in indigenous medicinal plants that are medically useful. It is also intended to ensure compensation to indigenous peoples.<sup>101</sup> Trotti argues that the patent system is an inappropriate way of ensuring that the indigenous peoples receive compensation for the use of their medicinal knowledge. Some of his concerns, as well as his reasons for the creation of the IMK-Regime, are addressed in turn.

Trotti argues that there is a strong analogy between access to, and use of, indigenous medicinal knowledge and the exploration of the seabed.<sup>102</sup> In so doing, he suggests that the IMK-Regime could be built on, and supported by, the four elements of the common heritage of mankind which had been enunciated at the global level as Part XI of the United Nations *Convention on the Law of the Sea* (UNCLOS),<sup>103</sup> namely: non-appropriation, international management, benefit-sharing, and reservation for peaceful purposes.

According to the principle of non-appropriation, if it is adapted to the IMK-Regime, states, companies, or people would be prohibited from obtaining or granting intellectual property rights over indigenous medicinal knowledge.<sup>104</sup> In this context, in recognition of the saving of time and costs in their research brought about by the use of indigenous knowledge, pharmaceutical companies would have to pay an initial fee. Additionally, these companies would have to pay royalties (during 20 years from the first successful marketing) for any commercial exploitation of any medicine containing a particular bioactive compound from indigenous medicinal plants.<sup>105</sup> All proceeds would be used to fund programs not only aimed at promoting the preservation of indigenous medicinal knowledge, but also at assisting indigenous peoples to maintain their traditional lifestyles and cultural identity. All indigenous

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<sup>101</sup> J. L. Trotti, 'Compensation Versus Colonization: A Common Heritage Approach to the Use of Indigenous Medicine in Developing Western Pharmaceuticals' (2001) 56(3) Food and Drug Law Journal 367-77. Trotti, 'Compensation Versus Colonization: A Common Heritage Approach to the Use of Indigenous Medicine in Developing Western Pharmaceuticals'

<sup>102</sup> Ibid 378.

<sup>103</sup> *Convention on the Law of the Sea*, opened for signature 10 December 1982, (entered into force 16 November 1994) (UNCLOS).

<sup>104</sup> Trotti, above n 101, 380.

<sup>105</sup> This royalty would be a flat rate and would not depend on whether the compound is used for the same or similar ailment by indigenous communities.

groups would be eligible to share benefits, regardless of whether their medicinal knowledge was used for the development of a medicinal drug or not.

The central postulate of the IMK-Regime is that the dissemination of indigenous medicinal knowledge should be facilitated through public databases, in such a manner that it may be accessed and used to produce goods which are of benefit to the world. In order to so, Trotti suggests that the IMK-Regime should be administered through the adoption of a similar regime of administration provided by Part XI of the *Convention on the Law of the Sea*. He suggests that the IMK-Regime should operate under international authority from the World Intellectual Property Organization (WIPO), through a committee composed of representatives from indigenous peoples, developing countries, and developed countries.

One of the main advantages of the IMK-Regime is that it is not only focused on traditional knowledge itself, but also on assisting indigenous peoples to maintain their traditional lifestyles and cultural identity. Another advantage is that the IMK-Regime should facilitate the documentation and organization of traditional knowledge into databases. However, such regime is not generally appropriate or adequate to defend indigenous peoples' rights over their traditional knowledge and resources. The main goal of the IMK-Regime is not to protect traditional knowledge and respect indigenous peoples' rights to prevent or prohibit the access to their traditional knowledge. Instead, its main objective is to compensate indigenous peoples for the use of their knowledge. Thus, it is argued that the IMK-Regime has a purely economic purpose, while indigenous peoples' interests are only partly economic; they are also linked to issues of the rights to self-determination.<sup>106</sup>

## **B      *Community Knowledge Fund***

Sahai suggests that a community knowledge fund should be established to ensure that indigenous peoples are compensated for the use of their traditional knowledge. Sahai argues that traditional knowledge is collective by nature and has long been freely exchanged within indigenous communities. As such it is difficult, except in rare instances, to identify either the

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<sup>106</sup> Posey and Dutfield, *Beyond Intellectual Property: Toward Traditional Resources Rights for Indigenous Peoples and Local Communities*, above n 5, Chapter 9. See also Matthias Leistner, 'Analysis of Different Areas of Indigenous Resources' in Silke von Lewinski (ed.), *Indigenous Heritage and Intellectual Property. Genetic Resources, Traditional Knowledge and Folklore* (2004) 49, 64.

individual innovator or the source of a particular knowledge.<sup>107</sup> Addressing the issue of regulating the access to, and use of, community knowledge or traditional knowledge, Sahai argues that there is a need to document or map the location of biological resources (at the regional and national levels), as well as the community knowledge that exists about the various uses of these resources, in order to draw up a comprehensive national policy to do so.<sup>108</sup>

Sahai also argues that community knowledge should form part of the prior art for the purposes of patent law. Community knowledge should be documented in a database that would provide the basis for rejecting patent claims that derive from traditional knowledge. Such a database would also be a useful mechanism to assist in the staking of claims for royalty payments from the transfer of indigenous technology. Sahai recommends that this documentation should be compiled and located in a government-owned repository.<sup>109</sup> The central intention of her proposal is to enable indigenous peoples to be compensated for the use of traditional knowledge, without removing such knowledge from the public domain. In this way, companies or individuals interested in prospecting for biological resources should pay an initial access or a prospecting fee. Additionally, the Sahai recommends that a profit-sharing formula should be worked out when a new variety or other commercial product is developed through the use of traditional knowledge or raw material, such as landraces.

Sahai recommends that a national or even regional fund should be created to collect profits on behalf of communities. This fund should be called a 'community gene fund' or 'community knowledge fund.'<sup>110</sup> Such a fund would only be accessed by communities. The system to compensate indigenous peoples proposed by Sahai would help to establish effective control of the knowledge that is already in the public domain. However, like the 'Indigenous Medicinal Knowledge Regime' (IMK-Regime) proposed by Trotti,<sup>111</sup> Sahai's proposed system has a purely economic purpose, whereas indigenous peoples' concerns are not exclusively focused

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<sup>107</sup> See also Suman Sahai, 'Commercialization of Traditional Knowledge and Benefit Sharing' (Paper presented at the UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, Geneva, 30 October-1 November 2000). Sahai, 'Commercialization of Traditional Knowledge and Benefit Sharing' (Paper presented at

<sup>108</sup> Suman Sahai, *Breeders Rights vs Community Rights* Gene Campaign <[http://www.genecampaign.org/Focus%20Area/PROJECT1/Article6\\_IK.pdf](http://www.genecampaign.org/Focus%20Area/PROJECT1/Article6_IK.pdf)> 17 February 2006.

<sup>109</sup> Ibid.

<sup>110</sup> Suman Sahai, 'Commercialization of Traditional Knowledge and Benefit Sharing' in Sophia Twarog and Promila Kapoor (eds), *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions* (2004) 41.

<sup>111</sup> See [II E] of this chapter for more information about the IMK-Regime.

on monetary recompense. Instead they are more concerned with the recognition of rights to decide on how and by whom their knowledge will be used, particularly their ability to deny certain uses of their knowledge which would violate their spiritual beliefs. The remuneration system only allows communities to share benefits, but does not address the lack of control and misappropriation of traditional knowledge.

### **C      *Compensatory Liability Regime (CLR)***

Reichman and Lewis propose a regime to compensate indigenous peoples for the use of their traditional knowledge and create incentives for future innovation based on rules of compensatory liability.<sup>112</sup> One of the main justifications for the proposed regime is that a compensatory liability regime (CLR) could stimulate investment in small-scale innovation in developing countries. Such a regime would enable indigenous peoples to be compensated for the use of their knowledge which is considered to be in the public domain.

At the outset, Reichman and Lewis argue that traditional knowledge should be treated, accessed and used in the same way that any type of 'know-how' is. The underlying idea is that a regime should remove traditional knowledge from the public domain and should relocate it for a specified period of time as legally defined semi-commons, from where traditional knowledge could be freely accessed and used for non-profit or public research purposes.<sup>113</sup> However, when traditional knowledge has been directly applied or when a new commercial product or process (traditional knowledge-based) is developed, compensatory royalties should be paid for a specified period of time. Reichman and Lewis have argued that indigenous peoples' rights to control the use of their traditional knowledge should endure for as long as the knowledge is actively used by them.

Further, Reichman and Lewis argue that a collecting agency is needed to effectively implement a CLR. This is because when traditional knowledge is licensed to a specific sector

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<sup>112</sup> Jerome H. Reichman and Tracy Lewis, 'Using Liability Rules to Stimulate Local Innovations in Developing Countries: Application to Traditional Knowledge' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (2005) 337, 54. See also J. H. Reichman, 'Of Green Tulips and Legal Kudzu: Repackaging Rights in Subpatentable Innovations' (2000) 53 *Vanderbilt Law Review* 1743-77.

<sup>113</sup> Anupam Chander and Madhavi Sunder, 'The Romance of the Public Domain' (2004) 92 *California Law Review* 1331, 369. Chander and Sunder note that a liability approach offers a middle position between the status of 'global common' and property rights by providing that the user should pay for the access (contrary to the existing global common approach) and the holders of the knowledge have no rights to deny access, thus preventing communities from being able to veto the use of their knowledge (contrary to the property rule approach).

or group of practitioners, it may be difficult to control the use or to recoup the payment of royalties. To deal with this, Reichman and Lewis suggest that blanket licenses, similar to those used for public performance of music or for the phototyping of periodicals, should be used. Further, they recognize that issues related to the distribution of collected royalties among the holders of traditional knowledge make this distribution a complex task. However, they do not provide any practical suggestion as to how an effective mechanism to solve this problem is to be devised.

This thesis follows Dutfield's view regarding a liability regime. He argues that a compensatory liability regime has certain advantages in countries where much of the traditional knowledge is already in wide circulation, but still subject to the claims of the indigenous peoples.<sup>114</sup> Another advantage of such a regime is that it entitles traditional knowledge holders to some form of equitable-sharing of the benefits arising from the use of traditional knowledge which is considered to be in the public domain, without removing such knowledge from the public domain. Further, it is also a useful instrument to control the access to traditional knowledge that has practical applications for developing commercial products but is insufficiently inventive to be patentable.<sup>115</sup>

A compensatory liability approach to compensate indigenous peoples for the use of traditional knowledge which is in the public domain is found in the *sui generis* law of Peru, in cases where collective knowledge has passed into the public domain within the previous 20 years. In this situation, a payment based on a percentage of the value of the gross sales resulting from the marketing of the goods developed on the basis of that knowledge is made into a common fund.<sup>116</sup>

#### IV SUMMARY OF FINDINGS

This chapter has examined the more significant proposals for the establishment of *sui generis* regimes aimed at protecting traditional knowledge. It has also examined proposals that aim to

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<sup>114</sup> Graham Dutfield, 'Legal and Economic Aspects of Traditional Knowledge' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (2005) 495, 518.

<sup>115</sup> Graham Dutfield, *Protecting Traditional Knowledge: Approaches and Proposals* (2003) International Centre for Trade and Sustainable Development (ICTSD), Bridges Between Trade and Sustainable Development <<http://www.ictsd.org/monthly/bridges/BRIDGES7-1.pdf>> 1 October 2004.

<sup>116</sup> Law No. 27,811, *Law Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources*, 2002, (Peru) (Art. 2), (Law No. 27,811) <<http://www.grain.org/brl/?docid=81&lawid=2041>> at 23 January 2006.

compensate indigenous peoples for the use of traditional knowledge which is considered to be in the public domain. The examination has shown that there are some consistencies within these proposals regarding the rationale for protecting traditional knowledge. In general, this rationale involves socio-economic and socio-ecological considerations. Under the socio-economic approach, protection of traditional knowledge is to be granted as a means of empowering indigenous peoples' ability to control the access to traditional knowledge and to share the benefits which arise from the commercial exploitation of traditional knowledge. Under the socio-ecological approach, traditional knowledge is to be protected because of the role that it plays in the conservation and sustainable use of biological diversity and its importance for food security and the healthcare systems.

This analysis has also demonstrated that there is no uniformity within the alternative proposals examined about the content and nature of the knowledge that is to be protected. The majority of the proposals aim to protect both traditional knowledge and the associated genetic resources. Some proposals, for example, Traditional Resources Rights (TRR) also aim to protect cultural property, folklore and landscapes. The Collective Bio-Cultural Heritage scheme includes the protection of landscapes. Some of the proposals impose limitations on the type of knowledge that is the subject of protection. The Traditional Intellectual Property Rights (TIP rights) scheme, for example, basically deals with the protection of traditional knowledge which has commercial value. The Indigenous Medicinal Knowledge Regime (IMK-Regime) focuses on the protection of traditional knowledge related to the properties of plants for medicinal purposes.

One advantage common to all of the proposals is that they advocate the adoption of general guiding principles focused on the need to protect traditional knowledge as a means part of the broader objective of preserving indigenous peoples' cultural identity and to respecting their rights to freely determine their political status and pursue their economic, social, and cultural development. Another is the emphasis given to the need to protect other components of knowledge systems that are important for the preservation and maintenance of traditional knowledge, such as traditional resources, landscapes, spiritual values and customary laws. Another virtue common of all of the proposals, is the recognition of the need to accommodate the innovative and collective character of traditional knowledge. Yet another common advantage is the recognition of indigenous peoples' rights to share benefits from the commercial exploitation of traditional knowledge.



While there are positive features in these alternative proposals, they also suffer from a number of weaknesses. One of the main difficulties with these proposals is the lack of comprehensive information about how they are to be effectively implemented, in particular how to obtain prior informed consent of the holders of traditional knowledge, how benefits ought to be distributed and how to deal effectively with the issue of traditional knowledge shared by more than one indigenous people within a country. Another disadvantage which is particularly important in relation to the protection of traditional knowledge in the Amazon is that none of them provides any solution to the problem of traditional knowledge held or shared by indigenous peoples from different countries. Therefore, while each proposal has certain advantages, none of these alternative *sui generis* regimes is capable of fulfilling the aim of this thesis which is to propose a legal system which will protect traditional knowledge held or shared by more than one indigenous people within the Amazon region.

## CHAPTER 7

### REFLECTION ON THE FEASIBILITY OF USING CUSTOMARY LAW TO PROTECT TRADITIONAL KNOWLEDGE

#### I INTRODUCTION

The aim of this chapter is to critically examine the potential use of customary law as a means of protecting and regulating access to traditional knowledge. It is argued that there are several conceptual challenges that need to be addressed before customary laws can be used to protect traditional knowledge. One of the complicating factors is that it is inappropriate to codify indigenous peoples' laws and customs. It has also been said that it is not possible to create a unitary model that represents the reality of all existing customary systems.<sup>1</sup> Another problem is that the misappropriation of traditional knowledge is often carried on beyond the reach or jurisdiction of customary law.<sup>2</sup> In considering such issues, this chapter examines whether it is possible to establish a flexible mechanism that ensures recognition and respect for customary laws in a way which can be articulated within the context of national and international regimes.

A definition of the term 'customary law' was proposed in the workshop on the Role of Customary Law in Regulations for Access to Genetic Resources, Distribution and Protection of Traditional Knowledge held in Quito, 2006, as follows:

Customary law is a series of standards, used and customs, that are passed on from generation to generation and exercised by authorities and institutions specific to indigenous peoples in their territories, and which constitute legal systems recognized, accepted and respected by a group and which incorporate the legal pluralism of countries with an indigenous population.

The term customary law can also refer to a set of norms, uses and customs governing an indigenous people which are exerted by traditional authorities, including their systems and mechanisms for decision-making; rules governing rights and responsibilities on important

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<sup>1</sup> Brendan Tobin, *Derecho Consuetudinario y Diplomacia Internacional* (2006) UICN <<http://www.sur.iucn.org/publicaciones/documentos/documentos/366.pdf>> at 13 June 2006.

<sup>2</sup> Brad Sherman and Leanne Wiseman, 'Towards an Indigenous Public Domain?' in B. Hugenholtz (ed.), *Intellectual Property and the Public Domain* (2005) 259, 275.

aspect of their life, such culture, family relations, land use patterns, knowledge system, as well as the access to natural resources; traditional knowledge and spiritual practices, among others.<sup>3</sup>

Customary law can also define how cultural heritage is shared and developed, and how traditional knowledge systems are appropriately sustained and managed within a community.<sup>4</sup>

The World Intellectual Property Organization (WIPO) is currently undertaking research into how customary laws should be respected in relation to access to and use of traditional knowledge.<sup>5</sup> This involves an examination of two related questions: (i) the role of customary laws and protocols of indigenous and local communities in relation to their traditional knowledge, genetic resources and traditional cultural expressions or expressions of folklore, and (ii) the relationship of customary laws and protocols with the contemporary intellectual property system.

There is an increasing awareness of the need to incorporate components of customary laws and practices into the process of regulating access to genetic resources and associated traditional knowledge and benefit-sharing.<sup>6</sup> WIPO has recognized that traditional knowledge forms part of a holistic world-view and is inseparable from indigenous peoples' very ways of life and their cultural values, spiritual beliefs and customary legal systems.<sup>7</sup> Thus, the use of

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<sup>3</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(j) and Related Provisions, Composite Report on the Status and Trends Regarding the Knowledge, Innovations, and Practices of Indigenous and Local Communities. Regional Report: Latin America, Central and the Caribbean. Note by the Executive Secretary, 4th mtg, [page 60], UNEP/CBD/WG8J/4/INF/5, (2005). See also World Conservation Union (Iucn), *Memoria del Taller sobre el Rol del Derecho Consuetudinario en Reglamentación del Acceso a los Recursos Genéticos, Distribución de Beneficios y Protección de los Conocimientos Tradicionales* (2006) UICN <<http://www.sur.iucn.org/publicaciones/documentos/documentos/366.pdf>> at 13 June 2006.

<sup>4</sup> Customary Law & The Intellectual Property System in the Protection of Traditional Cultural Expressions and Traditional Knowledge: Issues Paper. Version 3.0 (2006).

<sup>5</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Traditional Knowledge: Policy and Legal Options*, WIPO/GRTKF/IC/6/4, (2004). See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Elements of a Sui Generis System for the Protection of Traditional Knowledge*, WIPO/GRTKF/IC/4/8, (2002).

<sup>6</sup> United Nations on Environment Programme, *Decision VI/10: Article 8(j) and Related Provisions*, [s F para 33] (2002). The Conference of Parties of the CBD has indicated that protection of traditional knowledge should be based on a combination of appropriate approaches, respecting customary laws and practices, including the use of existing intellectual property mechanisms, sui generis systems, customary law, the use of contractual arrangements, registers, and guidelines and codes of practice. See also Tobin, *Derecho Consuetudinario y Diplomacia Internacional*, above n 1.

<sup>7</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *The Protection of Traditional Knowledge: Draft Objectives and Principles*, 10th sess, WIPO/GRTKF/IC/10/5, (2006). See also World Intellectual Property Organization, *Intellectual Property and Traditional Knowledge. Booklet n. 2* (2005) 4.

customary law to regulate access to and protection of traditional knowledge may be desirable as it may help to protect indigenous rights, as well as ensure a fairer application of the rule of law.<sup>8</sup>

## **II OVERVIEW OF THE AMAZONIAN INDIGENOUS PEOPLES' RIGHT TO AUTONOMY OR SELF-GOVERNMENT**

A number of Amazonian countries allow indigenous peoples to resolve their internal and local affairs on the basis of their customs and procedures. This does not extend however to the recognition of indigenous peoples' systems for protecting traditional knowledge.

Peru is the only Amazon country to allow the authorities of indigenous communities to exercise jurisdictional functions within their territorial limits, in accordance with their customary law, as long as it does not violate the fundamental rights of the individual.<sup>9</sup> The Bolivian Constitution recognizes indigenous justice as providing an alternative mechanism for conflict resolution, provided that it does not contradict the national constitution or legal system. Bolivian law does not establish limits concerning legal matters or territoriality. This is to say, indigenous customary law may be applied in any case relating to indigenous interests within indigenous territory and if the customary law stipulates, it can also be applied in cases outside indigenous territory and in cases in which non-indigenous people are involved.<sup>10</sup>

Brazil is the only Amazon country which has granted indigenous peoples the right to choose between resolving family disputes; order of succession; regimen of properties, and regulating acts or commercial activities between indigenous peoples via customary laws (provided that they do not violate the national constitution and legislation) on the one hand, or by reference to the civil law, on the other. Brazilian indigenous peoples can also use their customs and procedures in the application of penalties to, or in the discipline of their members, provided

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<sup>8</sup> Antony Taubman, 'Saving the Village: Conserving Jurisprudential Diversity in the International Protection of Traditional Knowledge' in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology Under a Globalized Intellectual Property Regime* (2005) 521, 58. See also United Nations Development Programme (Undp), 'Human Development Report 2004. Cultural Liberty in Today's Diverse World' (United Nations Development Programme (UNDP), 2004) 58.

<sup>9</sup> *Peruvian Political Constitution*, 1993, (Peru) (Art. 149), (Peruvian Constitution) <[http://www.iadb.org/sds/ind/ley/peru\\_leg.pdf](http://www.iadb.org/sds/ind/ley/peru_leg.pdf)> at 13 September 2005.

<sup>10</sup> *Bolivian Constitution* with Amended Text of 1995 and Reforms of 2002 and 2004, 1995, (Bolivia) (Art. 171 (III), (Bolivian Constitution) <[http://www.iadb.org/sds/ind/ley/bolivia\\_leg.pdf](http://www.iadb.org/sds/ind/ley/bolivia_leg.pdf)> at 05 August 2005.

that such penalties or discipline are not cruel or humiliating.<sup>11</sup> The relationship between indigenous and non-indigenous persons is regulated by civil law. However, the national legal legislation may not be applied whenever it is shown to be less favorable to indigenous people, when compared with their own customs and procedures.<sup>12</sup>

In Colombia, indigenous authorities are authorized to exercise jurisdictional functions within their lands, in accordance with their own customs and procedures, insofar as they are not contrary to the constitution and the basic laws of Colombia. In addition the Colombian indigenous peoples have the right to administer and govern their territories, and protected areas.<sup>13</sup>

In Ecuador, the Constitution recognizes the indigenous communities' rights to exercise their own systems or function of justice, based on their customs or customary law, to resolve internal matters, as long as they do not violate the Ecuadorian Constitution and laws.<sup>14</sup> The Ecuadorian Constitution does not specify whether this right is with regard to territory, people or goods. Thus the definition of 'internal matter' is left to indigenous laws to ascertain. De la Cruz notes that although the subject of customary law is not fully developed in Ecuador, it appears that the Ecuadorian 'indigenous peoples are the ones who must assume control of their own institutions, way of life, economic development, and strengthen their cultural identities.'<sup>15</sup>

In Venezuela, the legitimate authorities of indigenous peoples can meet out justice within their territory in relation to any incident or conflict. They may act according to their ancestral traditions, norms and procedures, whenever they do not conflict with Venezuelan Constitution, laws or the maintenance of public order, regardless of the nature of the matter affecting their members. Further, the legitimate indigenous authorities will also have extraterritorial jurisdiction over conflicts arising outside their territory, when such cases

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<sup>11</sup> *Brazilian Federal Constitution of the Republic*, 1988, (Brazil) (Art. 231), (Brazilian Constitution) <[http://www.iadb.org/sds/ind/ley/brasil\\_leg.pdf](http://www.iadb.org/sds/ind/ley/brasil_leg.pdf)> at 05 August 2005.

<sup>12</sup> *Indigenous People Statute, Law No 6,001, 1973*, (Brazil) (Art. 3), ('Indigenous People Statute') <[http://www.iadb.org/sds/ind/ley/brasil\\_leg.pdf](http://www.iadb.org/sds/ind/ley/brasil_leg.pdf)> at 05 August 2005.

<sup>13</sup> *Colombian Political Constitution*, 1991, (Colombia) (Art. 246, 286 and 329), (Colombian Constitution) <[http://www.iadb.org/sds/ind/ley/colombia\\_leg.pdf](http://www.iadb.org/sds/ind/ley/colombia_leg.pdf)> at 05 August 2005. For more information about customary law in Venezuela, see Rodrigo De La Cruz, 'Regional Study in the Andean Countries: Customary Law in the Protection of Traditional Knowledge - Final Report Revised for WIPO' (2006) 15.

<sup>14</sup> *Ecuadorian Political Constitution*, 1988, (Ecuador) (Art 84), (Ecuadorian Constitution) <<http://www.georgetown.edu/pdba/Constitutions/Ecuador/ecuador98.html>> at 05 August 2006.

<sup>15</sup> Cruz, 'Regional Study in the Andean Countries: Customary Law in the Protection of Traditional Knowledge', above n 13.

exclusively involve indigenous peoples, do not involve a criminal matter and do not affect the rights of third-party non-indigenous persons.<sup>16</sup> Further, the State guarantee the right of indigenous peoples to establish and protect, in accordance with their uses and customs, their cultural, artistic, spiritual, technological and scientific heritage, knowledge on animal and plant life, designs, traditional procedures, and, in general, all knowledge.<sup>17</sup>

In Guyana, indigenous villages have a limited form of self government. Specifically, they have the right to make and enforce rules and regulations for a number of prescribed purposes. However, these rules must be approved by the State authority which has the power to veto the establishment of a Village Council, to appoint any person it wishes to the Council, and to suspend, change or revoke any rule, at any time, for any reason.<sup>18</sup> Surinamese legislation does not recognize indigenous peoples' jurisdiction.

There is, in general, the constitutional requirement that indigenous jurisdiction or indigenous legal function shall be coordinated or harmonized with the national legal system or state powers through special legislation.<sup>19</sup> However, the complementary legislation establishing the compatibility of customary law with, and/or the forms for its coordination with the national legal system has not been promulgated in any of these countries.

### III CUSTOMARY LAW AS THE BASIS FOR THE REGULATION OF THE ACCESS TO, AND PROTECTION OF TRADITIONAL KNOWLEDGE

In recent years many indigenous peoples have argued that their customary uses, practices and norms should be used as a guide for the legal protection of traditional knowledge.<sup>20</sup> In

<sup>16</sup> *Venezuelan Political Constitution*, 1999, (Venezuela) (Art. 124), (Venezuelan Constitution) and *Ley Organica de Pueblos y Comunidades Indígenas*, 2006 [Art. 130] <<http://www.georgetown.edu/pdba/Constitutions/Venezuela/ven1999.html>>. 13 September 2006.

<sup>17</sup> *Ley Organica de Pueblos y Comunidades Indígenas*, above n 16, art 103. For more information about customary law in Venezuela, see Rodrigo De La Cruz, 'Regional Study in the Andean Countries: Customary Law in the Protection of Traditional Knowledge', above n 13.

<sup>18</sup> *Guyanese Constitution, Amendment Act No 2, 2003*, (Guyana) (Sc149(G)), ('Guyanese Constitution, Amendment Act No 2')

<sup>19</sup> The requirement is made by the Constitutions of Bolivia, Brazil, Colombia, Ecuador, and Peru.

<sup>20</sup> Indigenous peoples claim that their customary laws are of vital importance for the preservation of their traditional knowledge. Because of this, they also claim that their livelihood needs, customary laws and values should also be considered in the context of protecting their knowledge. See *WIPO, Intellectual Property and Traditional Knowledge. Booklet n. 2*, above n 7, 7. See also Rodrigo de la Cruz, 'Vision de los Pueblos Indígenas en el Contexto de las Decisiones sobre ABS y 8(j): Impacto de las Decisiones de la CBD/COP sobre el Mandato de la IGC de la OMPT' (COICA, ICTSD, IUCN, 2004) 9. The need for recognition of customary law is referred to in many indigenous statements and declarations, such as the *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples* and the *Julayinbul Statement on Indigenous Intellectual Property Rights*. It is also included in *ILO Convention 169*, the *Draft United Nations Declaration on the Rights*

particular they request that the rights to forbid, control or authorize access to traditional knowledge will be based on their customary mechanisms for decision-making.<sup>21</sup> This section examines the feasibility of using customary laws to regulate access to and protection of traditional knowledge.

### A *Nature of Customary Law*

One of the challenges for the full and direct application of customary law arises from some of its particular characteristics. Customary laws are binding on members of a particular community. That is, the rules are applicable to the local situation, within the context of a particular cultural setting; it is deeply embedded in the way of life and social values of a particular community. For the most part, the rules tend to be unwritten - or not codified - and dynamic in nature.<sup>22</sup> Like any system of law, customary laws evolve from time to time to reflect changes in the social, economic and political environment.<sup>23</sup> Customary legal systems may vary depending on the culture, economy, language, social structure, demography and geographic area from which they originate. It is worth noting that customary laws are not uniform even within an ethnic group; in some cases, there are significant variations in customary practices among communities within an ethnic group.<sup>24</sup> Differences in customary laws can also be based on factors such as the internal politics within social groups, or the extent to which western culture or contact with other groups has impacted on indigenous

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of Indigenous Peoples and the Principles and Guidelines for the Protection of the Heritage of Indigenous People, elaborated by the Special Rapporteur of the United Nations Sub-Commission on Prevention of Discrimination and Protection of Minorities.

<sup>21</sup> Victoria Tauli-Corpuz, 'Biodiversity, Traditional Knowledge and Rights Of Indigenous Peoples' (Paper presented at the International Workshop on Traditional Knowledge, Panama City, 21-23 September 2005). See also Yozo Yokota and Saami Council, *Standard-Setting: Review of the Draft Principles and Guidelines on the Heritage of Indigenous Peoples. Expanded Working Paper Submitted to Working Group on Indigenous Populations, Sub-Commission on the Promotion and Protection of Human Rights*, 23rd sess, [Annex (I. n)], E/CN.4/Sub.2/AC.4/2005/3, (2005).

<sup>22</sup> Christine Zuni Cruz, *Tribal Law as Indigenous Social Reality and Separate Consciousness [Re] Incorporating Customs and Traditions into Tribal Law* <[http://tlj.unm.edu/articles/volume\\_1/zuni\\_cruz/content.php#rfn3](http://tlj.unm.edu/articles/volume_1/zuni_cruz/content.php#rfn3)> at 23 September 2005. See also Customary Law & The Intellectual Property System in the Protection of Traditional Cultural Expressions and Traditional Knowledge, above n 4, 15.

<sup>23</sup> Paul Kuruk, 'African Customary Law and the Protection of Folklore' (2002) XXXVI(2) *Copyright Bulletin* 4-7. Customary Law & The Intellectual Property System in the Protection of Traditional Cultural Expressions and Traditional Knowledge, above n 4.

<sup>24</sup> Kuruk, above n 23, 6 and 22. Kuruk notes that generally the customary law rules among ethnic groups speaking a common language tend to be similar, but rather significant differences that can sometimes exist make it misleading to speak of a uniform customary law rule applicable to all members of the language group.

peoples' traditions and customs.<sup>25</sup> In this context, Zerda-Sarmiento [et al.] argue that international and national laws concerning intellectual property and access to biological diversity may induce change or have an impact on indigenous peoples' decision-making processes about the access to their traditional knowledge.<sup>26</sup> Similarly, Barragan noted that market rules can give rise to dramatic variations to the particular norms that govern the way in which indigenous peoples manage and protect their traditional knowledge.<sup>27</sup>

The unwritten character of customary law contributes significantly to the problem of acknowledging and ascertaining customary law. It also has ramifications for the conditions for accessing traditional knowledge, especially where diverse practices are found among sections of an ethnic group. Thus, the use of customary laws to protect traditional knowledge may prevent potential users from having a clear and streamlined understanding of the rules and conditions for obtaining access to traditional knowledge. For example, it would be difficult to identify whether an element of traditional knowledge is protected and who the rights-holders are.<sup>28</sup>

It is important to note that the process for obtaining indigenous peoples' prior informed consent will usually involve cross-cultural communication. Therefore, indigenous rules and conditions should be publicized, not only in their native language, but also in others, such as the official language of the country of access. It should also be noted that the mechanism eventually used by indigenous peoples to publicize their rules and conditions that regulate

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<sup>25</sup> Abel Adrián Ambia, *El Ayllu en el Perú Actual: Con un Estudio de las Normas Tradicionales de la Comunidad Campesina de Amaru, Calca*, (1989) 69. See also Cruz, above n 22. See also Hon. Robert Yazzie, 'Life Comes From It: Navajo Justice Concepts' (1994) 24(2) *New Mexico Law Review* 175. See also Bruce L. Benson, 'An Evolutionary Contractarian View of Primitive Law: The Institutions and Incentives Arising Under Customary Indian Law' (1991) 5(1) *The Review of Austrian Economics* 41-65. Benson notes that 'for new rules to be accepted by the members of an affected group, they generally must build upon, and indeed, extend existing rules. That is, the fundamental principles of customary law (e.g. private property and individual rights) do not change. They are simply extended to cover new situations.'

<sup>26</sup> Alvaro Zerda-Sarmiento and Clemente Forero-Pineda, 'Intellectual Property Rights Over Ethnic Communities' Knowledge' (2002) 54(171) *International Social Science Journal* 99-100. See also Department of Economic and Social Affairs, Division for Social Policy and Development and Secretariat of the Permanent Forum on Indigenous Issues, *Contribution of the Convention on Biological Diversity and the Principle of Prior and Informed Consent. Doc. PFII/2005/WS.2/3*, United Nations. International Workshop on Free, Prior and Informed Consent and Indigenous Peoples, [25], (2005). For instance, the Indigenous Peoples' Biodiversity Network has been set up by indigenous peoples to influence policy development and to exchange information on biodiversity issues. In this context, they have established the Indigenous Working Group on Cultural and Intellectual Integrity Issues involving members from the Americas, Asia, and Africa.

<sup>27</sup> Lourdes Barragan, *Encuentro Regional Amazonico Preparatorio para la Cuarta Sesión del Foro de Naciones Unidas sobre Bosques. Ayuda Memoria* (2004) Fundacion Natura <<http://fnatura.org/paginas/textos.php?id=171&val=27>> at 03 February 2006.

<sup>28</sup> Nicolas Brahy, *The Contribution of Databases and Customary Law to the Protection of Traditional Knowledge, in Les Carnets du Centre de Philosophie du Droit No. 117* (2005) 23. <<http://www.cpdr.ucl.ac.be/docTravail/BrahyN117.pdf>> at 13 June 2006.



access to their traditional knowledge may vary from community to community. For example, some indigenous people may publish their rules on the Internet, while others may refuse to publish their rules altogether. Others may not publish their rules because each access may be subject to a special internal debate.<sup>29</sup> While one community may grant consent, another may refuse it. This situation may lead to conflicts within and between communities. In addition, the unwritten and dynamic characteristics of customary laws can make it costly and difficult to define, prove or provide the evidence of the normative content of the customary law and its breach. It would be also difficult to provide an adequate basis for legal remedies that reach beyond the originating community.<sup>30</sup>

## **B      *Diversity of Customary Law***

Yet another problem related to the use of customary law as a means to protect and regulate access to traditional knowledge is that there is no single homogenous body of customary law which could be applied to regulate the protection, access to, and use of traditional knowledge.<sup>31</sup>

In the context of traditional knowledge, it is often asserted that 'indigenous peoples possess their own locally-specific systems of jurisprudence with respect to the classification of different types of knowledge, proper procedures for acquiring and sharing knowledge, and the rights and responsibilities which attach to possessing it, all of which are embedded uniquely

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<sup>29</sup> The indigenous Navajo people are now using the Internet to reconnect to their traditional culture, and rebuild confidence. In this context, all communities are potentially connected by a network. This is to say that, if they want to they may publish their rules on the Internet. See Marty Logan, *An Indigenous Web Builds Up* (2005) Inter Press Service (IPS) <<http://www.ipsnews.net/news.asp?idnews=31047>> at 17 November 2005. Nelly Arvelo-Jimenez, 'Kuyujani Originario: The Yekuana Road to the Overall Protection of their Rights as a People' in Joseph Michael Finger and Philip Schuler (eds), *Poor People's Knowledge: Promoting Intellectual Property in Developing Countries* (2004) 37, 50. Arvelo-Jimenez notes that the Yekuana people are demanding the right to go slowly and with great caution in the discussion about the access to their traditional knowledge. In the meantime, as a temporary tactic, the Yekuana will register the intellectual property of each of their products and continue the process of creating a sui generis system to protect their knowledge.

<sup>30</sup> Ibid 528.

<sup>31</sup> Brendan Tobin, 'Towards an International Regime for Protection of Traditional Knowledge: Reflections on the Role of Intellectual Property Rights' (Paper presented at the Conference on Bioethical Issues of Intellectual Property in Biotechnology, Tokyo, Japan, 2004).

in each culture and its language.<sup>32</sup> As was indicated by the Four Directions Council, a Canadian indigenous peoples' organization, indigenous peoples have their own systems with respect to classification of knowledge, as well as systems of acquiring, possessing and sharing knowledge, and mechanisms for its protection as part of their customary law. Thus, it can be inferred that there is not one, monolithic indigenous concept of 'ownership' and 'property'. Instead there is a diversity of views on how to regulate property internally.<sup>33</sup> While there is no homogenous concept of ownership and property over traditional knowledge or a clear understanding about traditional property systems, there is by a common belief that indigenous peoples have developed a community-based system of property rights on lands which is regulated by their customary laws.<sup>34</sup>

A further complicating fact is that not much is known about indigenous peoples' traditional property systems,<sup>35</sup> especially about the demarcation between what belongs to the general community, specific community, or individuals within the communities, or about the enforcement of rights and mechanisms for dispute resolution.<sup>36</sup> To date, studies have focused more on customary law related to land, the environment, and conservation measures, but have

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<sup>32</sup> Four Directions Council, 'Forests, Indigenous Peoples and Biodiversity: Contribution of the Four Directions Council' (Secretariat for the Convention on Biological Diversity, 1996) quoted by Graham Dutfield, 'Rights, Resources and Responses' in Darrel A. Posey (ed.), *Cultural and Spiritual Values of Biodiversity* (1999) 503, 542. Traditional property systems are referred to in many indigenous statements and declarations, such as the Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples, and the Julayinbul Statement on Indigenous Intellectual Property Rights. In practice, many indigenous and local communities have already developed their own policies for using their knowledge and/or research in their lands. See, for example, the 'Research Principles for Community-Controlled Research with the Inuit Tapirisat of Canada', developed by the Inuit Tapirisat of Canada, and the 'Guidelines for Conduct of Participatory Community Research to Document Traditional Ecological Knowledge for the Purpose of Environmental Assessment and Environmental Management', developed by Grenier, L. 1998, *Working with Indigenous Knowledge: A Guide for Researchers*. IDRC, Ottawa. Appendix 1, 87-97.

<sup>33</sup> Tauli-Corpuz, above n 21. Tauli-Corpuz affirms that indigenous peoples have various concepts of ownership, including individual or collective ownership. The collective ownership is generally held by the clan or tribe or nation. See also Graham Dutfield, 'TRIPS-Related Aspects of Traditional Knowledge' (2001) 33(3) *Case Western Reserve Journal of International Law* 233-57. See also Graham Dutfield, *Intellectual Property, Biogenetic Resources and Traditional Knowledge* (2004) 59. Dutfield provides some examples: To Shuar people, the shaman knowledge is an exchangeable commodity, meaning it can be bought, sold, lent or stolen. The Miskito people consider that traditional knowledge is privately owned by the healers. Among the Siona people, the shaman maintains the ownership of traditional knowledge. Indigenous people from Melanesia swap or sell their secrets and/or knowledge.

<sup>34</sup> Center for International Environmental Law (Ciel), *Whose Resources? Whose Common Good? Towards a New Paradigm of Environmental Justice and the National Interest in Indonesia* (2002) Center for International Environmental Law (CIEL) <[http://www.ciel.org/Publications/Whose\\_Resources\\_3-27-02.pdf](http://www.ciel.org/Publications/Whose_Resources_3-27-02.pdf)> 17 June 2006.

<sup>35</sup> David A. Cleveland and Stephen C. Murray, 'The World's Crop Genetic Resources and the Rights of Indigenous Farmers' (1997) 38(4) *Current Anthropology* 477-87.

<sup>36</sup> Kuruk, above n 23. Kuruk notes that, as a matter of principle, it is necessary to examine more closely the nature and significance of the social and political structure in tribal societies, in order to understand customary law. See also Brian Thom and Don Bain, 'Aboriginal Intangible Property in Canada: An Ethnographic Review' (Lynn Fortin, 2004) 2.

focused little on knowledge, cultural expressions and plants.<sup>37</sup> A number of anthropological studies have shown that indigenous peoples have notions of intellectual property and that these rights exist at the individual level and/or group level based on residence, kinship, gender, or ethnicity.<sup>38</sup> However, the nature of these rules may differ, as they are determined according to customs and laws of particular groups and communities.<sup>39</sup>

Of particular significance to the present discussion is the need to provide more transparency and legal certainty to the process of protection of, and access to traditional knowledge. The use of different customary laws for regulating the protection of and access to traditional knowledge may create burdens and uncertainty for potential users of traditional knowledge, as they may have problems in identifying which customary law they should follow, determining whether the rules for accessing traditional knowledge vary between different customary laws and resolving the exact limits of the protection of traditional knowledge under all customary laws.

Further, the use of different customary laws may create unfair competition among indigenous peoples. This is because some groups may make their laws more flexible where that result in a particular advantage to them, or may breach or run counter to their own customary laws or negotiate lower prices in order to take advantage of their position in the signing of contracts and agreements at the expense of other groups.<sup>40</sup> Other groups may have a genuine desire to ensure the full and strict observance of their customary laws and traditions and this may have the effect of prejudicing or compromising their role in contract negotiations.<sup>41</sup> This may create situations where companies prefer to negotiate with one indigenous people or one indigenous community over others because of a more favorable aspect in their customary access regulations.

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<sup>37</sup> Daniel F. Robinson, 'Governance and Micropolitics of Traditional Knowledge, Biodiversity and Intellectual Property in Thailand' (The University of New South Wales, 2006) 88.

<sup>38</sup> Cleveland and Murray, above n 35, 483.

<sup>39</sup> Erica-Irene Daes, *Protection of the Heritage of Indigenous People, Human Rights Study Series* (1997) 4. Daes argues that 'indigenous peoples have always had their own laws and procedures for protecting their heritage and for determining when and with whom their heritage can be shared. The rules can be complex and they vary greatly among different indigenous peoples. To describe these rules thoroughly would be an almost impossible task ...' See also Michael Davis, 'Indigenous Rights in Traditional Knowledge and Biological Diversity: Approaches to Protection' (1999) 4(4) *Australian Indigenous Law Reporter* 1.

<sup>40</sup> Brahy, *The Contribution of Databases and Customary Law to the Protection of Traditional Knowledge*, above n 28.

<sup>41</sup> Dutfield, 'TRIPS-Related Aspects of Traditional Knowledge', above n 33, 124. Dutfield affirms that indigenous peoples empowered with rights to control access to their lands and communities have a better chance of negotiating favourable bioprospecting agreements.

Another point is that in general the legal systems may not be prepared to apply and enforce differing customary laws. In a foreign jurisdiction, a court would need to create a broad and flexible legal and cultural mechanism to support the interpretation and application of customary law that is rooted in a foreign traditional culture.<sup>42</sup>

### C *Ascertainment and Adjudication of Customary Laws*

One of the main problems related to the use of customary laws to protect traditional knowledge arises from the difficulty in identifying the person or persons who have the authority or mandate to represent and make decisions on behalf of indigenous peoples. The adjudication procedures under customary law vary depending on the type of decision-making processes adopted by the society and the internal organizations within indigenous groups and traditional authorities.<sup>43</sup> Such organizations and traditional authorities could include the council of the ancients, the village or tribal councils, the shaman or spiritual leader, the tribal ethics committee, or, alternatively the council of elders, or young members, or require the consent of the individuals concerned.<sup>44</sup> There are also situations where the decision is taken by administrative and representative political bodies such as community councils, socio-territorial associations and land councils. Sometimes these bodies are detached from traditional practices and/or not supported by the traditional knowledge holders of the community.<sup>45</sup> There are also cases where indigenous peoples have no traditional collective decision-making authority,<sup>46</sup> or no single authority enjoying a concentration of political power capable of controlling the activities of members of the group.<sup>47</sup>

The common and most fundamental question that is asked in relation to customary law is 'Who has the authority or the mandate to represent and make decisions for indigenous

<sup>42</sup> Taubman, above n 8, 530. Taubman notes that traditional knowledge holders have found difficulties in securing effective outcomes in their own, and also in foreign jurisdictions, even when using existing, conventional intellectual property rights.

<sup>43</sup> Carlos M. Correa, 'Protecting Traditional Knowledge: Lessons from National Experiences' (Paper presented at the Workshop on Elements of National Sui Generis Systems for the Preservation, Protection and Promotion of Traditional Knowledge, Innovations and Practices and Options for an International Framework, Geneva, 2003). See also Kuruk, above n 23, 16.

<sup>44</sup> Graham Dutfield, *Protecting Traditional Knowledge: Pathways to the Future* (2006) International Centre for Trade and Sustainable Development (ICTSD) <<http://www.iprsonline.org/unctadictsd/docs/Graham%20final.pdf>> 18 May 2006. See also Kelly Bannister, 'Lessons for ABS: Academic Policies, Community Protocols and Community-level PIC' (Paper presented at the International Expert Workshop on Access to Genetic Resources and Benefit Sharing. Record of Discussion, Cuernavaca, 24-17 October 2004).

<sup>45</sup> Bannister, above n 44.

<sup>46</sup> Brendan Tobin, 'Certificates of Origin: A Role for IPR Regimes in Securing Prior Informed Consent' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 329, 40.

<sup>47</sup> Kuruk, above n 23, 16.

people?’ According to the Coordinator of Indigenous Organizations of the Amazon Basin (COICA), around 80 per cent of indigenous peoples living in the Amazon rainforest have organizational connections, mainly with federations that link them into a network of local, regional, national and international organizations.<sup>48</sup> Hence, Carrizosa notes that a person or a company interested in accessing traditional knowledge may have problems obtaining the prior informed consent, especially in relation to genetic resources which are regionally distributed and traditional knowledge which is shared between many groups and across large geographic areas.<sup>49</sup> Further problems arise in relation to the identification of the representatives of the communities and the assessment of their representational power and capacity, and also as regards the identification of the other communities who share the same, or similar knowledge, and who, therefore, require involvement in the process.<sup>50</sup> Indeed, it is difficult and sometimes impossible to know which is the appropriate body or the persons to deal with in a given situation.<sup>51</sup> For instance, traditional authorities of a particular community may qualify (under the customary law) as the appropriate entity to give or deny consent. In other cases, it may be the whole community or a combination of entities. Barber [et al.] have noted that identifying the leaders of the communities or their legal representative, as well as determining the applicable customary law will be extremely difficult without proper advice and co-operation with key local authorities.<sup>52</sup> Further, understanding the local structure and culture of collective decision-making may also require significant time and resources.<sup>53</sup> Finally, some industries have been reluctant to negotiate with indigenous peoples who have unstable organizational

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<sup>48</sup> Coordinator of Indigenous Organizations of the Amazon Basin (COICA), *Amazon Indigenous Agenda. Returning to the Maloca* (2005) 11. COICA mentions that indigenous peoples living in the Amazon rainforest have adopted a communal-organizational system reaching five levels. At the community level it unites families sharing the same physical space. At the federation level it joins together various communities, mainly of the same ethnic family and commonly located within the same basin. At the regional level, it promotes the articulations of the federation of the second level, and its character is inter-ethnic. At the national level, it concentrates on the affiliation of the second level and third level generations. At the international level, indigenous peoples' rights and interests or expectations are represented by COICA.

<sup>49</sup> Marcia Langton, David Epworth and Viv Sinnamon, 'Indigenous Social, Economic and Cultural Issues in Land, Water and Biodiversity Conservation. A Scoping Study for WWF Australia' (On behalf of the Centre for Indigenous Natural and Cultural Resources Management, Northern Territory University Darwin, Northern Territory, 1999).

<sup>50</sup> Santiago Carrizosa, Stephen B. Brush, Brian D. Wright and Patrick E. McGuire (eds), *Accessing Biodiversity and Sharing the Benefits: Lessons from Implementing the Convention on Biological Diversity* (2004) 9, 13.

<sup>51</sup> Twarog and Kapoor (eds), *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions* (160. See also Brendan Tobin, *Customary Law as the Basis for Prior Informed Consent of Local and Indigenous Communities* United Nations University <<http://www.ias.unu.edu>> 23 August 2005.

<sup>52</sup> Charles Victor Barber and Antonio La Vina, 'Regulating Access to Genetic Resources: The Philippines Experiences' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 115, 31.

<sup>53</sup> Ibid 130.

structures and little understanding of the commercial and legal environment of industrial research.<sup>54</sup>

In short, from a practical perspective, the array of existing customary law regimes and the existence of a range of different internal organizations or traditional authorities and decision making processes, means that all indigenous peoples - and, in some cases, individual communities - within a broader ethnic group - may have their own customary rules and conditions to regulate the access to biological and/or genetic resources, as well as the traditional knowledge associated with them.<sup>55</sup> This gives rise to the question: 'How is one able to decide which customary law is to be applied where traditional knowledge is shared by more than one indigenous people, when a customary law in one community is different from that of other communities sharing the same knowledge?'

The immense numbers of organizations claiming legitimacy to represent indigenous peoples and the divergence of views within individual communities within a broader ethnic group have already resulted in conflict. The agreement between the Aguaruna people of Peru and Washington University, in partnership with the International Cooperative Biodiversity Group (ICBG), the agreement between the Kani People of India and the Tropical Botanic Garden and Research Institute (TBGRI) and the agreement between the Kraho People of Brazil and the Federal University in São Paulo are illustrative not only of the different precepts held by indigenous peoples, but also of the importance of identifying the legitimate authority and/or representative of indigenous people.<sup>56</sup> The controversies about legitimate representation of indigenous peoples in the context of these agreements are summarized in turn.

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<sup>54</sup> Joshua P. Rosenthal, 'The International Cooperative Biodiversity Groups (ICBG) Program. A U.S. Government Funded Effort to Promote Equitable Sharing of Biodiversity Benefits in the Context of Integrated Research and Development Toward Drug Discovery, Biodiversity Conservation and Economic Development. A Benefit-sharing Case Study' (Convention on Biological Diversity, 1997) .

<sup>55</sup> Some indigenous peoples have produced their own set of rules to regulate scientific resources in their lands, as well as for obtaining prior informed consent (PIC) and about the nature of benefits to be returned to them. This has particularly been the case of the Kuna people from Panama and Inuit Tapirisat of Canada. The Kuna people publicized a manual entitled Programa de Investigación: Monitoreo y Cooperación Científica (Research Program: Scientific Monitoring and Cooperation), containing a general description of their cultural and natural resources, as well as guidelines to apply for permission to enter the lands and for benefit-sharing. The Inuit Tapirisat of Canada produced a background paper, 'Negotiating research relationships in the North', containing a set of principles and ethical guidelines and the concerns expressed by members of Inuit communities. In addition, an indigenous person has set up a network-organization named the Indigenous Peoples' Biodiversity Network in order to influence policy development and to exchange information on biodiversity issues. In this context, the Indigenous Working Group on Cultural and Intellectual Integrity Issues involving members from the Americas, Asia, and Africa has been established.

<sup>56</sup> It should be noted that when these agreements were negotiated, neither Peru nor India had enacted legislation to protect and govern the access to traditional knowledge. This is to say, both negotiations took place in an unregulated environment.

### **The agreement between the Aguaruna people and Washington University, in partnership with the International Cooperative Biodiversity Group (ICBG)**

According to the census taken in 1993, the size of the Aguaruna population was around 45,137 persons. They share a common language and cultural heritage, including knowledge about genetic resources.<sup>57</sup> The majority of extant Aguaruna communities (around 187, in 2002) are affiliated to an indigenous-representative organization.<sup>58</sup> Greene has found in 2002 that there were about 13 distinct organizations which were supposedly entitled to represent the interests of or to speak on the Aguarunas' behalf. He has also noted that the local organizations used to be coordinated with, or are claimed as local affiliates by, one of two national indigenous confederations based in Lima.

The *Organización Central de Comunidades Aguarunas del Alto Marañon* (OCCAAM) was considered in the original ICBG grant application for the award as a potential partner. However, the ICBG's research-team found that the *Consejo Aguaruna Huambisa* (CAH) was the most influential indigenous organization in the region. They also found that the CAH was the most prominent institutional actor among the Aguaruna.<sup>59</sup> Therefore, in April 1994, the ICBG signed a Letter of Intention with the CAH seeking access to genetic resources and associated traditional knowledge held by Aguaruna people. The partnership between the consortium of Washington University/ ICBG and the CAH was not fully and effectively implemented;<sup>60</sup> as a result of this the ICBG signed, in 1995, an agreement with the OCCAAM. The CAH had strongly argued against this new agreement, arguing that the research-team of ICBG had entered into Aguaruna territory without their legitimate authorization, since the OCCAAM did not have authority or legitimacy to represent the Aguaruna people. Therefore, CAH formally asked ICBG to terminate, immediately, the activities involving genetic resources and associated traditional knowledge held by the

<sup>57</sup> Joshua P. Rosenthal, 'Equitable Sharing of Biodiversity Benefits: Agreements on Genetic Resources' (Paper presented at the International Conference on Incentive Measures for the Conservation and the Sustainable Use of Biological Diversity, Cairns, Australia, 25-28 March 1996).

<sup>58</sup> Shane Greene, 'Indigenous People Incorporated? Culture as Politics, Culture as Property in Pharmaceutical Bioprospecting' (2004) 45(2) *Current Anthropology* 211-14.

<sup>59</sup> Ibid 215. Greene notes that, in fact, until recently the Consejo Aguaruna Huambisa was commonly presumed to represent a large proportion of the Aguaruna population.

<sup>60</sup> Ibid 215 -16. The Letter of Intention was not fully implemented, mainly because the Consejo Aguaruna Huambisa found out that Washington University had signed a separate agreement with G.D. Searle & Co (then Monsanto's pharmaceutical division). Such agreement was considered by some experts to be legally inconsistent when read together with the Letter of Intent signed with the Consejo. See also Walter H. Lewis, 'Analysis of the International Cooperative Biodiversity Group Project in Peru' (Paper presented at the Conference on Ethics and Practice in Ethnobiology, Washington University, 4-6 April 2003).

Aguaruna people.<sup>61</sup> After that, a consortium, namely *Confederación de Nacionalidades Amazonicas del Peru* (CONAP) and Affiliates, was established in order to represent the Aguaruna people in the new phase of the negotiations with ICBG.<sup>62</sup> In 1996, the CONAP and Affiliates signed a know-how license directly with Searle, and have signed a Biological Collecting Agreement with Washington University, the *University Peruana Cayetano Heredia*, and the *Museo de Historia Natural* of the *University Nacional Mayor de San Marcos*.<sup>63</sup> Even this consortium has been challenged by some Aguaruna communities, since the consortium organizations represent less than half the Aguaruna population. The medium-term benefits and advance payments will be made to the organizations and communities mentioned in the agreement. Long-term benefits would be available to all Aguaruna communities.<sup>64</sup>

### **The agreement between the Kani People and the Tropical Botanic Garden and Research Institute (TBGRI)**

The Kani people are a traditional nomadic people living across 30 settlements and villages in different areas in Kerala, India. Their population is around 17,000 persons. The Kani people do not have a homogenous structure. That is, Kani society is quite stratified.<sup>65</sup> One Kani community from the Kuttichal Gram Panchayat has authorized the Tropical Botanic Garden and Research Institute (TBGRI) to access and use their traditional knowledge associated with *Trichopus zeylanicus* spp. *travancoricus* (locally called *argyapaacha*). Such authorization and access were contested by Kani people from other areas or other communities, even by the Kani people from other Panchayat areas, who believe that the agreement terms were not sufficiently comprehensive or participatory. Further, numbers of the Kani people, specially the older generation, believe that such knowledge should not be revealed, as it is considered a tribal secret sacred to them. In addition, the elder tribe members have also expressed their

<sup>61</sup> Ibid 215. The activities were stopped and the 300 samples collected were returned to the Peruvian Ministry of Agriculture.

<sup>62</sup> The consortium was formed by the Condeferación de Nacionalidades Amazónicas del Perú (CONAP), Organización Central de Comunidades Aguarunas del Rio Maronon (OCCAAM), Federación Aguaruna del Rio Domingusa (FAD), Federación de Comunidades Nativas Aguaruna del Rio Nieva (FECONARIN), and Organización Aguaruna del Alto Mayo (OAAM).

<sup>63</sup> Ibid 217-18. For more information about the negotiation, content and conditions of these agreements, see also Lewis, above n 60. For more information about the effective implementation of these agreements, see Charles R. Mcmanis, 'Intellectual Property, Genetic Resources and Traditional Knowledge Protection: Thinking Globally, Acting Locally' (2001) *Cardozo Journal of International and Comparative Law* 550-70.

<sup>64</sup> Rosenthal, 'Equitable Sharing of Biodiversity Benefits: Agreements on Genetic Resources', above n 57.

<sup>65</sup> Anil K. Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge* (2004) WIPO <[http://www.wipo.int/tk/en/publications/769e\\_unep\\_tk.pdf](http://www.wipo.int/tk/en/publications/769e_unep_tk.pdf)> at 4 April 2006.



concerns about the loss of their cultural identity. In this context, a group of nine medicine men sent a letter to the Chief Minister of Kerala, expressing their opposition to the sale of their knowledge. In order to guarantee an equitable sharing of the benefits, a local trust fund known as 'Kerala Kani Samudaya Kshema Trust' was created by Kani people. The Trust was constituted by more than 700 Kani families, comprising approximately 65 per cent of the Kani population in the Western Ghats.<sup>66</sup> It aims to have all adult Kanis in Kerala as its members. Currently, Kanis in the Vithura and Permigamala Panchayat areas are opposed to this Trust.<sup>67</sup>

### **The Agreement between the Kraho People and the Federal University in São Paulo<sup>68</sup>**

The Kraho people live in the northern Tocantins. Its population is around 2,000 persons living across 17 different villages. An agreement, including a project aimed at determining the commercial value of plants traditionally used by the Kraho peoples, was signed in 2002 by the Federal University of São Paulo with an organization representing 250 of the 2,000 members of the Kraho communities. When the implementation of the project started those Kraho people who were not consulted and involved in the negotiation-process, therefore, unaware of such agreement, began to complain because of collection of samples of their biological resources and knowledge without prior permission. By then, the University had already collected over 400 samples and identified 164 plant species. The Kraho are now requesting US\$ 8 million from the Federal University of São Paulo, as compensation for the collection of medicinal plants and the access to associated traditional knowledge.

Two conclusions can be drawn from these examples. The first relates to the differences between the wishes of the holders of traditional knowledge. Some holders, or even members of a particular community, may want to protect their knowledge from economic exploitation, while others may not. Indigenous views about this issue may vary between communities, depending on whether a community has a more urban or rural lifestyle, whether a community has preserved its distinctive culture or has been assimilated to a greater degree into the

<sup>66</sup> Kerry ten Kate and Sarah A. Laird, 'Bioprospecting Agreements and Benefit Sharing with Local Communities' in Joseph Michael Finger and Philip Schuler (ed.), *Poor People's Knowledge Promoting Intellectual Property in Developing Countries* (2004) 133, 158. See also Gudrun Henne, Klaus Liebig, Andreas Drews and Thomas Plan, *Access and Benefit-Sharing (ABS): An Instrument for Poverty Alleviation - Proposal for an International ABS Regime* (2003) German Development Institute <[http://www.die-gdi.de/die\\_homepage.nsf/FSesuc?OpenFrameset](http://www.die-gdi.de/die_homepage.nsf/FSesuc?OpenFrameset)> at 13 May 2004.

<sup>67</sup> Gupta, above n 65.

<sup>68</sup> Patrice M. Jones, 'Brazilian Tribe Feels Betrayed by Plant Search', *The Seattle Times* Monday, September 16 2002, <<http://archives.seattletimes.nwsource.com/cgi-bin/texis.cgi/web/vortex/display?slug=btbiopiracy09&date=20020916&query=+%93Brazilian+tribe+feels+betrayed+by+plant+search%2C%94>> 23 September 2006.

mainstream society, or whether a community has an economy more affluent or self-sufficient than another.<sup>69</sup> Therefore, there is need for a mechanism to conciliate the wishes and/or adjudicate on the differences.

The second conclusion refers to the complexities and the extensive number and levels of indigenous political organizations. Sometimes, it is difficult if not impossible to determine who has the authority or mandate to represent and make decisions on behalf of a particular indigenous people.<sup>70</sup> Moreover, in many cases these organizations do not even represent the totality of indigenous peoples who share the same traditional knowledge. In addition, it would be very difficult, and sometime impossible, to involve and to get consensus among all indigenous peoples' representative organizations, regarding development of a framework to protect traditional knowledge. Therefore, neither an individual representative organization nor a particular indigenous people may have the rights to decide about the access to, and protection of traditional knowledge shared by two or more indigenous peoples. Instead, indigenous peoples should have (at each level) one unique and special organization to represent and express common concerns and interests regarding the issue of their traditional knowledge. Such an organization should represent the totality of indigenous peoples that share the same knowledge.

#### **D      *Validity of Customary Law and the Principle of Locality***

The lack of jurisdiction and enforceability of customary law outside of the indigenous community limits its use as a means of protecting traditional knowledge against misuse by third parties beyond the traditional and customary context.

In general terms, the validity of customary law is restricted to the ethnicity of the group to which it belongs.<sup>71</sup> One of the consequences of this is that customary law lacks jurisdiction and enforceability outside the indigenous community.<sup>72</sup> Although customary laws can be enforced through sanctions within the community and function as regulatory principles to

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<sup>69</sup> William O. Hennessey, *A Conceptual Framework for Recognition of Rights for the Holders of Traditional Knowledge and Folklore* <[http://www.ipmall.info/hosted\\_resources/pubspapers/hennessey\\_020128.htm](http://www.ipmall.info/hosted_resources/pubspapers/hennessey_020128.htm)> at 17 May 2006.

<sup>70</sup> Gupta, above n 65.

<sup>71</sup> Emma Cervone, *The Predicaments of Diversity Share the Worlds' Resources* (STWR) <<http://www.stwr.net/modules.php?name=Content&file=print&pid=291>> at 22 November 2005.

<sup>72</sup> See Chapter 2 of this thesis for information about Amazon indigenous peoples' jurisdiction. See also Tobin, *Customary Law as the Basis for Prior Informed Consent of Local and Indigenous Communities*, above n 51. See also Kuruk, above n 23, 19.

administer the access to traditional knowledge, the ability to enforce them in court is limited.<sup>73</sup> In addition, even at national level, customary law alone cannot protect or regulate the access to traditional knowledge which is no longer under the exclusive control of the indigenous peoples.<sup>74</sup> Neither is customary law sufficient to regulate access to traditional knowledge in the international context of research, trade and industry,<sup>75</sup> as the enforcement of rights established by international instruments occurs through the operation of states laws.<sup>76</sup> It is worth remembering that in most cases the use or application of traditional knowledge takes place overseas - this is particularly so for traditional knowledge from Southern-hemisphere countries which have limited scientific capacity and financial and human resources.<sup>77</sup>

### **E Customary Law and the Collective Character of Traditional Knowledge**

Another reason for the difficulties in applying customary law to protect traditional knowledge arises from the assumption that traditional knowledge is deemed to be collectively created by the transmission and sharing of knowledge between individuals, families, communities and generations. While some specialized knowledge may be held exclusively by males, females or certain individuals (such as shamans), decision-making often requires the sharing of knowledge, as no individual family or clan has sufficient knowledge to act alone.<sup>78</sup> As a result, in many cases there is no clear separation between what belongs to all communities, to a specific community, and to individuals within the communities.<sup>79</sup> Further, the nature of interest in and value given to, for example, a particular wide-ranging plant variety or cultivar and the associated knowledge, may vary from one community to another, in accordance with the customary laws of each community. For example, a particular plant or species may have a different significance in the cultural, economic, and religious life of one community to that in

<sup>73</sup> For examples of the use of customary laws as evidence in deciding intellectual property claims, see *Milpururru v Indofurn Pty Ltd* (1995) AIPC, 91-116) and confidentiality cases (*Foster v Mountford* (1976) 29 FLR 233).

<sup>74</sup> Brendan Tobin and Krystyna Swiderska, *Speaking in Tongues: Indigenous Participation in the Development of a Sui Generis Regime to Protect Traditional Knowledge in Peru*, Participation in Access and Benefit-Sharing Policy (2001) 9.

<sup>75</sup> Tobin, *Customary Law as the Basis for Prior Informed Consent of Local and Indigenous Communities*, above n 51.

<sup>76</sup> Gurdial Singh Nijar, 'Developing a 'Rights Regime' in Defence of Biodiversity and Indigenous Knowledge' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 233, 39.

<sup>77</sup> Jack Ralph Kloppenburg, *First the Seed: The Political Economy of Plant Biotechnology, 1492-2000* (1988) 189.

<sup>78</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(j) and Related Provisions, *Development of Elements of Sui Generis System for the Protection of Traditional Knowledge, Innovations and Practices. Protection of Traditional Knowledge and the Concept of 'Collective Bio-Cultural Heritage'* UNEP/CBD/WG8J/4/INF/18, 4th mtg, [Para. 5], (2006).

<sup>79</sup> Dutfield, 'TRIPS-Related Aspects of Traditional Knowledge', above n 33, 245.

another.<sup>80</sup> Further, in many cases it may not be possible to establish an exclusive or particular linkage between the traditional knowledge and one specific indigenous people – or, in some cases, individual communities within a broader ethnic group.<sup>81</sup> Here the question is: ‘Which indigenous customary law should be considered legitimate to regulate the negotiation?’ This is particularly the case where several indigenous peoples have traditionally shared identical or similar traditional knowledge and plant genetic resources, as many countries and peoples would claim the right to apply their customary laws. Further, it may be difficult, if not impossible, to bring all indigenous peoples possessing the same, or similar, knowledge together in agreement and establish the same conditions for authorizing the access to their knowledge.<sup>82</sup>

#### IV INTERACTING STATUTORY/Common LAW SYSTEMS AND CUSTOMARY LAW SYSTEMS

The examination in the preceding sections has shown that it might be inappropriate or impractical to structure a *sui generis* system that exclusively incorporates concepts from customary laws to regulate the protection and access to traditional knowledge. The extent to which customary laws can effectively regulate access to associated traditional knowledge depends on the identification, understanding and management of the interfaces, similarities and differences between customary law and the statutory and common law systems. Further, legal certainty and competency to authorize access and to represent the holders of the knowledge are essential.

In approaching the issue of the interface between statutory and common law and customary law systems, Weeramantry, the former Vice President of the International Court of Justice, has pointed out that significant differences exist between principles underlying these systems.<sup>83</sup> The first difference mentioned is that, in general, common or statutory legal systems recognize (exclusively) rights of the present generation of human beings, while in

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<sup>80</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(j) and Related Provisions, *Development of Elements of a Sui Generis System for the Protection of Traditional Knowledge, Innovations and Practices*, 3rd mtg, [IV, Para.14], UNEP/CBD/WG8J/3/7, (2003).

<sup>81</sup> Taubman, above n 8, 540.

<sup>82</sup> Jorge Caillaux and Susanna E. Clark, 'A Brief Review of Legislation on Access to Genetic Resources and the Protection of Traditional Knowledge in Selected Megadiverse Countries' in Burton Ong (ed.), *Intellectual Property and Biological Resources* (2004) 226, 238.

<sup>83</sup> Christopher G. Weeramantry, 'Sustainable Development: An Ancient Concept Recently Revived' (Paper presented at the Global Judges Symposium on Sustainable Development and the Role of Law, Johannesburg, South Africa, 2003).

customary law systems the present generation acknowledges a duty to look beyond itself to those who are to come after as well as to reflect on the past and acknowledge those who went before. The long-term view which embraces the rights and needs of future generations dictates the utilization of natural resources.<sup>84</sup> The second difference refers to the subject of rights. While under statutory and common legal systems only human beings can be the subject of rights, traditional laws provide a very deep understanding of the rights of all (other) living creatures. The third difference refers to allocation of rights. The statutory and common laws have generally concentrated on the rights of individuals. That is, there is a great emphasis on individualism, as though only individuals have rights. Traditional laws and traditional societies are built not only on the basis of individual rights, but also on the basis of group rights or collective rights.<sup>85</sup> The notion of group and collective rights derives from the principle of mutual respect and proper and respectful behavior within and between different indigenous peoples, membership in the family, and kinship obligations. The fourth difference is that while statutory and common legal systems are more focused on rights rather than duties, by contrast traditional laws are more focused on duties. Every individual has duties towards his or her group, clan, family and kin; the infringement of which always incur sanctions. The fifth difference refers to the concept of ownership. The statutory and common legal systems may give the owner of property the absolute right to do with his/her property what he or she wants. Where the same concept of absolute property is extended to land, the owner of the land can treat it as movable property (if he or she wants). The owner of movable property can destroy it if he/she so pleases. Likewise, if the owner's rights are absolute, he/she can mine it to destruction, bury noxious waste in it, cut down forests and reduce the property to a barren waste. He/she can do what he/she will, for he/she is the absolute owner. Under traditional law, in most cases, land is held in communal trust; it belongs to all members of the community. The natural resources are required to be used in a sustainable way, along with imposed limitations on forest clearance and restriction on hunting certain species, and protection of sacred groves and plants.

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<sup>84</sup> Kastrup, 'Internationalization of Indigenous Rights from the Environmental and Human Rights Perspective, The Symposium on Sustainable Development in Latin American Rainforests and the Role of Law' José Paulo Kastrup, 'Internationalization of Indigenous Rights from the Environmental and Human Rights Perspective, The Symposium on Sustainable Development in Latin American Rainforests and the Role of Law' 32 *Texas International Law Journal* 97-102.

<sup>85</sup> Peter-Tobias Stoll and Anja Von Hahn, 'Indigenous Peoples, Indigenous Knowledge and Indigenous Resources in International Law' in Silke von Lewinski (ed.), *Indigenous Heritage and Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore* (2004) 4, 12. Stoll and Von Hahn emphasize that individual rights also exist in indigenous culture. However, the exercise of these rights should be balanced with collective rights, accordingly to their customary law.

Yet in this regards, Stavenhagen says that 'what characterizes customary law is precisely that it is a series of customs recognized and shared by group (community, people, tribe, ethnic or religious group etc), contrary to written laws which stem from a constituted political authority, and whose application is in the hands of this authority, i.e. generally the State. The fundamental difference therefore appears to be that positive law is linked to State power, insofar as customary law is specific to societies lacking a State, or simply operates without reference to the State.'<sup>86</sup>

According to Daes, the fundamental difference between indigenous customary law and the existing intellectual property rights arises from the concept of collective ownership of the rights. In particular, Daes said that:

[i]ndigenous peoples do not view their heritage in terms of property at all - that is, something which has an owner and is used for the purpose of extracting economic benefits - but in terms of community and individual responsibility... For indigenous peoples, heritage is a bundle of relationship, rather than a bundle of economic rights.'<sup>87</sup>

The challenge is to accommodate the differences between customary laws and the state normative systems. In other words, the challenge is to devise a framework by which several systems of rules can co-exist rather than conflict. Tobin argues that the articulation between statutory/common law and customary law systems is best achieved by focusing not only on the normative rules, but also on the interface between systems or processes of decision making.<sup>88</sup> A further challenge is to distinguish between those matters where it can be left to indigenous peoples to determine the rules and those issues that require a broader framework.<sup>89</sup> In summary, the challenge is to determine the extent to which indigenous peoples' rights over traditional knowledge granted by their customary laws can be enforced before the courts of a country.

## **V THE EXTENT OF THE APPLICATION OF CUSTOMARY LAW WITHIN THIS THESIS**

From a practical standpoint no one legal framework will be able to accommodate the diversity of traditional laws or to promote their articulation within an international standard of

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<sup>86</sup> IADB Inter-American Development Bank 'Indigenous Peoples and Constitutional Rights in Latin America '. 2<sup>n</sup> ed. CD format, Bolivia (2004).

<sup>87</sup> Daes, above n 39, 3.

<sup>88</sup> Tobin, *Derecho Consuetudinario y Diplomacia Internacional*, above n 1.

<sup>89</sup> Sherman and Wiseman, above n 2, 274.

intellectual property rights. The integration of customary laws and positive laws should not require the comprehensive adoption of all traditional principles, values and practices. Thus, it is argued here that the issue of customary law as a mechanism to protect traditional knowledge should be approached in a narrower way, rather than a broader context. With a broader approach, all aspects of customary law systems need to be included or considered, while a more restricted approach is limited to those principles, and more specifically to those norms or rules and decision-making procedures, that are common to particular indigenous peoples, as well as those that are considered by them as essential for respecting their values and protecting and defending their traditional knowledge against misappropriation. This is particularly the case with the issues of ownership, the management of rights, the equitable sharing of benefits within communities, customary procedures governing access to and consent to use traditional knowledge, dispute settlement resolution process, and other equitable interests.<sup>90</sup>

While specific customary laws vary significantly between cultures and ecological contexts, there is a substantial degree of similarity in the underlying philosophies that regulate customary law and in the principles or values that influence how people interact with nature, their resources and each other.<sup>91</sup> In order to create conditions for the application of the customary law in issues related to protection and access to traditional knowledge, there is a need to identify within existing customary laws a more settled set of rights (or rights less vulnerable to variation within different communities), general concepts and equitable principles. The settled set of rights, along with the more important and common principles should provide a clear understanding of how customary law and collective rights should guide external access to natural resources and associated traditional knowledge. Another important issue will be benefit-sharing mechanisms. Such principles should also provide for justice, equity and sustainability of the application of customary law at all levels. In many cases indigenous peoples support the view that a community protocol, drawn from a series of

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<sup>90</sup> Taubman, above n 8, 525 and 555. Taubman suggests that it is possible to take a selective, functional approach to the recognition of customary law by drawing on those aspects of customary knowledge management systems that are already analogous to conventional intellectual property rights systems.

<sup>91</sup> International Institute for Environment and Development (Iide), Association Andes, Dobbo-Yala Foundation, University of Panama, Chinese Centre for Agricultural Policy, Southern Environmental & Agricultural Policy Research Institute, Kenya Forestry Research Institute, Centre for Indigenous Farming Systems, Ecoserve and Herbal and Folklore Research Centre, *Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws & Practices* (2005) International Institute for Environment and Development (IIDE) <[http://www.iied.org/NR/agbioliv/bio\\_liv\\_documents/TradKnowledgeSummaryOctober05.pdf](http://www.iied.org/NR/agbioliv/bio_liv_documents/TradKnowledgeSummaryOctober05.pdf)> at 3 February 2006. See also Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies, and Institutions* (2003) 32.

overlapping community protocols amongst peoples having the same knowledge, should determine the conditions for access to traditional knowledge.<sup>92</sup>

Some efforts to enhance the role of customary laws in the protection of traditional knowledge have already been made.<sup>93</sup> One such example is the Project 'Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices' which has been undertaken in Peru, Panama, India, Kenya and China with the involvement of International Institute for Environment and Development (IIED) and other national institutions.<sup>94</sup> This Project concluded that customary law principles in Peru are very similar to those of indigenous peoples in other countries, such as Panama, Kenya, India and China, even though the nomenclature may vary.<sup>95</sup>

Such set of general principles should be used as a basis for the creation of a comprehensive and legally-binding *sui generis* system. This could include substantive customary law

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<sup>92</sup> This suggestion was presented by indigenous peoples from Peru at two workshops held with representative organizations of indigenous peoples which had participated in the Peru ICBG negotiations. For more details, see Tobin, 'Towards an International Regime for Protection of Traditional Knowledge: Reflections on the Role of Intellectual Property Rights', above n 31.

<sup>93</sup> The World Conservation Union (IUCN), the United Nations University - Institute of Advanced Studies (UNU-IAS) and the World Intellectual Property Organization (WIPO) in collaboration with indigenous and legal experts are also promoting a regional (Andean countries) study to identify the goals to strengthen and/or to establish the conditions necessary to assure an effective relation between customary law and positive rights on national, regional and international levels.

<sup>94</sup> The main objectives of this project are to identify: (i) the customary laws and practices of indigenous and local communities relevant for controlling external use of traditional knowledge, (ii) the implications for the development of mechanisms to protect traditional knowledge, at local, national and international levels, and (iii) to provide the findings and conclusions to policy makers (local, state and national authorities, the CBD, WIPO, WTO and Indigenous Rights fora). See (Iide), Andes, Foundation, Panama, Policy, Institute, Institute, Systems, Ecoserve, Herbal and Centre, *Protecting Community Rights over Traditional Knowledge: Implications of Customary Laws and Practices. Project Summary*, above n 91. See also UNEP/CBD/WG8J/4/INF/18, *Development of Elements of Sui Generis System for the Protection of Traditional Knowledge, Innovations and Practices. Protection of Traditional Knowledge and the Concept of 'Collective Bio-Cultural Heritage'*, above n 78.

<sup>95</sup> Ibid. It was found that the key customary principles of Quechua peoples are the following: (i) reciprocity: what is received has to be given back in equal measure. It encompasses the principle of equity, and provides the basis for negotiation and exchange between humans, and with Mother Earth. (ii) duality: this principle is inherent in the principle of reciprocity. Indigenous peoples believe that an individual serves a dual function in a society: one, as individual and the second one as a part of a collective. As a result, behaviour cannot be individualistic; (iii) equilibrium: refers to balance and harmony, in both nature and society, as indigenous peoples believe that their knowledge and resources derive from the supernatural powers and the cosmic world. By the application of these principles, the collective management and ownership of lands are upheld on the principles of reciprocity and equilibrium. The collective decision making process which is based on equitable participation and faith in traditional authorities, is supported on the principle of equilibrium. The opening of access to, and sharing of, traditional knowledge and genetic resources is based on the reciprocal relation between a resource provider and a resource user and is upheld on the principle of reciprocity. Benefit-sharing guaranteed to all is based on principles of reciprocity and equilibrium. The principles that guide the Kuna, Embera and Wounaan peoples' life are: reciprocity, solidarity, unity and equilibrium, as well as duality and equity. For the Mijikenda people (from Kenya) the most important principles are the principles of equilibrium and duality. The Yanadi people's (from India) culture includes principles of common property, reciprocity or collective sharing and harmony.



principles related to definition of the scope and ambit of protection of traditional knowledge and the rules for access, prior informed consent and distribution of benefits.<sup>96</sup> In addition, it should also enable the validity of these principles and rights recognized under customary laws to extend beyond indigenous communities.<sup>97</sup> The underlying rationale of this recommendation is that a focus on common elements and rights should facilitate the articulation of customary law within the official legal system and consequently facilitate development of an effective, appropriate and accessible mechanism to protect traditional knowledge. According to Cruz, 'the very process of developing law on the basic value and belief systems of a particular group's foundational principles of relationship, social values and beliefs would not allow for the wholesale adoption of external law, without consideration of how or whether that law is in accord with the underlying norms of the society. This instills culture and tradition in the public law of the nation.'<sup>98</sup>

What may be problematic about this statement is that, as the indigenous organization Four Directions Council noted, 'any attempt to devise uniform guidelines for the recognition and protection of indigenous peoples' knowledge runs the risk of collapsing this rich jurisprudential diversity into a single 'model' that will not fit the values, conceptions or laws of any indigenous society.'<sup>99</sup>

While a single model for traditional knowledge protection may supplant the rich jurisprudence which arises from the diversity and application of customary laws, arguably a regional *sui generis* regime for the protection of traditional knowledge shared among different indigenous peoples remains a realistic and workable tool in coordinating the granting of the rights over similar or identical traditional knowledge to different holders under different jurisdictions. Therefore, the need to take account of local and regional situations due to the diversity of traditions, cultures and beliefs amongst indigenous peoples living in the Amazon,

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<sup>96</sup> Sherman and Wiseman, above n 2, 276. Sherman and Wiseman support that 'customary law could set the parameters and define the scope and ambit of protection over local knowledge'. See also World Intellectual Property Organization, 'Intellectual Property Needs and Expectations of Traditional Knowledge Holders, WIPO Report on Fact-Finding Missions on Intellectual Property and Traditional Knowledge (1998-1999)' (WIPO, 2001) 155. The WIPO fact-finding mission reported a view that customary law and practice 'should be explored as a possible basis for the international protection of TK.'

<sup>97</sup> Tobin, *Customary Law as the Basis for Prior Informed Consent of Local and Indigenous Communities*, above n 51. See also Taubman, above n 8, 551.

<sup>98</sup> Cruz, above n 22.

<sup>99</sup> Four Directions Council, 'Forests, Indigenous Peoples and Biodiversity', submission to the Secretariat for the CBD, 1996. See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *The Protection of Traditional Knowledge: Outline of Policy Options and Legal Elements*, 7th sess, [Para. 12], WIPO/GRTKF/IC/7/6, (2004).

is one of the core recommendations that will be made in this thesis. Proposals to advance this argument will be presented in Chapter 9.

This thesis acknowledges and recognizes indigenous peoples' concerns about the codification of customary law in statutory form. They argue that codification may restrict the dynamism of customary laws by freezing in place the customs in effect at the time they are codified and may also affect the flexibility of customary law. One way of responding to this is to suggest that the codification would provide a basis for transparency, common understanding and certainty regarding the rules and norms governing access to and use of traditional knowledge. In short, customary laws should be codified to some extent, so that companies and industries interested in using traditional knowledge would have a reference point. Further, only the elements of customary law that are related to access to and use of traditional knowledge should be codified.

## **VI SUMMARY OF FINDINGS**

This chapter has shown that while there are positive features in using customary law and respecting indigenous peoples' institutions and decision-making processes – particularly in so far as this can help to protect the rights of indigenous peoples and also ensure a fairer application of the rule of law - the protection and regulation of access to traditional knowledge through customary law (exclusively) may lead to a number of specific concerns. For example, it would be difficult for individuals and corporations interested in using traditional knowledge to identify whether an element of traditional knowledge is protected or not, what the exact limits of the protection are and who the rights-holders are. In addition, it may prevent potential users from having a clear and streamlined understanding of the rules and conditions for obtaining access to traditional knowledge. The key problem is that the use of customary law may create situations where companies prefer one indigenous people or community over others because of the appeal of their customary access regulations. This situation may create unfair competition among indigenous peoples, as one group may seek to make their laws more flexible, may breach or run counter to their customary laws, or allow access to their knowledge for lower prices at the expense of other groups. Another problem is that as customary law is often not codified and relies on tradition, it would be difficult to provide an adequate basis for legal remedies that reach beyond the originating community. In addition, it would be costly and difficult for indigenous peoples to define, prove or provide the evidence of the normative content of the customary law and its breach. Given that, this

thesis concludes that in order to provide effective protection, a system aimed at protecting traditional knowledge should not be based exclusively on indigenous peoples' traditional law. Such protection would have to be established within and, more importantly, outside of the community and beyond the respective jurisdiction of customary law, in order to be effective and enforceable.

It has been argued in this chapter that the extent to which customary laws can be effective in regulating access to associated traditional knowledge depends on the identification, understanding and management of the interfaces, similarities and differences between customary law and the official legal system. Further, legal certainty and obvious competence to authorize the access to and to represent the holders of the knowledge are essential.

## CHAPTER 8

### PROTECTION OF TRADITIONAL KNOWLEDGE IN THE AMAZONIAN COUNTRIES

#### I INTRODUCTION

This chapter critically examines the existing legal and administrative measures at the international, regional and national levels that have been adopted by Amazonian countries to protect traditional knowledge. The main objective of this chapter is to identify the key concepts, scope and nature of the rights recognized and, in particular, the capacity – especially as regards the associated strengths and weaknesses- of the existing legislation to protect traditional knowledge. An additional aim is to identify the main issues arising from the actions which have been taken in this regard, to determine what actions remain to be taken, and the issues that require consideration by a regional *sui generis* regime. The chapter focuses essentially on primary and subsidiary legislation related to the regulation of the protection and access to traditional knowledge. There is no intention to be exhaustive, whether within the examination of the role of indigenous peoples in the establishment of state policies and the legislation related to recognition of their rights,<sup>1</sup> or in the coverage of the mentioned legislation.

At the national level, the Member Countries of the Andean Community will be examined first. This is because they have adopted a common regime to protect traditional knowledge through *Andean Community of Nations Decision 391: Common Regime on Access to Genetic Resources* (Decision 391).<sup>2</sup> Special attention will be given to Peru, since it is the only Andean country which has enacted a special law to protect traditional knowledge. The Venezuelan and Brazilian legislations will then be examined before the Guyanese and Surinamese legislation which provide less protection to indigenous peoples' needs and interests. The comparative analysis in this chapter provides a useful framework in which to understand the complexities of regulatory systems and the challenges of generating a uniform protection system.

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<sup>1</sup> For background on indigenous political organization and mobilization, see Donna Lee Van Cott (ed.), *Indigenous Peoples and Democracy in Latin America* (1994) 13. See also Donna Lee Van Cott, *The Friendly Liquidation of the Past: The Politics of Diversity in Latin America* (2000) 5.

<sup>2</sup> *Andean Community of Nations Decision 391: Common Regime on Access to Genetic Resources*, opened for signature, 2 July 1996 (entered into force 2 July 1996) <<http://www.comunidadandina.org/INGLES/normativa/D391e.htm>> at 15 September 2006.

As stated previously, the commitment and the legal obligations to respect, preserve, maintain and protect traditional knowledge derive from many sources. The most significant provisions, however, are found in the *Convention on Biological Diversity* (CBD).<sup>3</sup> In the course of the last decade, important measures have been taken by Amazonian countries to protect, promote and preserve traditional knowledge. To achieve these goals, the Amazonian countries are adopting, individually and as a group, special measures at international, regional and national level.

## II MEASURES ADOPTED BY THE AMAZONIAN COUNTRIES

### A *At International Level*

One of the most positive aspects of protecting traditional knowledge in the Amazon region lies in the fact that all Amazonian countries have signed and ratified the CBD.<sup>4</sup> In addition, Brazil, Colombia, Peru and Venezuela have signed and ratified the *International Treaty on Plant Genetic Resources for Food and Agriculture* (FAO Treaty). Further, some of them these nations (those which are considered megadiverse countries) have also adopted the *Cancun Declaration of Like-Minded Megadiversity Countries*.<sup>5</sup>

Through the *Cancun Declaration*, Brazil, China, Colombia, Costa Rica, Ecuador, India, Indonesia, Kenya, Mexico, Peru, South Africa and Venezuela have formally created a group named the *Group of Like-Minded Megadiversity Countries* (LMMC). After its creation, Bolivia, Malaysia and the Democratic Republic of Congo joined the Group. Over 70 per cent

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<sup>3</sup> There are also other conventions and agreements, such as *Agenda 21*, the *Statement of Principles on Forest*, and the *United Nations Convention to Combat Desertification*. See Chapter 5 of this thesis for more information about the commitment made by Amazonian countries.

<sup>4</sup> The *Convention on Biological Diversity* (CBD) was signed and ratified, respectively, by Bolivia on 13/06/1992 and 3/10/1994; by Brazil on 05/06/1992 and 28/02/1994; by Colombia on 12/06/1992 and 28/11/1994; by Ecuador on 09/06/1992 and 23/02/1993; by Guyana on 13/06/1992 and 29/08/1994; by Peru on 12/06/1992 and 07/06/1993; by Surinam on 13/06/1992 and 12/01/1996 and by Venezuela on 12/06/1992 and 13/09/1994.

<sup>5</sup> *Cancun Declaration of Like-Minded Megadiversity Countries*, opened for signature 18 February 2002, (entered into force 18 February 2002) ('Cancun Declaration') Art. 1 (d, h and m). <[http://www.unido.org/file-storage/download/?file\\_id=11803](http://www.unido.org/file-storage/download/?file_id=11803)> at 9 June 2005. Russell A. Mittermeier and Cristina Goettsch Mittermeier, *Megadiversity Earth's Biologically Wealthiest Nations* (1997) 31. The author mentions that the top 15 Megadiversity Countries are: Brazil, Colombia, Indonesia, Peru, Mexico, China, Australia, Ecuador, India, Venezuela, Bolivia, Madagascar, the Democratic Republic of Congo, the Philippines and South Africa.

of global biological diversity is located within the territory of these 15 countries.<sup>6</sup>

The LMMC was created as a special mechanism for reciprocal consultation and cooperation that aims to promote the Member Countries' common interests and priorities which relate to the preservation and sustainable use of biological diversity. The purposes of the LMMC include:

- (i) the coordination and promotion of prior discussions among the Member Countries to enable them to present, as far as possible, common positions and joint proposals in the international fora on various issues associated with access to and conservation of biological diversity, benefit-sharing, traditional knowledge and intellectual property rights;
- (ii) the harmonization of their respective national legislations related to the protection of, and access to, biological and genetic resources and associated traditional knowledge, and sharing of benefits;
- (iii) the promotion and development of a *sui generis* regime to protect traditional knowledge;
- (iv) the encouragement of adjustments to the current system of intellectual property rights in order to ensure that the contribution of traditional knowledge is taken into account in the process of requests for patents and other related rights; and
- (v) the adoption of joint measures to combat the illegal acquisition of genetic resources.

The LMMC acts as a group. It has already made significant contributions and proposals in the CBD context, including statements reflecting its joint position. Concerns have been expressed by the LMMC drawing attention to the need to create an international regime on access to genetic resources and traditional knowledge which will also provide for the regulation of the benefit-sharing arising from their use. Further, the LMMC's willingness to participate in international negotiation and debates to influence the outcome on various issues in the

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<sup>6</sup> The initial commitment and objectives of the LMMC were confirmed through the adoption, in 2002, of the *Cusco Declaration on Access to Genetic Resources, Traditional Knowledge and Intellectual Property Rights of Like-minded Megadiversity Countries*, and more recently, the adoption, in 2005, of the *New Delhi Ministerial Declaration of Like Minded Megadiversity Countries on Access and Benefit Sharing*. See *Cusco Declaration on Access to Genetic Resources, Traditional Knowledge and Intellectual Property Rights of Like-minded Megadiverse Countries*, opened for signature 29 November 2002, (entered into force 29 November 2002) ('Cusco Declaration') <<http://www.comunidadandina.org/ingles/document/cusco29-11-02.htm>> at 18 November 2005.

international arena- especially where matters relating to access to genetic resources and traditional knowledge are concerned- along with its active participation in international negotiation and debates, has been acknowledge by the World Conservation Union (IUCN) in their affirmation that the LMMC has been the major and most effective voice in emphasizing the areas of inequity. Interestingly, these areas of inequity have tended to be linked to the failure of developed countries to meet their obligation.<sup>7</sup>

For Brazil, Bolivia, Colombia, Ecuador, Peru and Venezuela, membership of the LMMC represents a significant opportunity to ensure that their common interests, as well as their individual-nation interests, are taken into account in negotiations at international level.

## **B      *At the Amazon Regional Level***

At a regional level, the Amazonian countries have undertaken important initiatives to regulate access to genetic resources and associated traditional knowledge. In 1978, the Amazonian countries signed a *Treaty for Amazon Cooperation* (TCA)<sup>8</sup> and in 2000 and 2004 respectively they adopted the *Caracas Declaration*<sup>9</sup> and the *Declaration of Manaus*.<sup>10</sup>

### **1      *The Amazonian Parliament***

One of the main significant actions jointly taken by the Amazonian countries was the creation of the Amazonian Parliament. The Amazonian Parliament is a regional body of a permanent nature established to bring together parliamentarians from Brazil, Bolivia, Colombia, Ecuador, Guyana, Surinam, Peru and Venezuela. It was created in 1989 on the initiative of the Peruvian Chamber of Members of the House of Representatives. The Amazonian Parliament is steadfast in its interest in providing for the coordination of the legislative actions taken to protect the biodiversity of the Amazon rainforest and for the potential promotion of the

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<sup>7</sup> World Conservation Union (Iucn), *Like-Minded Megadiverse Countries Have their First Voice in CITES. 12th Conference of the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora* (2002) World Conservation Union (IUCN) <[http://www.iucn.org/en/news/archive/2001\\_2005/press/cites\\_0811.pdf](http://www.iucn.org/en/news/archive/2001_2005/press/cites_0811.pdf)> at 17 April 2006.

<sup>8</sup> *Treaty for Amazon Cooperation*, opened for signature 3 July 1978, (entered into force 3 July 1978) (TCA). <[http://www.internationalwaterlaw.org/RegionalDocs/amazonian\\_cooperation.htm](http://www.internationalwaterlaw.org/RegionalDocs/amazonian_cooperation.htm)> 13 August 2006.

<sup>9</sup> *Caracas Declaration*, opened for signature 6 April 2000, (entered into force 6 April 2000) ('Caracas Declaration') <<http://www.summit-americas.org/Energy/Energy-CaracasDEC.htm>> at 23 March 2003.

<sup>10</sup> *Declaration of Manaus*, opened for signature 14 September 2004, (entered into force 14 September 2004) (Declaration of Manaus). The Declaration was adopted by Ministers of Foreign Affairs of Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname and Venezuela, during the 8th Meeting of Chancellors of the Member States of the Amazon Cooperation Treaty <<http://www.otca.org.br/en/institucional/index.php?id=1084>> at 15 September 2005.

sustainable development of the Amazon region. Further, it seeks to harmonize the current legislation and to strengthen cooperation between its Member Countries.

To date, the Amazonian Parliament has not been involved with the issue of the protection of traditional knowledge. However, the potential exists for the Amazon Parliament to play an important role in the protection of this important asset. This potential could be manifested by the Parliament's participation in the process of the facilitating the harmonization of the existing legislation or in the creation of a regional *sui generis* regime to protect traditional knowledge held or shared by Amazonian indigenous peoples.

## **2    *The Treaty for Amazon Cooperation (TCA)***

Another important buttress for the protection of traditional knowledge in the Amazon derives from the *Treaty for Amazon Cooperation*. The main objectives of this Treaty are to promote the balanced development of the region, the conservation of nature and the rational use of Amazonian genetic resources. It does this by establishing cooperation programmes on issues such as social development, infrastructure and physical integration, trade and integration, science and technology, protection of biodiversity and intellectual property. At the present time, the TCA is constituted as an international organization called the Amazon Cooperation Treaty Organization (ACTO).<sup>11</sup>

Although the rights of the indigenous peoples over their traditional knowledge were not included in the main objectives of the original TCA, these rights received special attention latterly in the ACTO Strategic Plan for 2004/2012.<sup>12</sup> The Plan includes the following recommendations and activities which ACTO is expected to implement: (i) promote dialogue between Member Countries and indigenous populations about traditional knowledge and, as far as possible, generate consensus about the actions needed to protect traditional knowledge; (ii) promote the sustainable use, trade and consumption of Amazonian products and services; (iii) stimulate the creation of a regional programme of training for indigenous leaders, and (iv) create alliances and strengthen technical and legal support to counter common threats of bio-piracy, the illegal trade in wild fauna and flora, as well as for the protection of rights to

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<sup>11</sup> *The Amazon Cooperation Treaty Organization (ACTO)* has a permanent Secretariat based in Brasilia, Brazil. For more information about the ACTO <<http://www.otca.org.br/en/institucional/index.php?id=30>> at 13 October 2006.

<sup>12</sup> Amazon Cooperation Treaty Organization (Acto), *Strategic Plan 2004/2012* ACTO <[http://www.otca.org.br/PDF/Strategic\\_Plan.pdf](http://www.otca.org.br/PDF/Strategic_Plan.pdf)> at 18 November 2005.



intellectual property and patents on names, products and goods of Amazon origin, and the associated traditional knowledge.

The issues of intellectual property rights and traditional knowledge receive more specific attention in the *Caracas Declaration* and also the *Declaration of Manaus*.

### **3     *The Caracas Declaration and the Declaration of Manaus***

The great strength of the *Caracas Declaration* and the *Declaration of Manaus* with regard to the protection of traditional knowledge is the acknowledgement by the Amazonian countries that a joint approach is vital where the presence of a regional framework to protect traditional knowledge at Amazon level is lacking. This is because the difference in protective laws and access requirements among neighboring countries could disadvantage certain countries over others. For instance, it is likely that users or exploiters of traditional knowledge will be attracted by countries with a system which is considered more flexible or easier to deal with. The capacity to act in concert diminishes the power exercisable by economically stronger countries to pursue predatory tactics against Amazonian indigenous peoples possessing traditional knowledge.

In 2000 the Latin American countries signed the *Caracas Declaration* which aimed at promoting respect for the human and civil rights of their peoples. Through this achievement Latin American countries have reached a consensus on the need to ensure equity, to advance the recognition of human rights, to achieve equality, and to pursue social justice for the whole population. Further, the importance of the role played by indigenous peoples in the conservation of the Amazon rainforest was acknowledged, and Member Countries agreed to coordinate their positions regarding intellectual property and, in particular, the protection of traditional knowledge.<sup>13</sup> These commitments were reinforced through the adoption of the *Declaration of Manaus*, where the subscribing Governments granted priority to the adoption of a joint position (at international level) on the subjects of access to biological diversity and access and protection of indigenous peoples' traditional knowledge.<sup>14</sup> A collateral aim is to develop the Amazonian countries' capacity to formulate and negotiate an international regime which guarantees access to genetic resources and the fair and equitable distribution of the benefits arising from their utilization.

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<sup>13</sup> *Caracas Declaration*, above n 9.

<sup>14</sup> *Declaration of Manaus*, above n 10.

## C      *At Andean Community Level*

One of the most positive actions at the Andean Community level has been the recognition of the need to adopt a special regime to provide - or, at least, to harmonize - the national legislation for the protection of intangible components associated with the genetic resources of the Andean Nations. In this sense, the Andean Community of Nations<sup>15</sup> has adopted the *Common Regime on Plant Varieties Breeders' Rights* (Decision 345),<sup>16</sup> the *Common Regime on Access to Genetic Resources* (Decision 391),<sup>17</sup> the *Common Intellectual Property Regime* (Decision 486),<sup>18</sup> and the *Regional Biodiversity Strategy for Tropical Andean Countries* (Decision 523)<sup>19</sup> to establish basic requirements for access to and use of traditional knowledge. Further, Decision 524 created a Working Group on the Rights of Indigenous Peoples<sup>20</sup>. Decisions 345, 391 and 486 all recognize that indigenous, local and Afro-American communities have rights over their traditional knowledge, subject to national law and policy. This chapter, however, is focused exclusively on Decision 391 as it is closer to the issue of protection of traditional knowledge. It should be noted that despite the fact that Andean Communities have adopted a supranational legislation to set up the main principles and guidance for the protection of traditional knowledge, protection is limited to the national border of each Member Country.

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<sup>15</sup> The Andean Community of Nations (CAN) enjoys regulatory authority through its decisions and resolutions. As a rule, its decisions do not require any national approval process and become law automatically upon their publication in the Andean Community's Official Journal.

<sup>16</sup> *Andean Community of Nations Decision 345: Common Provisions on the Protection of the Rights of Breeders of New Plant Varieties*, opened for signature 21 October 1993, (entered into force 21 October 1993) ('Decision 345') <<http://www.comunidadandina.org/ingles/normativa/D345e.htm>> at 23 July 2006.

<sup>17</sup> *Decision 391*, above n 2.

<sup>18</sup> *Andean Community of Nations Decision 486: Common Regime on Industrial Property*, opened for signature 14 September 2000, (entered into force 14 September 2000) ('Decision 486') Art. 15 (b). Decision 486 creates a common regime regarding industrial intellectual property. It includes provisions relating to safeguarding and respecting traditional knowledge of indigenous communities, meaning that the granting of patents on inventions obtained or developed on the basis of traditional knowledge is subordinated to the presentation of the document that certifies the licence or authorization to access and use such knowledge. Further, Decision 486 should be applied and interpreted in a way that does not contravene the stipulations of *Decision 391* and its effective amendments. It also prohibits registration of signs including the name of indigenous, African American, or local communities, or of such denominations, words, letters, characters, or signs as are used to distinguish their products, services or methods of processing, or that constitute an expression of their culture or practice, without authorization of the communities in question or the request by the communities themselves.

<sup>19</sup> *Andean Community of Nations Decision 523: Regional Biodiversity Strategy for Tropical Andean Countries*, opened for signature 7 July 2002, (entered into force 7 July 2002) ('Decision 523'). This Decision has approved the *Regional Biodiversity Strategy for Tropical Andean Countries*, including, as one of its objectives, the establishment of a common policy for protecting traditional knowledge held by indigenous peoples and Afro-American communities.

<sup>20</sup> *Andean Community of Nations Decision 524 Working Group on the Rights of Indigenous Peoples*, opened for signature 7 July 2002, (entered into force 7 July 2002) ('Decision 524'). This Decision has established a Working Group on the rights of indigenous peoples as a consultative entity within the *Andean Integration System* to promote the active participation of indigenous peoples in the economic, social, cultural and political spheres of subregional integration.

## 1 *Common Regime on Access to Genetic Resources - Decision 391*

Decision 391 was approved under the *Cartagena Agreement* of 1996.<sup>21</sup> Since its official publication, Decision 391 has been integrated into the national systems of the countries of the Andean Community, without requiring any approval by the Member Countries. Decision 391 established a common regime regarding access to genetic resources and their derivatives within the Andean region.<sup>22</sup> This featured provisions regulating access to associated intangible components (or traditional knowledge),<sup>23</sup> as well as some significant requirements for a fair and equitable participation in the benefits arising from such access. However, it did not set out any specific standards for evaluating applications, the level of benefits, or their distribution.<sup>24</sup> It laid the foundation for the recognition and valuation of the associated intangible components held by native, Afro-American and local communities.<sup>25</sup>

Decision 391 recognized that all Member Countries have sovereign rights over their genetic resources and the by-products derived from them.<sup>26</sup> These resources are considered patrimony of the state and are inalienable, not subject to prescription, and not subject to seizure or similar measures.<sup>27</sup> A derivative is defined as a 'molecule or combination or mixture of natural molecules, including raw extracts of living or dead organisms of biological origin, derived from the metabolism of living organisms.'<sup>28</sup>

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<sup>21</sup> *Andean Subregional Integration Agreement - Cartagena Agreement*, opened for signature 1969, (entered into force 1969) ('Cartagena Agreement') <<http://www.comunidadandina.org/INGLES/treaties.htm>> at 23 April 2006.

<sup>22</sup> *Decision 391*, above n 2. Under *Decision 391*, the term 'genetic resources' means 'all biological material that contains genetic information of value or of real or potential use'. See also Stephen B. Brush, 'Farmers' Rights and Protection of Traditional Agricultural Knowledge. CAPRI Working Paper No 36' (International Food Policy Research Institute, 2005) 3. Brush argues that a collection of any biological material, whether it is for pharmaceutical research, natural product extraction, or agriculture, may be included under this access regime.

<sup>23</sup> The term 'intangible component' under *Decision 391* means 'all know-how, innovation or individual or collective practice, with real or potential value, that is associated with the genetic resource, its by-products or the biological resource that contains them, whether or not protected by intellectual property regimes.' Therefore, whenever this Decision is mentioned in this thesis, the term 'intangible component' will be used in preference to the term 'traditional knowledge'.

<sup>24</sup> Brush, above n 22, 15.

<sup>25</sup> *Decision 391*, above n 2, Art. 2(b). A single definition is used in *Decision 391* to embrace three distinct ethnicities; a native, Afro-American and local community, are defined as 'a human group whose social, cultural and economic conditions distinguish it from other sectors of the national community, that is governed totally or partially by its own customs or traditions or by special legislation and that, irrespective of its legal status, conserves its own social, economic, cultural and political institutions or part of them.'

<sup>26</sup> *Decision 391*, above n 2, Arts 5 and 6. National sovereignty extends to genetic resources and their derivatives, but such a right is without prejudice to the systems of ownership applicable to the biological resources containing them, property on which they are located, or to any associated intangible component.

<sup>27</sup> *Decision 391*, above n 2, Art. 6.

<sup>28</sup> *Decision 391*, above n 2, Art. 1.

Decision 391 did not create a legal system for the positive protection of associated intangible components or regulate the benefit-sharing.<sup>29</sup> However, it provides a defensive protection<sup>30</sup> for associated intangible components by denying intellectual property rights over products obtained or developed by using information on associated intangible components accessed in a manner contrary to the provisions of this Decision.<sup>31</sup>

Decision 391 provides a contractual approach to regulate access to, and use of, the intangible components. It does this by setting out the minimum requirements that must be taken into account by those interested in having access to traditional knowledge or associated intangible components.<sup>32</sup> Access to intangible components is granted through a subsidiary access contract which is an annex to and an integral part of the contract on genetic resources or their by-products.<sup>33</sup> The subsidiary contract is intended to stipulate the fair and equitable distribution of the benefits to the supplier of the intangible component.<sup>34</sup> The subsidiary contract is negotiated and signed by the supplier of the intangible component and the applicant requesting the access. It may also be signed by the Competent National Authority. If the subsidiary contract is not signed by the Competent National Authority, it needs to include a condition that subjects its execution to the access contract. There is no clear indication that

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<sup>29</sup> Positive protection entails the active assertion of intellectual property rights over protected subject matter, with a view to excluding others from making specific forms of use of the protected material.

<sup>30</sup> Defensive protection refers to measures aimed at preventing the acquisition of intellectual property rights over traditional knowledge by parties other than the holders of such knowledge.

<sup>31</sup> *Decision 391*, above n 2, 2nd Para. of the Complementary Provisions. Further, Article 75(h) of *Decision 486* supports *Decision 391* by requiring patent applicants to include a copy of the access contract when products or processes have been obtained or developed on the basis of traditional knowledge.

<sup>32</sup> *Decision 391*, above n 2, Arts 17 (d) and 35.

<sup>33</sup> *Decision 391* provides different regulatory treatment for genetic resources on the one hand, and biological resources, on the other. Genetic resources and their derivatives are patrimony of the state and are considered to be inalienable, namely they are not subject to prescription, seizure or similar measures. Conversely, biological resources (which contain those genetic resources) are capable of, or subject to, private ownership and rights. However, only the state has the right over genetic resources and thus only the state is entitled to give the final approval for access to, as well as to negotiate benefit-sharing provisions from the use of these resources. Up to this point, there has, in fact, been no actual government regulation of the specific nature or character of intellectual property rights relating to biological resources. The contract stipulating the main conditions for access to genetic resources or their by-products shall be negotiated and signed by the Competent National Authority and the applicant requesting the access. This is to say that the suppliers of the genetic resources and associated intangible component are not part of this contract. As a result, *Decision 391*, although using vague language, states that the Competent Authority must take the rights and interests of the suppliers of the genetic resources and associated intangible component into consideration during the negotiation. See *Decision 391*, above n 2, Art. 34. For more information see, Biodiversity Action Network, 'Access to Genetic Resources: An Evaluation of the Development and Implementation of Recent Regulation and Access Agreements. Environmental Policy Studies. Working Paper 4' (Paper presented at the Environmental Policy Studies Workshop, Washington, DC, 1999).

<sup>34</sup> *Decision 391*, above n 2, Arts 35 and 42.

the supplier of an intangible component must be a representative of the indigenous, Afro-American or local community.<sup>35</sup>

The main procedures, terms and conditions for accessing collective knowledge are settled by the state. In Decision 391 there is no explicit reference to the necessity of obtaining prior informed consent from the provider of the intangible component. Clearly then, there is no access to intangible components without approval and participation of the competent national authority. It can be inferred, therefore, that indigenous peoples' authority and autonomy to decide about the use of their traditional knowledge have been limited by the procedures established by the Andean Community through Decision 391. As Seiler and Dutfield argue, the effectiveness of Decision 391 in supporting indigenous peoples' rights depends on the extent to which such people *already* enjoy recognition of their land rights and on the extent to which they are able to enforce these rights.<sup>36</sup>

It should be pointed out that Decision 391 states that a special regime or a harmonization of national legislation should be implemented by Member Countries of the Andean Community for the protection of intangible components associated with the genetic resources.<sup>37</sup> In order to facilitate the development of such a *sui generis* regime, the *Corporación Andina de Fomento (CAF)* and the *Secretaría General de la Comunidad Andina* have created a working group, including indigenous peoples from all Member Countries, to establish a set of core elements and principles for the Andean Countries. As a result, a proposal for the creation of a regional *sui generis* regime to protect traditional knowledge was presented in May 2005.<sup>38</sup> The working group has also proposed the creation of a regional organization, with representation in each country, to oversee the protection of traditional knowledge of the indigenous peoples. However, the proposal does not make clear whether the protection will be granted within national borders of each Andean Country or whether the protection should be aligned to the regional borders of the all Andean Community. Finally, it should be noted that up to date, no regional level proposal dealing specifically with traditional knowledge has been officially discussed among the countries of the Andean Community.

<sup>35</sup> Achim Seiler and Graham Dutfield, *Regulating Access and Benefit Sharing: Basic Issues, Legal Instruments, Policy Proposals*. Study Commissioned by the Federal Republic of Germany in preparation for the First Meeting of the Ad Hoc Working Group on Access and Benefits-Sharing in Bonn. UNEP/CBD/WG-ABS/1/INF/4, [73], (2001).

<sup>36</sup> Ibid 71.

<sup>37</sup> *Decision 391*, above n 2, 8th Para. of the Temporary Provisions.

<sup>38</sup> Rodrigo De La Cruz, Maria Tereza Szauer, Roberto López and Luiza Elena Guinand (eds), *Elementos para la Protección Sui Generis de los Conocimientos Tradicionales Colectivos e Integrales Desde la Perspectiva Indígena* (2005) 13.

So far, the Member Countries have agreed to grant each other national and non-discriminatory treatment in matters involving access to genetic resources. There is no provision, however, for granting the same treatment in matters of access to traditional knowledge.<sup>39</sup> Additionally, the Member Countries have also agreed that any rights, including intellectual property rights, over genetic resources, by-products or synthesized products and associated intangible components, process or product based on traditional knowledge which were accessed and used without the fulfillment of the provisions of Decision 391, shall not be acknowledged.<sup>40</sup> That is to say, each Member Country shall require proof of legal authorization and agreement for accessing and using traditional knowledge before recognizing and granting any right over any process or product obtained or developed on the basis of traditional knowledge held by indigenous peoples living in one of the Member Countries.

#### **D      *At the National Level***

In the previous section of this chapter the international, regional and sub-regional measures adopted by Amazonian countries to protect traditional knowledge were examined. The measures adopted individually and nationally by each Amazon country will now be examined and the strengths and weaknesses will be highlighted. At the outset, it should be reiterated that Decision 391 did not establish a comprehensive legal system to protect traditional knowledge. In the absence of such a regional system, Andean countries are adopting different approaches to protect traditional knowledge. Hence, the aim of this section is to determine which Andean countries use Decision 391 itself as a mechanism to regulate the access to and protection of traditional knowledge and which have introduced a national framework.

At the time of writing this thesis, only Peru had enacted a national law to incorporate the

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<sup>39</sup> *Decision 391*, above n 2, Art. 11.

<sup>40</sup> *Decision 391*, above n 2, Paras 2 and 3 of the Complementary Provisions.

principles of Decision 391 into its national legal system.<sup>41</sup> The other Andean Countries are currently at varying stages of the legislative progress. Brazil has also adopted special legislation to protect traditional knowledge. There is, however, no legal framework in place in Guyana and Surinam.

## 1 Peru

Peru is the only Member Country of the Andean Community that has promulgated special legislation to protect collective knowledge. This is known as Law n. 27,811, *Law Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources*.<sup>42</sup> This is an intellectual property law which established a *sui generis* regime with the specific aims of promoting respect for and the protection, preservation and wider application of collective knowledge and of promoting the fair and equitable distribution of the benefits derived from the use of that collective knowledge.<sup>43</sup>

In addition, the Law No 26,839, *Law on the Conservation and Sustainable Use of Biological Diversity* recognizes traditional knowledge as cultural patrimony and requires prior informed

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<sup>41</sup> Peru and Colombia have both signed a bilateral Free-Trade Agreement with the United States of America, which is amended by a Side Letter aimed at regulating the issue of access to, and protection of, traditional knowledge. The Agreement between Peru and the United States was signed on December 2005. Its Article 18.8 emphasises the parties' commitment to the conservation and sustainable use of biodiversity and preservation of traditional knowledge. The Side Letter states that: 'The Parties recognize the importance of traditional knowledge and biodiversity, as well as the potential contribution of traditional knowledge and biodiversity to cultural, economic, and social development. The parties recognize the importance of the following: (i) obtaining informed consent from the appropriate authority prior to accessing genetic resources under the control of such authority; (ii) equitably sharing the benefits arising from the use of traditional knowledge and genetic resources; and (iii) promoting quality patent examination to ensure the conditions of patentability are satisfied.' The Side Letter also states: 'The parties recognize that access to genetic resources or traditional knowledge, as well as the equitable sharing of benefits that may result from use of those resources or that knowledge, can be adequately addressed through contracts that reflect mutually agreed terms between users and providers.' Some analysts have said the concern is the letter's paragraph on contracts, which could mean that companies could negotiate contracts with indigenous communities without any transparency and, in this case, without any requirements to disclose to the national patent office, or others, from whom and where they obtained the resources. This has been criticized by those who predict negotiations for such contracts would take place on unequal terms (IPW, Genetic Resources, 25 November 2005). Others counter that the very fact that the US have accepted and agreed to the inclusion in an FTA of a series of concepts regarding biodiversity and traditional knowledge is already an achievement, particularly given that the US has never ratified the CBD. Bridges Weekly 25 January 2006). Available at [http://www.ustr.gov/assets/Trade\\_Agreements/Bilateral/Peru\\_TPA/Final\\_Texts/asset\\_upload\\_file869\\_8728.pdf](http://www.ustr.gov/assets/Trade_Agreements/Bilateral/Peru_TPA/Final_Texts/asset_upload_file869_8728.pdf) at 6 April 2006. See also Manuel Ruiz Muller, *La Protección Jurídica de los Conocimientos Tradicionales: Algunos Avances Políticos y Normativos en América Latina* (2006) 26.

<sup>42</sup> Law No. 27,811, *Law Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources*, 2002, (Peru) (Art. 2), (Law No. 27,811) <<http://www.grain.org/brl/?docid=81&lawid=2041>> at 23 July 2006.

<sup>43</sup> Law No 17,811, above n 42, Art. 5.

consent for the use of traditional knowledge.<sup>44</sup> Peru has also recently enacted the *General Law of Development of Modern Biotechnology*. This law states that the Peruvian State recognizes and protects the traditional knowledge, the practices and innovations of the indigenous peoples and local communities, related to the use of the elements of the biodiversity. It affirms that the granting of patents of invention, models of utility and other means of intellectual and industrial property is dependent on the previous verification that the local rights of the indigenous peoples and local communities have been respected.<sup>45</sup>

**(a) *Scope of Protection***

Peruvian Law No 27,811 establishes two pre-conditions regarding the subject of protection. The first is that protection is exclusively given to collective knowledge.<sup>46</sup> Traditional knowledge is considered to be collective when it belongs to an indigenous people as a whole and not to any one particular individual within the community. It can, however, belong to various indigenous peoples.<sup>47</sup> The second condition is that such collective knowledge should be associated with the properties, uses and characteristics of biological resources.<sup>48</sup>

**(b) *Formalities and Form of Protection***

Peruvian Law No 27,811 does not prescribe any formality as a pre-requisite either for the protection or the acquisition of rights over traditional knowledge. Law No 27,811 provides three systems for the registration of collective traditional knowledge. These are: (i) a national register for knowledge that is in the public domain; (ii) a national register for confidential knowledge, and (iii) local registers organized in accordance with indigenous peoples' practices and customs. In practice, Law No 27,811 only sets out detailed provisions for the national register for confidential knowledge, and reference is made to the others only in broad terms. The registration of traditional knowledge, however, is neither a legal requirement for its legal recognition and protection nor for the recognition of the legal rights of its holder. The

<sup>44</sup> *Law on the Conservation and Sustainable Use of Biological Diversity*, Law 26,839, 1997, (Peru) (Arts 23 and 24), ('Law 26,839').

<sup>45</sup> *General Law of Development of Modern Biotechnology*, 2006, (Peru) (Art. 18), (Law of Biotechnology). <<http://www.scidev.net/administrator/documents/LEY%20DE%20LA%20BIOTECNOLOGIA%20-%20PERU.pdf>> at 23 July 2006.

<sup>46</sup> *Law No 27,811*, above n 42, Art. 2(b). Article 2(b) of Peruvian *Law No 17,811* defines the term 'collective knowledge' as 'the accumulated, transgenerational knowledge evolved by indigenous peoples and communities concerning the properties, uses and characteristics of biological diversity.'

<sup>47</sup> *Law No 27,811*, above n 42, Art. 10.

<sup>48</sup> *Law No 27,811*, above n 42, Art. 2(e). Under Article 2(e) of Peruvian *Law No 27,811*, the term 'biological resources' means genetic resources, organisms or parts thereof, populations or any other kinds of biotic component of ecosystems that are of real or potential value or use to mankind.



registration process involves a clear and full description of the collective knowledge, together with the designation of the biological resource to which such knowledge relates, as well as the indication of the use or uses that are made of the biological resource concerned. Further, applications for registration shall be accompanied by a sample or specimen of the biological resource to which the collective knowledge to be registered is related. When it is difficult to transport or manipulate sample or specimen of the biological resource, indigenous peoples are allowed to fulfill the application with photographs that illustrate the relevant characteristics of the biological resource.<sup>49</sup>

Traditional knowledge that has been made accessible to persons outside the indigenous communities through mass media is considered to be in the public domain.<sup>50</sup> The holders of traditional knowledge disclosed within the previous twenty years and registered in the Public Register of Collective Knowledge of Indigenous Peoples do not have the right to oppose its use by a third party. This is to say, access to traditional knowledge in the public domain does not require prior informed consent or license agreement for its exploitation. However, the users of such knowledge are required to pay to the 'Fund for Development of Indigenous Peoples' a certain percentage of the value before taxes of the gross sales resulting from the commercialization of products based on such knowledge.

**(c) *Protection Conferred and Enforcement of Rights***

Peruvian Law No. 27,811 provides positive protection against the disclosure, acquisition or use of collective knowledge without the consent of the indigenous peoples and protection against its disclosure, acquisition or use in unfair or disloyal manner.<sup>51</sup> The legislation also provides protection against unauthorized disclosure where a third party has legitimately had access to collective knowledge covered by a safeguard clause.<sup>52</sup> Defensive protection is also granted as a means to avoid the granting of patents for inventions made or developed on the basis of collective knowledge, without any account being taken of that knowledge as prior art in the examination of the novelty and inventiveness of such inventions.<sup>53</sup> On the subject of disclosure of origin, the Peruvian Law provides that whenever a patent application relates to an invention obtained from use of collective traditional knowledge, the applicant shall present

<sup>49</sup> Law No 27,811, above n 42, Art. 20.

<sup>50</sup> Law No 27,811, above n 42, Art. 13.

<sup>51</sup> The law does not provide a definition of the term 'unfair' in the context of disclosure, acquisition and use of traditional knowledge.

<sup>52</sup> Law No 27,811, above n 42, Art. 42.

<sup>53</sup> Law No 27,811, above n 42, Art. 5(f).

a copy of the license contract, as a prerequisite for the granting of the patent rights, unless the collective knowledge concerned is in the public domain.<sup>54</sup> The rules to implement the disclosure requirements have not been implemented, and consequently, this measure has yet to be utilized within Peru.<sup>55</sup>

The 'Office of Inventions and New Technology of the National Institute for the Defense and Competition and the Protection of Intellectual Property' (INDECOPI) is the competent council to settle (in the first instance) all matters concerning the protection of the collective knowledge of Peruvian indigenous people. The 'Intellectual Property Chamber of INDECOPI' is competent to settle all appeals in the second and last administrative instance.<sup>56</sup> In addition, the 'Indigenous Knowledge Protection Board' was also established by Law 27,811 to monitor and oversee the protection system, to provide technical and legal assistance to representatives of indigenous peoples, and to supervise the national fund. This Board is composed of five members selected by the representative organizations of indigenous peoples and by the 'National Commission for the Andean, Amazonian and Afro-Peruvian Peoples'.<sup>57</sup> Further, Peru has adopted concrete measures to limit cases of patents over traditional knowledge-based products and processes when traditional knowledge was accessed without the proper authorization of its holders. Such measures include the creation of the 'National Commission for the Protection of Access to Peruvian Biological Diversity and Collective Knowledge', also known as the 'Commission for Prevention of Acts of Bio-piracy'.<sup>58</sup> The Commission has the task of developing actions to identify, prevent and avoid acts of biopiracy with the aim of protecting the interests of the Peruvian State. The term 'biopiracy' has been defined as 'access to and unauthorized use, without compensation, of biological resources or traditional knowledge of the indigenous peoples by third parties, without the necessary

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<sup>54</sup> *Law No 27,811*, above n 42, 2nd Supplementary Provision. This provision supplements, at national level, the provisions of Article 75(g) and (h) of *Decision 486* which provides that a patent shall be declared absolutely void if the applicant has failed to submit a copy of the access contract or the licence or authorization for the use of traditional knowledge.

<sup>55</sup> University of London Queen Mary, Ecologic, Universidad De Alicante, Ip Bulgaria, Royal Institute of International Affairs and University of Warwick, 'Impacts of the IPR Rules on Sustainable Development (IPDEV). Consolidated Final Research Report' (European Commission, 2006) 120.

<sup>56</sup> *Law No 27,811*, above n 39, Art. 63.

<sup>57</sup> *Law No 27,811*, above n 42, Art. 65.

<sup>58</sup> *Law No. 28,216, Law on Protection of Access to Peruvian Biological Diversity and to the Collective Knowledge of the Indigenous Peoples, 2004*, (Peru) ('Law No. 28,216') The Commission has been the subject of severe criticism because none of its 13 members is from an indigenous peoples' organization. Of its members, 11 are state officials, 1 from an NGO and 1 a business representative. For more information see, Roberto Espinoza Llanos, 'Forest Privatization and Indigenous Rights and Knowledge in Peru' (United Nations Forestry Forum (UNFF), 2004) 4.

authorization and in contravention of the principles established in the CBD and the existing rules on the subject'.<sup>59</sup>

The representative organizations of indigenous people are entitled to bring an infringement action. Such action may be brought *ex officio* by 'National Institute for the Defense and Competition and the Protection of Intellectual Property' (INDECOPI).<sup>60</sup> Violations of the rights of the holders of registered knowledge will be punished by the imposition of a fine. Its value will be determined according to the economic injustice caused to the indigenous peoples and communities, and the conduct of the infringement throughout the proceedings.<sup>61</sup>

#### (d) *Beneficiaries of Protection*

Peruvian Law No 27,811 recognizes indigenous peoples as the holders of traditional knowledge.<sup>62</sup> However, such legislation has adopted a broad definition of the term 'indigenous peoples'. Indigenous peoples are defined as: 'aboriginal peoples holding rights that existed prior to the formation of the Peruvian State, maintaining a culture of their own, occupying a specific territorial area and recognizing themselves as such. The rural and native communities are included in the definition of indigenous people given by this Law.'<sup>63</sup> This legislation, however, does not (expressly) recognize the rights of Afro-American communities, as does the Andean Community Decision 391.<sup>64</sup>

#### (e) *Condition for Accessing Traditional Knowledge*

Peruvian Law No 27,811 recognizes that indigenous peoples have the autonomy and authority to decide when, where and how their traditional knowledge can be accessed.<sup>65</sup> However, this legislation delegates the right to give prior informed consent and the right to license third parties to use the collective knowledge to the representative organizations of the indigenous

<sup>59</sup> Law No 28,216, above n 58, Art. 4.

<sup>60</sup> Law No 27,811, above n 42, Arts 43 and 45.

<sup>61</sup> Law No 27,811, above n 42, Art. 62. According to Article 62, the fines shall be up to 150 tax units (UIT). The value of a Taxable Income Unit for year 2005 is 3,300.00 (currency equivalent to approximately US\$ 990.00). See Tax and Customs Duties Regime, <[http://www.proinversion.gob.pe/english/orientacion/empresas/cont\\_1.htm#1](http://www.proinversion.gob.pe/english/orientacion/empresas/cont_1.htm#1)> at 23 November 2005.

<sup>62</sup> Law No 27,811, above n 42, Arts 1,3, and 42.

<sup>63</sup> Law No 27,811, above n 42, Art. 2(a).

<sup>64</sup> Decision 391, above n 2, Art. 2(b).

<sup>65</sup> There is no definition for the term 'access to collective knowledge'. However, it can be assumed by the words used in Article 6 of Peruvian Law No 27,811 that this term refers to access for the purposes of scientific, commercial and industrial application.

peoples who possess the knowledge to which access is sought.<sup>66</sup> The representative organization must inform the greatest possible number of indigenous peoples possessing the knowledge regarding its engagement in negotiating access to traditional knowledge. In addition, the representative organization must consider indigenous peoples' interest and concerns, particularly those connected with their spiritual values and religious beliefs, in the process of providing the prior informed consent.<sup>67</sup>

Peruvian Law No 27,811 presents the basic contents of the license contract and the limitation on its validity, namely, for a renewable period of not less than one year or more than three years.<sup>68</sup> In addition, it states that license contracts must be written in the native language and in Spanish and shall compulsorily be registered in the 'National Institute for the Defense and Competition and the Protection of Intellectual Property' (INDECOPI).<sup>69</sup> The registering of the license is a pre-requisite for the implementation of infringement actions against a third party who violates the rights granted by Law No 27,811 or a contractual clause.

Peruvian Law No 27,811 indicates that the disputes between indigenous peoples connected with the implementation of the protection regime, including those concerning the compliance on the part of the indigenous people that has negotiated a license contract for the use of collective knowledge, may be settled by customary law and the traditional indigenous forms of dispute settlement, or by mediation carried out by a higher ranking indigenous organization.<sup>70</sup> Although it is not expressly mentioned, it can be inferred that disputes arising from indigenous peoples' claiming ownership rights over traditional knowledge may be settled by customary law and traditional forms of dispute settlement or mediation.

**(f) *Strengths and Weaknesses of the Current Approach to Protect Traditional Knowledge***

The analysis of Law No 27,811 has shown that there are both strengths and weaknesses. The strongest action taken by the Peruvian State to protect traditional knowledge is the enactment of Law No 27,811 to deal exclusively with the issue of traditional knowledge. A positive

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<sup>66</sup> Law No 27,811, above n 42, Arts 6 and 26.

<sup>67</sup> Begona Venero Aguirre, 'The Peruvian Law on Protection of the Collective Knowledge of Indigenous Peoples Related to Biological Resources' in Christophe Bellmann, Graham Dutfield and Ricardo Meléndez-Ortiz (eds), *Trading in Knowledge. Development Perspectives on TRIPS, Trade and Sustainability* (2003) 285-88.

<sup>68</sup> Law No 27,811, above n 42, Art. 26.

<sup>69</sup> Law No 27,811, above n 42, Art. 25.

<sup>70</sup> Law No 27,811, above n 42, Art. 46.

feature of Law No 27, 811 is that it creates two types of register of traditional knowledge and provision for the creation by indigenous peoples of local registers. Another positive action taken by the Peruvian State is the creation of institutional structures to administer the protection system, to supervise the collective fund and identify, prevent and avoid acts of biopiracy. These structures include the creation of the 'Indigenous Knowledge Protection Board' and the 'National Commission for the Protection of Access to Peruvian Biological Diversity and Collective Knowledge'. One of the weaknesses regarding the creation and effective implementation of these institutional structures has been the limited direct involvement and representation of the indigenous peoples.

Law No 27,811, in turn, has positive and negative features. The strongest feature of this law consists in both the recognition of indigenous peoples' rights to decide about the use of their traditional knowledge, and the granting of legal protection to traditional knowledge. Another positive aspect of this legislation is its commitment for the preservation and promotion of the wide use and development of traditional knowledge. A further advantage is the recognition of the rights of the indigenous to be compensated for the use of traditional knowledge which is in the public domain.

One of the major weaknesses of the Law No 27, 811 is that users of traditional knowledge are not obligated to obtain prior informed consent of all indigenous peoples possessing collective traditional knowledge. Obtaining the prior informed consent of one representative organization is sufficient to have legal access to the said knowledge. As a result, it seems reasonable to suppose that any representative organization may enter into negotiations to authorize the use of traditional knowledge, even in the face of a dissenting majority.<sup>71</sup> This situation may lead to conflicts within and between communities, as it was the case with the agreement between the Aguaruna people and Washington University, in partnership with the International Cooperative Biodiversity Group (ICBG), mentioned in Chapter 7. Another weakness of the legislation is that it does not provide any mechanism for monitoring whether indigenous peoples' interest and concerns, particularly those connected with their spiritual values and religious beliefs, were respected and considered by the representative organization charged with the responsibility of providing prior informed consent on behalf on indigenous peoples.

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<sup>71</sup> Brendan Tobin, 'Towards an International Regime for Protection of Traditional Knowledge: Reflections on the Role of Intellectual Property Rights' (Paper presented at the Conference on Bioethical Issues of Intellectual Property in Biotechnology, Tokyo, Japan, 2004).

Another disadvantage is that Law No 27, 811 states that the details of the negotiation may be kept secret, in order to respect the interests of the other party.<sup>72</sup> According to the law the representative organization of indigenous peoples should provide the indigenous peoples with information limited to the biological resources to which the collective knowledge is associated. This implies that the details of the negotiation may be kept confidential and withheld even from the holders of the traditional knowledge. Thus, it can be inferred that the process of obtaining prior informed consent lacks transparency and prevents the effective participation of the holders of the knowledge. Further, this process is unfair since, in order to respect the rights of one party, the rights of the other party are not fully acknowledged. A further limitation is that the Law No 27, 811 states that traditional knowledge is collectively owned. However, the legislation does not establish precisely the obligations that one traditional knowledge holder has to the other/s, so that the basis for collective administration of the rights over traditional knowledge remains undisclosed.

## **2 Bolivia**

The main disadvantage regarding the protection of traditional knowledge in Bolivia is that this country has, so far, not implemented a national legal system to protect such knowledge.<sup>73</sup> However, some protective measures have been adopted. For instance, the Supreme Decree No 24,676 or the *Regulation of Decision 391 on the Common Regime for Access to Genetic Resources* does not create a national legal system to protect associated intangible components,<sup>74</sup> but it does recognize the collective rights of indigenous communities over the associated intangible component of biological resources, and also not only their rights to authorize the access to and use of their knowledge, but also to share the benefit derived from the authorized use.<sup>75</sup> The Supreme Decree No 24,676 adopted the main access procedures established by Decision 391. It has also embraced the use of an annex to the contract of access to regulate access to intangible components. In order protect indigenous peoples' interests, the State is charged with the duty to oversee the administration of such annex. Any breach found

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<sup>72</sup> Law No 27,811, above n 42, Art. 6.

<sup>73</sup> Bolivia is currently working on a national legislation to protect traditional knowledge. Indigenous peoples must be consulted in this regard before the legislation is approved. For more information see, Manuel Ruiz, *National and Regional Laws to Protect IK Related to Genetic Resources* (2004) SciDevNet <<http://www.scidev.net/dossiers/index.cfm?fuseaction=printarticle&dossier=7&policy=49&section=237>> at 10 October 2004.

<sup>74</sup> Decision 391, above n 2. The term 'intangible component' is defined by Decision 391.

<sup>75</sup> Supreme Decree No. 24,676, *Regulation of Decision 391 on the Common Regime for Access to Genetic Resources*, 1997, (Bolivia) (Arts 15(1) and 43(a)), ('Supreme Decree No. 24,676') <<http://www.lclark.edu/org/ielp/boliviaeng.html>> at 15 September 2005.

in such annex would result in the cancellation and invalidity of the main contract, that is to say, the contract of access.

### 3 *Colombia*

In practice, there is no legal system for the positive protection of associated intangible components or for the regulation of benefit-sharing in Colombia. Hence, access to traditional knowledge is regulated by Decision 391 which provides a defensive protection for associated intangible components.<sup>76</sup> Defensive protection is guaranteed by denying intellectual property rights over products or processes obtained or developed using information on associated intangible components accessed in a manner contrary to its provisions.<sup>77</sup>

One weak point with regards the implementation by Colombia of the Decision 391 is that despite the fact that Decision 391 recognizes that indigenous, Afro-Colombian and local communities have decision-making rights over their knowledge, the Colombian Decree 309 (*Decree of Regulation of Scientific Research Associated to Biological Diversity*) states that access to intangible components (traditional knowledge) associated with genetic resources or their derivatives is conditional on the previous authorization given by the Ministry of Environment.<sup>78</sup> There is no particular provision requiring the involvement, participation, or prior informed consent of the indigenous peoples within the authorization procedures. However, a provision does require the granting of permission by the indigenous peoples where studies are to be carried out on their lands.<sup>79</sup>

It is important to note that Law 191 of 1995, or the *Law of Borders*, recognizes the necessity to protect the traditional knowledge associated to biological resources within national borders. In this context, this law anticipates that access to and use of that knowledge should follow

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<sup>76</sup> In August 2005, the project of *Law 38/05*, aimed at establishing a special mechanism to protect traditional knowledge associated with biological resources, was submitted to the Senate. In summary, it establishes that: traditional knowledge is collectively owned; the rights over such knowledge are inalienable, imprescriptible and unattachable. The access to traditional knowledge is conditioned to the prior informed consent; also, the benefit arising from the use of that knowledge shall be shared with indigenous peoples. For more information see <http://www.humboldt.org.co>. See also Muller, above n 41, 98.

<sup>77</sup> *Decision 391*, above n 2, 2nd Para. of the Complementary Provisions. Further, Article 75(h) of *Decision 486* supports *Decision 391* by requiring patent applicants to include a copy of the access contract when products or processes have been obtained or developed on the basis of traditional knowledge.

<sup>78</sup> *Decree 309 Regulation of Scientific Research Associated to Biological Diversity, 2000*, (Colombia) (Art. 15), ('Decree 309').

<sup>79</sup> *Decree 309*, above n 78, Art. 25.

prior informed consent and an agreement on sharing the benefits with its holders.<sup>80</sup> In addition, the *National Biodiversity Policy* approved by the Colombian Government in 1997 states that biodiversity, including, its other constituent parts, the intangible component (traditional knowledge) is a national patrimony. Such National Policy recognizes the importance of protecting traditional knowledge. A complicating factor is that this Policy has not made clear whether traditional knowledge should be protected as a good owned by the State or whether it should be considered the collective property of indigenous and local communities.<sup>81</sup> One positive action taken by the Colombian State was the establishment of an Inter-ethnic National Committee, in which delegates from ethnic communities across the country participate, with the task of evaluating national requirements for the implementation of Article 8(j) of the CBD.<sup>82</sup> In addition, the group Plebio (Policy and legislation on biodiversity, genetic resources and traditional knowledge) from the National University of Colombia is preparing a legal-technical proposal for the protection of traditional knowledge, with the support of indigenous youth.<sup>83</sup>

#### 4 Ecuador

One of the main strengths relating to the protection of traditional knowledge in Ecuador is its constitutional recognition of indigenous peoples' rights over their traditional knowledge. The *Ecuador Political Constitution* asserts that the State shall recognize and guarantee indigenous peoples collective intellectual property rights over their ancestral knowledge and its exploitation, use and development. The State shall also recognize indigenous peoples' traditional medicinal systems, knowledge and practices, as well as their right to protect sacred

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<sup>80</sup> *Law No. 191, 1995*, (Colombia) (Art. 8), ('Law No. 191') this law also states that the national government will develop mechanisms to protect indigenous communities that are in border zones, especially regarding the colonization processes.

<sup>81</sup> Gabriel Ricardo Nemogá Soto, 'The Road to Effective Prior Informed Consent for Accessing the Traditional Knowledge and Genetic Resources of Indigenous and Local Communities in Colombia' (Paper presented at the International Expert Workshop on Access to Genetic Resources and Benefit Sharing. Record of Discussion, Cuernavaca, 17-14 October 2004).

<sup>82</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Draft Outline of the Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities Relevant to the Conservation and Sustainable Use of Biodiversity, and the Plan and Timetable for its Preparation*, 6th mtg, [Para 20], UNEP/CBD/COP/6/7, (2002).

<sup>83</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Progress in the Implementation of the Programme of Work on Article (j) and Related Provisions and on the Integration of the Relevant Tasks into the Thematic Programmes of Work Under the Convention and at the National Level*, 5th mg, [para 33], UNEP/CBD/WG8J/5/2/(2007).



rituals and places, plants, animals, minerals, and ecosystems of vital importance from the perspective of view of traditional medicine.<sup>84</sup>

One of the main weaknesses of the Ecuadorian system is that even though there is a clear acknowledgement of the importance of enacting a national legislation to effectively implement the constitutional recognition of indigenous peoples' rights, such a complementary legislation has not been promulgated. Consequently, as a member of the Andean Community, Ecuador is subject to regulation by Decision 391 in determining access to traditional knowledge.

It is important to note that the *Law on the Conservation and Sustainable Use of Biodiversity*, which was approved in September 1996, declares that the Ecuadorian State holds property rights over all species constituting its biodiversity. It also states that the ancestral right of indigenous peoples over intangible knowledge and components of biodiversity and of genetic resources and control over them shall be guaranteed by a special regulation to be promulgated by the President of the Republic.<sup>85</sup> Further, the *Intellectual Property Law* enacted in 1998 requires that a special legislation should be create to provide a *sui generis* regime to protect, evaluate and enforce the collective intellectual rights of ethnic groups and local communities.<sup>86</sup>

## 5 Venezuela

Venezuela withdrew from the Andean Community in April 2006. However, during its membership of the Andean Community, Venezuela had taken significant steps towards the implementation of Decision 391.<sup>87</sup>

One of the main strengths related to the protection of traditional knowledge in Venezuela is the constitutional recognition of indigenous peoples' rights over their traditional knowledge. The *Venezuelan Political Constitution* guarantees and protects the collective intellectual property rights of indigenous peoples in knowledge, technology, and innovations. It also

<sup>84</sup> *Ecuadorian Political Constitution*, 1988, (Ecuador) (art 84), (Ecuadorian Political Constitution) <[http://www.iadb.org/sds/ind/ley/ecuador\\_leg.pdf](http://www.iadb.org/sds/ind/ley/ecuador_leg.pdf)> at 23 November 2003.

<sup>85</sup> *Law on the Conservation and Sustainable Use of Biodiversity Bill 1996*, (Ecuador) (Arts 96 and 97), ('Bill 1996')

<sup>86</sup> *Intellectual Property Law*, 1998, (Ecuador) (Art. 377), ('Intellectual Property Law') <[http://www.sice.oas.org/int\\_prop/nat\\_leg/Ecuador/L320m.asp#l5c2s4](http://www.sice.oas.org/int_prop/nat_leg/Ecuador/L320m.asp#l5c2s4)> at 01 May 2006.

<sup>87</sup> Brendan Tobin, 'Regulating Access and Benefit Sharing in the Andes: Exploring the Challenges of ABS Governance' (Paper presented at the Mountain Forum: A Global Network for Mountain Communities, Environment and Sustainable Development, 2006).

states that any work on genetic resources and the knowledge associated therewith will be treated as a collective good. It also prohibits patents over such resources and knowledge.<sup>88</sup> In addition, the Constitution declares that the collective intellectual property of collective benefits is warranted and protected. The registration of patents based on these resources and on traditional knowledge, technology and innovations of indigenous peoples is forbidden. Any activity related to genetic resources and knowledge associated with them shall yield collective benefits.<sup>89</sup>

Other positive aspects to the legal protection of traditional knowledge in Venezuela consist in the recognition through Law n. 5,468, the *Law on Biological Diversity* of the importance of traditional knowledge associated with biological diversity and acknowledgement of the need to compensate indigenous peoples for their contribution to the conservation of the biological diversity.<sup>90</sup> This legislation also recognizes the need to protect traditional knowledge itself. In addition, this legislation preserves the rights of indigenous peoples and local communities to oppose authorization for the collection of genetic material, access to traditional knowledge, and biotechnology-related projects to be developed on their territory if they are not adequately informed of the uses and benefits expected to accrue from such activities. Indigenous peoples can also request the cessation of activities that may be deleterious to their cultural heritage and the biological diversity of their territory.<sup>91</sup> Further, Venezuela recently approved the *Ley Organica de Pueblos y Comunidades Indígenas* which establishes the State commitment to preserve, strengthen and promote indigenous peoples' cultures within national and international levels. In order to bring this about, the State will undertake activities to promote these cultures on national and international levels. In addition, this Law recognizes that customary law is a tool vital to the maintenance and preservation of traditional knowledge.<sup>92</sup>

The main limitation of the Venezuelan legislation is that despite the recognition of the importance of traditional knowledge, there has been no promulgation of specific legislation designed to regulate access to traditional knowledge.

## **6     *Brazil***

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<sup>88</sup> *Venezuelan Political Constitution, 1999*, (Venezuela) (Art. 124), ('Venezuelan Constitution') <<http://www.georgetown.edu/pdba/Constitutions/Venezuela/ven1999.html>> at 23 November 2003.

<sup>89</sup> *Venezuelan Constitution*, above n 88, Chapter VIII (sc 124).

<sup>90</sup> *Law No. 5,468, Law on Biological Diversity, 1999*, (Venezuela) (Arts 13, 39 and 84), ('Law No. 5,468').

<sup>91</sup> *Law No 5,468*, above n 90, Arts 43, 44, 84 and 85.

<sup>92</sup> *Ley Organica de Pueblos y Comunidades Indígenas, 27 December 2005*, (Venezuela) (Arts. 80 and 102), ('LOPCI')

In Brazil, the Federal Union and two Brazilian states, Acre<sup>93</sup> and Amapá,<sup>94</sup> have regulated access to genetic resources and associated traditional knowledge. This thesis, however, focuses exclusively on the federal legislation because, under the Brazilian legal system, indigenous affairs are entirely a matter of federal jurisdiction.

The *Act Regulating Access to the Genetic Heritage, Protection of and Access to Associated Traditional Knowledge*, Provisional Act No. 2,186-16, dated 23 August 2001, was enacted by the Federal Union to regulate Articles 1, 8(j), 10(c), 15 and 16, Items 3 and 4 of the CBD.<sup>95</sup> The main aim of this legal and policy framework is to regulate access to genetic heritage<sup>96</sup> and associated traditional knowledge<sup>97</sup>. The other aim of this legislation is to regulate the sharing of benefits arising from the use of the genetic heritage component and the associated traditional knowledge.

#### (a) *Scope of Protection*

Brazilian Provisional Act No. 2,186-16 establishes two pre-conditions regarding the subject of protection. The first is that protection is exclusively given to collective knowledge. In this sense, the Provisional Act has created a legal fiction of collective ownership, providing for

<sup>93</sup> The Brazilian state named Acre, bordering Bolivia and Peru, has approved *State Law No 1,235*, which regulates the access to genetic resources and traditional knowledge, held by indigenous and local communities. The Acre law recognizes and protects the rights of indigenous and local communities to benefit collectively from and to share benefits from the use of their knowledge. It also provides that indigenous and local communities have rights to refuse authorization for access to genetic resources and associated traditional knowledge if it can be verified that 'these activities threaten the integrity of their natural or cultural patrimony'. <<http://www.lclark.edu/prg/ielp/acre.html>> at 23 May 2005.

<sup>94</sup> The Brazilian state of Amapá, bordering French Guyana, has also approved *State Law No 388* outlining the conditions for access to genetic resources and associated traditional knowledge, including provisions regarding indigenous and local communities' participation in decisions relating to the access to genetic resources in the areas in which they live, as well as their participation in the economic and social benefits resulting from access to genetic resources. <<http://www.lclark.edu/org/ielp/amapaenglish.html>> at 23 November 2005.

<sup>95</sup> *Act Regulating Access to the Genetic Heritage, Protection of and Access to Associated Traditional Knowledge*, Provisional Act No 2,186-16, 2001, (Brazil) (Art. 7 (I)), ('Provisional Act No 2,186-16') <<http://www.mma.gov.br/port/cgen/index.cfm>> at 23 July 2006. According to Article 62 of the Brazilian Constitution, the President of the Republic, in important and also in urgent cases, may adopt provisional measures, with the force of law. Such provisional measures may or may not be further converted into law. The *Provisional Act No 2,186-16* was converted into effective law on 23 August 2001. So, it is no longer a provisional law. However, such Act is still being named by its original name of 'provisional act'.

<sup>96</sup> The term 'genetic heritage' is used by the Brazilian *Provisional Act No. 2,186-16* as 'information of genetic origin, contained in samples of all or part of plant, fungal, microbial or animal species, in the form of molecules and substances originating in the metabolism of these living beings, and in extracts obtained from in situ conditions, including domesticated, or kept in ex situ collections, if collected from in situ conditions, within the Brazilian territory, on the continental shelf or in the exclusive economic zone.' Therefore, whenever this legislation is mentioned in this thesis, the term 'genetic heritage' will be used in preference to the term 'genetic resources'.

<sup>97</sup> Traditional knowledge is defined by Article 7(II) of *Provisional Act No 2,186-16*, as 'individual or collective information or practice of the indigenous community or local community, with real or potential value, associated to genetic heritage.'

any traditional knowledge associated to genetic heritage to be treated as collectively owned even if it is held by only one member of the indigenous community.<sup>98</sup> The second condition is that traditional knowledge should be associated with genetic heritage. This means that protection is granted to knowledge associated with genetic information of plant, fungal, microbial or animal species.

**(b) *Formalities and Form of Protection***

Article 215 of the *Brazilian Federal Constitution of the Republic* establishes that goods of material and immaterial nature including forms of expressions, styles of creation, acting and living, and scientific, artistic and technological developments possessed by the various Brazilian social groups jointly constitute the Brazilian cultural heritage. It provides for the protection of constructions, works of art and other goods of a material nature, and the creation of new legal instruments for the protection of non-material goods.<sup>99</sup> In practice, the Provisional Act No. 2,186-16 establishes the legal protection of traditional knowledge associated with genetic heritage.

Brazilian Provisional Act No 2,186-16 provides automatic protection of traditional knowledge as it does not establish any formal pre-requisite, as a condition of protection of traditional knowledge and recognition of the rights of its holder. No legal format for the mechanism for protection of traditional knowledge is prescribed.

**(c) *Protection Conferred and Enforcement of Rights***

In Brazil, traditional knowledge is protected against misappropriation. One of the main aims of the Provisional Act No 2,186-16 is to provide indigenous peoples and local communities with the legal means to prevent illegal use and exploitation, and other actions harmful to indigenous peoples' rights. These include actions not authorized by the 'Genetic Heritage

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<sup>98</sup> *Provisional Act No 2,186-16*, above n 95, Art. 9 (Sole Para.).

<sup>99</sup> *Brazilian Federal Constitution of the Republic*, 1988, (Brazil) (Art. 215), (Brazilian Constitution) <[http://www.iadb.org/sds/ind/ley/brasil\\_leg.pdf](http://www.iadb.org/sds/ind/ley/brasil_leg.pdf)>. See also Santilli, *Cultural Heritage and Collective Intellectual Property Rights. Collective Intellectual Property Rights*

Management Council' referred to in Article 10 or by an accredited institution.<sup>100</sup> These include the recognition of the rights of indigenous peoples to:

- (i) decide on the use of their traditional knowledge;<sup>101</sup>
- (ii) grant prior informed consent in writing for access to, use of, and application of traditional knowledge;<sup>102</sup>
- (iii) have the origin of traditional knowledge acknowledged in all publications, uses, exploitation and dissemination;<sup>103</sup>
- (iv) prevent unauthorized third parties from using or carrying out tests, research or investigations, disclosing and broadcasting;<sup>104</sup>
- (v) derive profit from economic exploitation by third parties;<sup>105</sup> and
- (vi) license or assign their rights in traditional knowledge.

The granting of intellectual property rights over the process or product obtained from information related to traditional knowledge is based on compliance with this Provisional Act and the origin of the knowledge.<sup>106</sup> One requirement is that patent applicants to disclose the origin of any genetic material used in an invention.<sup>107</sup>

Even though the Provisional Act No 2,186-16 requires the prior informed consent for Brazilians and foreigners accessing and using genetic resources and associated traditional knowledge originated in Brazil, there is no similar provision preventing a Brazilian or a

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<sup>100</sup> *Provisional Act No 2,186-16*, above n 95, Art. 8. To date, the Genetic Heritage Governing Council has accredited the Brazilian Institute of Environment and Renewable Natural Resources (IBAMA) as a competent institution to look after processes for authorization for access to genetic resources. However, processes involving authorization for access to traditional knowledge are still under its own auspices.

<sup>101</sup> *Provisional Act No 2,186-16*, above n 95, Art. 8. See also *Resolution No 6* of the Genetic Heritage Management Council, 2003, (Brazil) (Art. 2), (Resolution No 6) <<http://www.mma.gov.br/port/cgen/doc/res6i.pdf>> and *Resolution No 5* of the Genetic Heritage Management Council, 2003, (Brazil) (Art. 2), (Resolution No 5) <<http://www.mma.gov.br/port/cgen/doc/res5i.pdf>> at 23 July 2006.

<sup>102</sup> *Provisional Act No 2,186-16*, above n 95, Art. 31. See also *Resolution No 5* and *Resolution No 6*, above n 101. The Genetic Heritage Management Council has established the guidelines for access to genetic heritage. The rules for accessing genetic heritage for industrial or commercial purposes are established by *Resolution No 5*. The rules for accessing genetic heritage for scientific research, without commercial intention, are regulated by *Resolution No 6*.

<sup>103</sup> *Provisional Act No 2,186-16*, above n 95, Art. 9(I).

<sup>104</sup> *Provisional Act No 2,186-16*, above n 95, Art. 9(II, a and b).

<sup>105</sup> *Provisional Act No 2,186-16*, above n 95, Art. 9(III). See also Article 24 which states that 'the benefits arising from economic exploitation of a product or process developed from samples of components of the genetic heritage and associated traditional knowledge, obtained by a national institution or an institution with its headquarters abroad shall be shared in a fair and equitable way between the contracting parties, as provided in the regulations and relevant legislation.'

<sup>106</sup> *Provisional Act No 2,186-16*, above n 95, Art. 31.

<sup>107</sup> *Provisional Act No 2,186-16*, above n 95, Art. 31.

foreigner from using genetic resources and associated knowledge from another country without prior authorization of the particular holders of that knowledge. That is to say, in cases where traditional knowledge is held by a particular indigenous people outside the Brazilian territory, if this particular knowledge is not shared or held by any Brazilian indigenous peoples, a product or process derived from the use of this knowledge can be subject to commercial exploitation in Brazilian territory by a Brazilian or any foreign citizen without any legal obligation of benefit-sharing with the holders of the knowledge.

Access to traditional knowledge without the authorization of the legal authority, or without observance of the authorization given is punished by<sup>108</sup> (i) warning, (ii) fine,<sup>109</sup> (iii) seizure of the process or product obtained by the use of the traditional knowledge, (iv) suspension of the sale of the product derived from the traditional knowledge, (v) embargo of the activity, (vi) partial or total closure of the business, activity or undertaking, (vi) suspension or canceling of the registration, patent, license or authorization, (vii) loss or reduction of fiscal incentives and benefits granted by the government, (viii) loss or suspension of the right to receive financing from an official financing agency, (ix) intervention in the establishment and (x) prohibition of entering into contracts with the Public Administration for a period of up to five years. This Provisional Act does not specifically mention the civil and criminal sanctions against violations of traditional knowledge, although it does allow for their application.<sup>110</sup>

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<sup>108</sup> *Provisional Act No 2,186-16*, above n 95, Art. 30 (Para. 1). Further, *Decree N. 5, 459/2005* regulates and disciplines the application of the penalties established by Article 30 of the Provisional Act. See *Decree No. 5,459, 2005*, (Brazil) ('Decree No. 5,459') <<http://www.mma.gov.br/port/cgen/index.cfm>> at 23 November 2005.

<sup>109</sup> *Decree No. 5, 459*, above n 108. Decree No 5,459 establishes different financial penalties. The amount of the fine varies depending on the nature of the infringement and who commits it (special note: the fines are fixed in the Brazilian currency, which is the Brazilian Real. On December 2005, the exchanges rate was (approximately): R\$ 1,00 (one Real) is equivalent to AUD 1.75 (one Australian dollar and seventy five cents). In cases involving (illegal or unauthorized or not effective compliance with the authorization given) disclosure of or transmission of, or access to traditional knowledge for scientific research perpetrated by a legal entity, the value of the fine varies from R\$ 20,000.00 to R\$ 500,000.00. Where one of these infringements is committed by a natural person, the value varies from R\$ 1,000.00 to R\$ 50,000.00. In cases involving access to traditional knowledge for bioprospecting (considered an exploratory activity aimed to access traditional knowledge for commercial or industrial application) the value of the fine to a legal entity varies from R\$ 50,000.00 to R\$ 15,000,000.00. To a natural person, it varies from R\$ 10,000.00 to R\$ 100,000.00. The value of the fine will be increased by one third (1/3) whenever there is a claim for intellectual property rights for any process or product developed through the use of traditional knowledge. Further, the value will be increased by one half (1/2) whenever there is commercial exploitation. In cases involving the omission of the source of traditional knowledge, the fine varies from R\$ 1,000.00 to R\$ 200,000.00, for a legal entity and from R\$ 5,000.00 to R\$ 20,000.00 for a natural person. In all cases the final value of the fine is defined though an administrative process. The underlying idea of this legislation is to ensure the compliance with terms and the given authorization. As a result of this, the application of the fine can be suspended if the infringer agrees to obey them.

<sup>110</sup> *Provisional Act No 2,186-16*, above n 95, Art. 30(Para. 3).

**(d) *Beneficiaries of Protection***

In accordance with Article 8(j) of the CBD, indigenous and local communities which create, develop, hold, or conserve traditional knowledge are recognized by the Provisional Act No 2,186-16 as the owners of the rights over such knowledge.<sup>111</sup> In this sense, the term 'local community' means as 'a human group, including descendants of *Quilombo* communities, differentiated by its cultural conditions, [and] which is, traditionally, organized along successive generations and with its own customs, and preserves its social and economic institutions.'<sup>112</sup> No definition is provided for the term 'indigenous communities'.

**(e) *Conditions for Accessing Traditional Knowledge***

Under the Provisional Act No. 2,186-16, access to traditional knowledge<sup>113</sup> is authorized by the Genetic Heritage Management Council, after prior informed consent is given by the holders of such knowledge.<sup>114</sup> The main legal principle providing protection to and access to traditional knowledge is the provision that as a general condition, access to traditional knowledge shall only be authorized to Brazilian public or private institutions that carry out research and development in biological and related areas.<sup>115</sup> Access for foreign legal entities will only be authorized when the foreign entity that carries out research and development activities in biological and related areas joint with a Brazilian public institution which will coordinate the activities.<sup>116</sup>

When the probability of commercial use is apparent, the contract for use of genetic heritage and benefit-sharing should be signed before access is allowed. If potential for economic use is identified in a product or process arising from traditional knowledge, it should not be accessed without prior formalization of the contract.<sup>117</sup> The contract shall only enter into force after the

<sup>111</sup> *Provisional Act No 2,186-16*, above n 95, Art. 8.

<sup>112</sup> *Provisional Act No 2,186-16*, above n 95, Art. 7(III).

<sup>113</sup> Article 7 (V) of this Brazilian Provisional Act defines the term 'access to traditional knowledge' as 'acquisition of information on individual or collective knowledge or practice associated to genetic heritage, from an indigenous community or local community, for the purpose of scientific research, technological development or bioprospecting, with a view to its industrial or other application.'

<sup>114</sup> *Provisional Act No 2,186-16*, above n 95, Art. 16(Para. 9).

<sup>115</sup> *Provisional Act No 2,186-16*, above n 95, Art. 16.

<sup>116</sup> *Provisional Act No 2,186-16*, above n 95, Arts 8(Para. 1), 9(II), 11(IV b) and 16(Para. 6).

<sup>117</sup> *Provisional Act No 2,186-16*, above n 95, Art. 16(Paras 4 and 5).

consent of the Management Council.<sup>118</sup> The contract may be assigned by the holder of the rights over the traditional knowledge.<sup>119</sup>

(f) *Strengths and Weaknesses of the Current Approach to Protect Traditional Knowledge*

The analysis of the Provisional Act No. 2,186-16 has demonstrated a number of strengths and weaknesses. One of the main strengths relating to the protection of traditional knowledge in Brazil is the constitutional recognition that goods of material and non-material nature should be protected. One disadvantage, however, is that the Provisional Act No. 2,186-16 was not exclusively designed to protect traditional knowledge. Only two articles of this legislation are fully dedicated to the safeguarding of traditional knowledge while the remainders are mainly focused on the issue of access to components of genetic heritage. This weakness has been successfully remedied by the resolutions enacted by the Genetic Heritage Management Council. Another limitation is that the Brazilian Provisional Act is focused exclusively on the protection against misappropriation of traditional knowledge. It does not provide any mechanism for the preservation and promotion of traditional knowledge.

There are both strengths and weaknesses in the rules for access to traditional knowledge. The main strengths are the recognition that access is conditioned to the prior informed consent of the holders of such knowledge and the fact that the Genetic Heritage Management Council will authorize access to traditional knowledge exclusively to Brazilian public or private institutions. The participation of foreign legal entities in an enterprise to access traditional knowledge will only be authorized when the foreign entity is joined with a Brazilian public institution which will coordinate the activities. Some responses to this latter condition, however, have expressed the criticism that the rules for access are too rigid and would likely constitute a disincentive to the participation of a foreign entity in matters concerning the access to traditional knowledge. One disadvantage is that the legislation requires the prior informed consent of local and indigenous communities for access to and use of traditional knowledge, but does not specify whether consent of one or all community holders is required. In addition, the authorization of access by the ‘Genetic Heritage Management Council’ will

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<sup>118</sup> *Provisional Act No 2,186-16*, above n 95, Art. 29.

<sup>119</sup> *Provisional Act No 2,186-16*, above n 95, Art. 27.



be given after the prior informed consent of the holder of the knowledge and after the manifestation of the official organ responsible for Indian affairs.<sup>120</sup>

One of the main weaknesses in the Provisional Act No. 2,186-16 is related to the identification of the holders of traditional knowledge. First, there is no definition of the term 'indigenous communities'. In addition, there is neither any reference to traditional knowledge shared among distinct indigenous peoples nor is there any established mechanism for resolution of conflict between indigenous peoples who claims ownership rights over traditional knowledge. Another limitation in the Brazilian scheme is the lack of recognition of indigenous peoples' rights to be compensated for the use of their knowledge which is in the public domain.

## 7 Guyana

In Guyana, the major immediate problem is the absence of a legal system to protect traditional knowledge. The *National Development Strategy* (2001-2010) states that the Amerindian intellectual property will be recognized and protected by law. It also states that the access to traditional knowledge should be conditional upon the prior informed consent of and a fair share of the benefits for the holders. However, specific legislation has not been promulgated.<sup>121</sup> Another significant problem for indigenous peoples is that even though the Guyanese State has adopted virtually every international treaty in defence of indigenous peoples' rights, the legal framework to effectively implement them at the national level is still being developed.<sup>122</sup>

## 8 Surinam

Surinam faces certain weaknesses in protecting traditional knowledge. The first is the absence of a legislative and regulatory framework is the principal limitation. The second is that

<sup>120</sup> In Brazil, an indigenous person is legally considered as relatively incapable. Until 1988, the Brazilian Indian Foundation (FUNAI) was considered the only legal institution that could represent or defend indigenous affair. After the advent of the new Constitution in 1988, indigenous peoples have gained the rights to seek legal representation and take action independent of the FUNAI.

<sup>121</sup> *National Development Strategy (2001-2010). A Policy Framework. Eradicating Poverty and Unifying Guyana. A Civil Society Document*, [Chapter 5 (5.IV.43)], (2000).

<sup>122</sup> Roque Roldán Ortega, 'Models for Recognizing Indigenous Land Rights in Latin America.' (The World Bank Environment Department, 2004) . Ortega notes that the Ecuadorian and also the Venezuelan Constitutions describes indigenous peoples' rights related to their social, political and economic organizations, as well as other such their right to maintain and to develop their ethnic and cultural identity, values, uses, customs, religions by using future tense, leading to the conclusion that such rights must be regulated by subsidiary laws in order to be effective, and to date these laws have not been promulgated.

Surinam does not recognize its own ethnic and cultural diversity,<sup>123</sup> nor does it recognize or guarantee the collective rights of the Surinamese indigenous peoples.<sup>124</sup> The third is that Surinam has not ratified the main international agreements related to indigenous rights.

In April of 2000, the Surinamese Government and the leaders of some indigenous peoples and some of the Maroon people (people of African descent) signed an agreement known as the *Buskondre Dey Protocol*. The Protocol was enacted by a Presidential Decree in 2001 as a Framework Orientation Agreement, containing primary principles relating to the recognition of the collective rights of indigenous and Maroon peoples (although the scope and nature of these rights are not elaborated upon).<sup>125</sup> According to one commentator, the Protocol has not been further implemented by the present government.<sup>126</sup> To date, there are no negotiations proposals to introduce legislation to protect traditional knowledge in Surinam.

### III SUMMARY OF FINDINGS

This chapter has shown that the Amazonian countries are making positive efforts to improve their overall capacity to challenge and prevent the misappropriation of traditional knowledge. As has been discussed, of the eight Amazonian countries, only two (Brazil and Peru) have developed and implemented specific legislation affording positive and defensive protection for traditional knowledge. A further four nations, Venezuela, Bolivia, Ecuador and Colombia, have also given special effect to Decision 391 which facilitates defensive protection for traditional knowledge. Two nations (Guyana and Surinam) have yet to develop and, indeed, implement any form of legislative or statutory protection over traditional knowledge.

The Peruvian State has created a national *sui generis* regime to protect traditional knowledge and the Brazilian State has adopted legislation on an access and benefit-sharing framework (ABS law/policy) to protect traditional knowledge. The Brazilian and Peruvian legislation are

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<sup>123</sup> Section and Demographic of the Social and Housing Statistics, Social Statistics Branch of the United Nations Statistic Division, 'Ethnicity: A Review of Data Collection and Dissemination' (2003).

<sup>124</sup> United Nations Special Rapporteur on the Situation of Human Rights and Fundamental Freedoms of Indigenous Peoples, 'Formal Communication made Pursuant to Commission on Human Rights Resolution 2001/57. Failure of the Republic of Suriname to Recognize, Guarantee and Respect the Rights of Indigenous and Tribal Peoples to Lands, Territories and Resources, to Cultural Integrity and to be Free from Racial Discrimination' 2002. <[http://www.forestpeoples.org/documents/s\\_c\\_america/suriname\\_sp\\_rapp\\_jun02\\_eng.pdf](http://www.forestpeoples.org/documents/s_c_america/suriname_sp_rapp_jun02_eng.pdf)> at 30 August 2006.

<sup>125</sup> Forest Peoples Programme, 'The Republic of Suriname and its Compliance with the International Covenant on Civil and Political Rights. Articles 1, 26 and 27: The Rights of Indigenous Peoples and Maroons in Suriname' (Human Rights Committee of the International Covenant on Civil and Political Rights, 2002) <[http://forestpeoples.gn.apc.org/Briefings/Human%20rights/hrc\\_supplemental\\_jan02\\_eng.htm](http://forestpeoples.gn.apc.org/Briefings/Human%20rights/hrc_supplemental_jan02_eng.htm)> at 23 July 2006.

<sup>126</sup> Ibid

fairly comprehensive, with an emphasis on procedural aspects. However, some important gaps can be identified in the procedural aspects of these measures. For example, there is a lack of a clear procedure for determining the identity of the owners of the traditional knowledge, especially where a number of indigenous peoples share the same or similar knowledge. There is a difficulty in identifying which people(s)/group(s)/person(s) are entitled to authorize the access to, and the limits on, their/his/her authority. Moreover, there is a lack of clear information about how to obtain prior informed consent from the indigenous peoples sharing the same, or similar, knowledge, as well as how to identify the representatives of the indigenous peoples and to assess their representative power and capacity. There is also a lack of a clear statement as to which actions or conditions are forbidden, permitted, encouraged or mandatory. Finally, there is the absence of an appropriate mechanism regulating the benefit-sharing among indigenous peoples holding the same or similar knowledge.

Apart from the fact that Brazil and Peru have undertaken different initiatives to protect traditional knowledge, it can be said that there are more similarities than differences between the two legislation. The similarities include first the adoption of similar rationales underpinning the protection of traditional knowledge. Both countries have adopted a rights-based theory together with the conservationist approach. In this context, indigenous peoples' pre-existing rights over their traditional knowledge were merely recognized (not created) by the State. Further, such protection is linked to conservationist purposes. The Peruvian Law No 28,216, for instance, establishes protection for knowledge that is connected with biological resources, and the Provisional Act No 2,186-16 for knowledge associated with genetic heritage. Secondly, both sets of legislation recognize indigenous and local communities as the holders of traditional knowledge. Thirdly, rights over traditional knowledge are recognized independent of the status of the indigenous people as holders or creators of the knowledge. Fourthly, there are certain similarities in provisions for registers, benefit-sharing arrangements, and prior informed consent.

At first glance one may conclude that the scope of the Peruvian Law is wider than the scope of the contents of the Brazilian Provisional Act. The underlying reason is that while Peruvian Law is intended to protect collective knowledge associated with biological resources (which concept includes genetic resources, as well as any kind of biotic component of ecosystems), the Brazilian legislation is aimed at protecting traditional knowledge associated with information of genetic origin. Further, the Peruvian Law has adopted a more comprehensive definition for collective knowledge, which includes the characteristics of such knowledge.

The Brazilian Provisional Act has adopted an essentially pragmatic definition. However, it is important to note that no study exploring the practical effect of the difference between the scope of Brazilian and Peruvian legislation has been identified to date.

The examination undertaken in this chapter has found that the Amazonian countries have made considerable progress in the development of a framework to protect traditional knowledge at the national level. However, there is no standard mechanism to ensure the effective articulation of different national regulations. No progress has been made on the issue of protection of traditional knowledge held or shared by neighboring Amazonian indigenous peoples living in different countries.

A number of political and practical conditions which can be considered as favorable for the drawing up of a proposal for a regional *sui generis* system have been identified in this chapter. The political conditions are as follows:

- (i) all the Andean Nations (including Venezuela) are currently implementing a common regime created through Decision 391. In this context, they have agreed about the importance of the harmonization of their national legislation at the level of the Andean nations;
- (ii) there are parallels between the regulations of the requests for access to traditional knowledge, as well as in the structures and procedural flows adopted by the Andean Nations and Brazil;
- (iii) all of the Amazonian countries have already formally indicated their intention to harmonize their respective national legislations related to the access to, and protection of, traditional knowledge. Further, the Amazonian countries have expressed their concerns about the need for regional discussions and activities to bring about closer collaboration and cooperation, as well as interchange and joint work in technical areas related to protection of traditional knowledge;
- (iv) the Amazonian countries have recognized the difficulty of having a national legislation respected and enforced at an international level. Further, they have agreed about the need for an international framework for enforcement of the protections granted within national jurisdictions;
- (v) although several countries in the region already have legislation governing access to genetic resources and associated traditional knowledge, most of these countries lack

sufficient resources and appropriate institutional capacity to effectively achieve the objectives of their legal mandates;

- (vi) in view of the complexity of the international negotiations involving the issues of access to genetic resources and associated traditional knowledge, major efforts are required. As a result of this, the Amazonian countries have also agreed on the importance of having a common position at an international level regarding the issues of protection of, and access to, biological and genetic resources and associated traditional knowledge, as well as relating to sharing of benefits; and
- (vii) the Amazonian countries already have an appropriate institutional and organizational framework and support - the Amazon Cooperation Treaty Organization (ACTO) - for coordinating their joint work and actions, as well as the Amazonian Parliament for coordinating the legislative actions for the protection of biodiversity and related subjects.

The practical conditions which support the adoption of a regional system as a mechanism for the equitable distribution of benefits among the holders of traditional knowledge are as follows:

- (i) despite the progress made at an Andean region level - by the adoption of Decision 391, and individually made by each Amazon country by adopting or drafting a national framework - there has not yet been created an effective system to protect traditional knowledge held by two or more distinct indigenous peoples, in two or more countries at the same time;
- (ii) the Amazonian countries, in general terms, share a great amount of their biological diversity. In addition, regional integration agreements have given rise to organizations that carry out activities of a regional scope; and
- (iii) the Amazonian ethnic groups (in general) share a great amount of their traditional knowledge. In some cases, they have similar legal systems and even speak the same language.

The most important is that this chapter demonstrates that the adoption of a regional *sui generis* regime at the Amazon region level should be useful and workable. In the next chapter a set of recommendation concerned with the creation of such a regime will be provided.

## **PART FOUR**

## **PART FOUR: DEVELOPING REGIONAL SUI GENERIS PROTECTION OF TRADITIONAL KNOWLEDGE**

### **I INTRODUCTION**

Part four of the thesis considers how traditional knowledge held or shared by more than one Amazonian indigenous people should be protected. It provides recommendations for developing possible avenues to enable the development of a regional *sui generis* regime as means of protecting traditional knowledge at the Amazon level.

The previous chapters sought to show that in most cases the existing international agreements on intellectual property are mostly inadequate to meet the concerns of indigenous people for protection of their traditional knowledge. It was also shown that traditional knowledge does not fulfill the requirements of patentability.<sup>1</sup> They also sought to conclude that none of the existing *sui generis* models provides adequate protection to traditional knowledge held or shared by indigenous peoples from different countries.<sup>2</sup> Further, the previous chapters attempted to show that the use of customary law to regulate access to, and protection of, traditional knowledge can assist in the protection of indigenous peoples' rights and also assist in producing a more equitable application of the rule of law.<sup>3</sup> It was also shown that Amazon countries have made considerable progress in developing legal frameworks that protect traditional knowledge at a national level. However, in six Amazonian countries (Bolivia, Colombia, Ecuador, Guyana, Venezuela, and Suriname) legal protection remains inadequate. Brazil and Peru (where such protection does exist) have adopted different systems. Yet, despite this, a degree of similarity is present across the range of rules for protecting and accessing traditional knowledge.<sup>4</sup>

The legislation of the Amazonian countries that were examined here only protects traditional knowledge within their own territory. Accordingly, even when effectively implemented, these measures will be limited in their geographical scope of operation. Furthermore, there is no legislation dealing with issues regarding the potential overlap of rights that are recognized and/or granted over the same or similar traditional knowledge to different holders. As well,

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<sup>1</sup> See Chapter 5 of this thesis.

<sup>2</sup> See chapter 6 of this thesis.

<sup>3</sup> See Chapter 7 of this thesis.

<sup>4</sup> See Chapter 8 of this thesis.

there is no mechanism to ensure effective articulation of different national regulations. Thus, the problem would seem to lie in properly ascertaining which indigenous peoples are entitled to the rights - when more than one indigenous people share or held the same traditional knowledge - in the context of international recognition and enforcement of such rights.<sup>5</sup> In an associated context, a further important concern is how to ensure an equitable distribution of benefits within, and among, different holders of the same knowledge. As was shown, this question remains unresolved. Hence, the challenge remains for Amazon countries to create a framework to protect traditional knowledge that is held or shared by more than one indigenous people - not only within national borders but also across borders of the Amazon region.

All of the Amazonian countries have formally indicated their intention to harmonize their national legislation governing access to, and protection of, traditional knowledge. Furthermore, these countries have expressed concerns in relation to the need for regional discussions and activities to facilitate close collaboration and cooperation in technical areas regarding protection of traditional knowledge. In addition, the Amazonian countries have recognized the need and importance of adopting a joint position at an international level on the subject of access to biological diversity and access to, and protection of, indigenous peoples' traditional knowledge.<sup>6</sup>

The harmonization of national legislation would certainly represent an important step in reinforcing the protection of traditional knowledge. It may operate as a mechanism to avoid unfair competition between different holders and countries. Further, it may provide for more legal certainty in the access process. However, a mere harmonization of legislation is still not adequate to deal with the question of which indigenous peoples is entitled to authorize access to traditional knowledge, and which groups would be entitled to the rights over traditional knowledge that is shared by indigenous peoples of different countries.<sup>7</sup> Finally, and the most importantly, it is argued that it is impossible to achieve an equitable allocation and

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<sup>5</sup> Josephine R. Axt, M. Lynne Corn, Margaret Lee and David M. Ackerman, *Biotechnology, Indigenous People, and Intellectual Property Rights* (1993) Congressional Research Service, Library of Congress <[http://www.ipmall.fplc.edu/hosted\\_resources/crs/93-478.pdf](http://www.ipmall.fplc.edu/hosted_resources/crs/93-478.pdf)> at 18 November 2003.

<sup>6</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Draft Outline of the Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities Relevant to the Conservation and Sustainable Use of Biodiversity, and the Plan and Timetable for its Preparation*, 6th mtg, [Para 20], UNEP/CBD/COP/6/7, (2002).

<sup>7</sup> Stephen B. Brush, 'Indigenous Knowledge of Biological Resources and Intellectual Property Rights: The Role of Anthropology' (1993) 95(3) *American Anthropologist* 653-63.



distribution of benefits to indigenous peoples who hold such knowledge merely through a harmonization of national legislation, since payment to one indigenous people (or parts thereof) may be unfair to others who hold or share the same or similar knowledge. The unfair distribution of benefits may engender conflict between distinct indigenous peoples possessing or sharing similar knowledge. This is particularly the case when several groups share or held the knowledge and when only one group (who has authorized access to such knowledge) receives the financial benefits.<sup>8</sup> Given that a national framework is not suitable to resolve these issues, the ultimate solution would be the creation of a regional (supranational) *sui generis* regime for the protection of traditional knowledge held or shared by indigenous peoples of the various nations within a region.

Several political and practical conditions which can be considered as favorable for the drawing up of a proposal for a regional *sui generis* system have been mentioned in Chapter 8. Nevertheless, it should be noted that several challenges and obstacles that Amazonian Countries may face in the implementation of a regional *sui generis* regime were also identified alongside the previous chapters. These range from:

- (i) lack of financial, human and technical resources;
- (ii) lack of public education and awareness at all levels;
- (iii) lack of capacities for indigenous peoples and the cooperation among them;
- (iv) lack of synergies at national, regional and international levels;
- (v) weakness of institutional capacity for evaluation, monitoring and control;
- (vi) the need to link traditional knowledge legislation, biodiversity access and benefit-sharing laws and intellectual property systems;
- (vii) the need for coordination between authorities;
- (viii) the need to overcome cultural barriers among different institutions involved in the protection of traditional knowledge;
- (ix) the need to build cross-cultural participatory processes;
- (x) lack of clear recognition of indigenous peoples' rights over natural resources and their autonomy to manage those resources in their traditional way;
- (xi) the fact that harmonized benefit-sharing measures have not been developed for transboundary genetic resources;

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<sup>8</sup> Erica-Irene Daes, Special Rapporteur of the Sub-comm. of Prevention of Discrimination and Protection of Minorities and Chairperson of the Working Group on Indigenous People. Study on the Protection of the Cultural and Intellectual Property of Indigenous Peoples,(1993).

- (xii) in general, monitoring and compliance measures are weak.

Note should be made of the fact that, even though Peru and Colombia have both signed a bilateral Free-Trade Agreement with the United States of America - and other agreements are being negotiated - no attempt will be made in this thesis to examine the whether the bilateral negotiations undertaken by Amazonian countries might cause problems for them in implementing the recommendations provided in this chapter. Several trade agreements are being negotiated in the region.<sup>9</sup> However, it should also be considered the fact that the main regulations on intellectual property rights related with biological diversity and agriculture are being determined while the international level, the issue of traditional knowledge protection at the national level depends mostly on decisions taken within trade fora such as World Trade Organization and trade agreements, such as Free Trade Area of the Americas Agreement (FTAA).<sup>10</sup>

One of the main concerns is that the FTAA defines a new framework for trade and private property, by imposing a new ideological, legal, and political frame to define the relations between the transnational capital, the States, and the Latin-American peoples. Another concern is that the FTAA does not incorporate equity issues, cultural considerations and special measures to prevent negative impacts of free trade on the poor, particularly in relation to food security and biodiversity nor does it take into consideration the issue of protection of traditional knowledge and access.<sup>11</sup> It seems that trade agreements are being negotiated without taking into consideration the needs of indigenous and local communities. However, it should be mentioned that the bilateral Free-Trade Agreement signed by Peru and Colombia which is amended by a Side Letter aimed at including a series of concepts regarding biodiversity and traditional knowledge. The Side Letter states that: "The Parties recognize the

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<sup>9</sup> For more information about the Free-Trade Agreement signed by Peru and Colombia with the United States of America, see Bridges Weekly 25 January 2006. <[http://www.ustr.gov/assets/Trade\\_Agreements/Bilateral/Peru\\_TPA/Final\\_Texts/asset\\_upload\\_file869\\_8728.pdf](http://www.ustr.gov/assets/Trade_Agreements/Bilateral/Peru_TPA/Final_Texts/asset_upload_file869_8728.pdf)> at 6 April 2006. See also Manuel Ruiz Muller, *La Protección Jurídica de los Conocimientos Tradicionales: Algunos Avances Políticos y Normativos en América Latina* (2006) 26.

<sup>10</sup> *The Declaration of the Fourth Trade Ministerial Meeting in San Jose, 1998*, established the objectives of the FTAA: "To promote prosperity through increased economic integration and free trade among the countries of our Hemisphere, which are key factors for raising standards of living, improving the working conditions of peoples in the Americas and better protecting the environment" and "To strive to make our trade liberalization and environmental policies mutually supportive, taking into account work undertaken by the WTO and other international organizations". at <[http://www.ftaa-alca.org/Ministerials/SanJose/SanJose\\_e.asp](http://www.ftaa-alca.org/Ministerials/SanJose/SanJose_e.asp)> at 6 April 2006.

<sup>11</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Progress in the Implementation of the Programme of Work on Article 8(J) and Related Provisions and on the Integration of the Relevant Tasks into the Thematic Programmes of Work under the Convention and at the National Level*, 5th mtg, unep/cbd/wg8j/5/2 (2007). See also <http://www.grain.org/biodiversidad/?id=177> at 20.09.2007.

importance of traditional knowledge and biodiversity, as well as the potential contribution of traditional knowledge and biodiversity to cultural, economic, and social development. The parties recognize the importance of the following: (i) obtaining informed consent from the appropriate authority prior to accessing genetic resources under the control of such authority; (ii) equitably sharing the benefits arising from the use of traditional knowledge and genetic resources; and (iii) promoting quality patent examination to ensure the conditions of patentability are satisfied.' The Side Letter also states: 'The parties recognize that access to genetic resources or traditional knowledge, as well as the equitable sharing of benefits that may result from use of those resources or that knowledge, can be adequately addressed through contracts that reflect mutually agreed terms between users and providers.

Part Four comprises two chapters. Chapter 9 provides a set of core recommendations for designing and creating a regional *sui generis* regime aimed at protecting traditional knowledge at Amazon level. Chapter 10 concludes with a summary of the main findings and identifies issues for future research.

## CHAPTER 9

### ***SUI GENERIS* PROTECTION OF TRADITIONAL KNOWLEDGE: SET OF CORE RECOMMENDATIONS FOR DESIGNING AND CREATING A REGIONAL *SUI GENERIS* REGIME**

#### **I INTRODUCTION**

The aim of this chapter is to provide a set of recommendations for designing and creating a regional *sui generis* regime to protect traditional knowledge at the Amazon level. The recommendations presented in this thesis are primarily based on the concerns, needs and expectations of indigenous peoples. One of the main concerns of indigenous peoples is that traditional knowledge has been commercially exploited. In particular, pharmaceutical, botanical, seed, and agrochemical industries use traditional knowledge often without the authorization and financial reward flowing back to the traditional knowledge holders.<sup>1</sup> One of the main expectations of indigenous peoples relates to the need for recognition of, and respect for their ability and authority to control the ownership of, and access to their traditional knowledge. Following on from this are the rights to decide, determine, and authorize when, where and how their traditional knowledge can be accessed, via their customary laws and decision-making process.<sup>2</sup> The recommendations herein have been derived from the acknowledgement of the great significance the preservation of traditional knowledge bears to the cultural survival of indigenous peoples.<sup>3</sup> Associated with this is the necessity to take into consideration, *inter alia*, the collective or communal and inter-generational characteristics of traditional knowledge creation, of which development and innovative process is an integral part.<sup>4</sup>

The recommendations suggested here are drawn from a broad philosophical basis. These include both utilitarian and non-utilitarian theories which are unified in the support for the

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<sup>1</sup> Chapters 1 [Introduction] and Chapter 2 [V] of this thesis provide several examples of misappropriation of traditional knowledge.

<sup>2</sup> Indigenous Peoples Council on Biocolonialism (IPCB), Collective Statement of Indigenous Peoples on the Protection of Indigenous Knowledge. Agenda item 49(e): Culture (2004) UN Permanent Forum on Indigenous Issues. 3rd sess. <<http://www.ipcb.org/resolutions/htmls/pf2004.html>> at 31 July 2006.

<sup>3</sup> Terri Janke, 'Berne, Baby, Berne: The Berne Convention, Moral Rights and Indigenous Peoples' Cultural Rights' (2001) 5(6) *Indigenous Law Bulletin* 1-14. See also Graham Dutfield, 'Developing and Implementing National Systems for Protecting Traditional Knowledge: A Review of Experiences in Selected Developing Countries' (UNCTAD Expert Meeting on Systems and National Experiences for Protecting Traditional Knowledge, Innovations and Practices, 2000) 5.

<sup>4</sup> Indigenous Peoples Council on Biocolonialism (IPCB), above n 2.

view that traditional knowledge is useful and important on a numbers of levels - to enhance social welfare, to improve the livelihood of traditional knowledge holders and to preserve cultural integrity of indigenous peoples. Further, both legal and administrative measures already adopted by Amazonian countries to protect traditional knowledge have also been taken into account in formulating the recommendations. The recommendations, therefore, directly reflect the findings of the research undertaken in this thesis, with particular regard to the assertion that traditional knowledge which is shared and/or held by more than one indigenous people should be protected by a unitary *sui generis* regime, on behalf of all indigenous peoples owning such knowledge - those who could also have supplied the same or similar knowledge. It has therefore been argued that the Amazonian countries should establish a regional *sui generis* regime for the protection of that traditional knowledge. Such a regime should also be the sole and exclusive form of protection at Amazonian countries level for traditional knowledge associated with genetic and/or biological resources that is held or shared by more than one indigenous people. At this stage, this assertion should be considered to be the main recommendation of this thesis and is therefore presented first. From this, further recommendations have been developed and are presented in turn.

### **Main Recommendation**

#### ***1. Creation of a Regional Sui Generis Regime***

The Amazonian countries should establish a regional and unitary *sui generis* regime for the protection of traditional knowledge - herein called the 'Amazonian *sui generis* regime'. The Amazonian *sui generis* regime should be the sole and exclusive form of protection for traditional knowledge shared or held by more than one indigenous people.

The overarching aim in this chapter is to provide further recommendations on the potential steps forward to enable the development of a regional *sui generis* regime aimed at protecting traditional knowledge at Amazon level. General and specific recommendations that would create a starting point for the creation and implementation of the Amazonian *sui generis* regime are made and grouped by theme and presented in three sections. The first section sets out general recommendations linked to the issues of the creation and implementation of the Amazonian *sui generis* regime, as well as those matters affecting the use, exercise and administration of rights and interests in, and the monitoring of, the regime. The second section presents specific recommendations and several actions that require prior attention and

consideration in order to achieve the goals of designing and implementing the Amazonian *sui generis* regime. It also presents recommendations on the legal form of protection that Amazonian countries should adopt for the protection of traditional knowledge, in particular about the elements that should be included in such regime. It should be noted that recommendations about the scope and subject of protection and the rules for access and prior informed consent presented in this thesis are only illustrative. The intention is to outline the major options, as it is argued that the Indigenous Regional Protocol, built on indigenous peoples' customary laws and practices, should provide the substantive matter for these rules. The third section sets out the specific recommendations which are linked to the implementation of the Amazonian *sui generis* regime, as well as those matters affecting the use, exercise and administration of rights and interests in, and the monitoring of, the regime. For the purposes of clarity and convenience the main recommendations are summarized within boxes or tables.

## II GENERAL RECOMMENDATIONS

### A *A Legal Trajectory for Creating the Regional Sui generis Regime*

The main recommendation made in this chapter is that a regional unitary *sui generis* regime for traditional knowledge protection should be established by the Amazonian countries. Such a regional *sui generis* regime should be binding in its entirety and should have uniform applicability and effect in the Amazonian countries.

It is possible to create the regional *sui generis* regime through an intergovernmental treaty (or by amending the existing *Treaty for Amazon Cooperation*)<sup>5</sup> or via the enactment of supranational legislation. The enactment of such a supranational legislation may provide the best pathway for the creation and the implementation of the Amazonian *sui generis* regime. This is because it comes into effect without further legal action by the state. In contrast, incorporating an intergovernmental treaty into the national legal system requires the adoption of special executive or legislative measures by the member states. A further advantage of utilizing supranational legislation is that it has supremacy over national legislation while the norms arising from intergovernmental treaties are subsumed into national legal frameworks.

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<sup>5</sup> *Treaty for Amazon Cooperation*, opened for signature 3 July 1978, (entered into force 3 July 1978) (TCA).

The Amazon Parliament, together with the Amazon Cooperation Treaty Organization (ACTO) should be appointed to the role of supervision and coordination of the entire process for the creation of the Amazonian *sui generis* regime.<sup>6</sup> These two organizations should also coordinate the consultation and participation of indigenous peoples and/or their representative organizations in such a process.

### **1     *Creating the Amazonian Traditional Knowledge Council***

The effective implementation of the regional *sui generis* regime demands the creation of an institution that would represent the interests of the Amazonian countries as a whole. This thesis argues that such an institution (known here as the Amazonian Traditional Knowledge Council) should incorporate both intergovernmental and supranational elements. Some type of intergovernmental scheme is needed to facilitate continuous consultation, coordination and cooperation between the Amazonian countries on various issues that specifically relate to the protection of traditional knowledge. Similarly, a supranational scheme is also needed to ensure the independence and impartiality of such an institution. In this case, such an institution will be connected to the Amazonian countries but, at the same time, will be independent of the various national governments.

The Amazonian Traditional Knowledge Council should have a distinct legal personality or, alternatively, it may be created within the Amazon Cooperation Treaty Organization structure.<sup>7</sup> In the latter case, the executive office of the Amazonian Traditional Knowledge Council could be practicably located within the Amazon Cooperation Treaty Organization structure. Furthermore, the Amazonian countries should consider the most appropriate geographical centre within to situate the various national, sub-national and local offices.

### **2     *Organizational Structure of the Amazonian Traditional Knowledge Council***

The Amazonian Traditional Knowledge Council should have a multi-tiered and participatory system of management and decision, bringing together the entire structure of the Council,

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<sup>6</sup> The Amazon Cooperation Treaty Organization (ACTO) is a supranational organization responsible for implementing the objectives established in the Amazon Cooperation Treaty. It has a permanent Secretariat based in Brasilia, Brazil. For more information, see *Treaty for Amazon Cooperation* (TCA). See also Amazon Cooperation Treaty Organization (Acto), *Strategic Plan 2004/2012* ACTO <[http://www.otca.org.br/PDF/Strategic\\_Plan.pdf](http://www.otca.org.br/PDF/Strategic_Plan.pdf)> at 18 November 2005.

<sup>7</sup> If the *Amazon Cooperation Treaty* is amended, the Amazon Cooperation Treaty Organization should also be responsible for overseeing the protection and the access to traditional knowledge in Amazon region, in conformity with the specific intergovernmental treaty or supranational legislation and decision taken together with the national offices.

starting from the local levels and extending to sub-national, national and ultimately, regional levels. Its structure should be clearly defined and it should be highly participatory in all regards, thereby facilitating efficiency, transparency and flexibility. To conform to this particular recommendation, the Amazonian Traditional Knowledge Council should exercise its functions and responsibilities as a single entity.

This thesis recommends that the administrative organizational structure of the Amazonian Traditional Knowledge Council should comprise eight national offices (one located in each Amazonian country), and sub-national and local offices. Further, in order to ensure balanced representation and to avoid the problem of national differences within the structure from one country to another, the Amazonian countries - with participation and involvement of the representative organizations of indigenous peoples - should define (country by country) the number of offices, at sub-national and local levels. Additionally, at all levels, the Amazonian countries should take into account the diversity and the geographic distribution of indigenous peoples in each country.

The internal structure of each office should have one administrative board, comprising of persons (indigenous and/or non-indigenous) who are specialists in the subject and these should have a fixed mandate for specific timeframes in relation to their tasks and duties. In addition, each office should have a technical committee (composed on a case by case basis) by the main representatives of indigenous peoples, who are the knowledge holders that is the subject of the access by third party corporations. The potential members of the technical committee should be nominated by indigenous peoples, but their involvement should only occur in cases related to knowledge shared or possessed by the indigenous peoples they represent. In any event, both boards may, subject to the provisions of their rules of procedure, be assisted by external advisers or experts.

The composition of the administrative boards for the offices at the local level should be defined and determined by the Amazonian indigenous peoples. Subsequent to this, the members of the local offices should have the responsibility to appoint the members of the sub-national offices, who in turn should nominate the members of the national office. The executive council should be specifically composed of eight persons and their proxies. They should be appointed by the respective governments of each Amazonian country. The members of the executive council should elect a Chairperson and a Deputy from within its members. In addition, each office of the Amazonian Council should have an advisory unit and



accompanying staff who are available to provide legal assistance and services specifically in relation to intellectual property rights. Such an advisory unit should also assist in negotiating contracts with individuals or corporations seeking access to traditional knowledge. Finally, the Amazonian Traditional Knowledge Council should be managed and be supervised by the Chairperson of the executive council.

The Amazonian Traditional Knowledge Council should be supervised by a committee comprising one representative of the respective Foreign Affairs' Minister of each Amazonian country. The decisions in relation to granting authorization or prior informed consent for access to traditional knowledge, as well as the ratifying the agreement, should be taken by a simple majority of the administrative and/or technical boards' representatives. In the case of a split vote, the main authority of the national office would give the deciding vote. A board of appeal, comprising a Chairman and two other members, should have the capacity to review and scrutinize decisions made by the national offices.

The suggested organizational structure for the proposed Amazonian Traditional Knowledge Council can be summarized as follows:

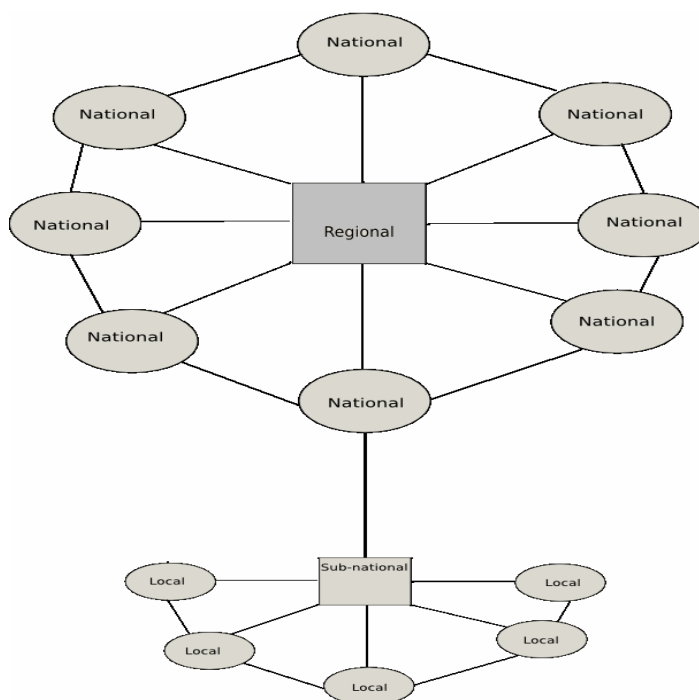


Figure 2: Suggested organizational structure for the proposed Amazonian Traditional Knowledge Council

### 3 *Responsibilities of the Local, Sub-National and National Offices and the Executive Council of the Amazonian Traditional Knowledge Council*

Some suggested functions and responsibilities should be common to all offices of the Amazonian Traditional Knowledge Council and these should include:<sup>8</sup>

- (i) to monitor and oversee, in coordination with other offices, the implementation of the protection regime in compliance with the Amazonian *sui generis* regime and the Indigenous Regional Protocol;
- (ii) to verify whether prior informed consent of indigenous peoples has been properly obtained and to check the validity of contracts for licensing traditional knowledge;
- (iii) to provide guidance in resolving the issue of collective prior informed consent;
- (iv) to identify and to determine the rightful holders of certain traditional knowledge for the effective recognition of their rights and their prior informed consent;
- (v) to oversee the management of any breach relating to compliance with the Indigenous Regional Protocol;
- (vi) to develop, organize, maintain and update all registers and databases created under the Amazonian *sui generis* regime; as well as to ensure the safekeeping and the authenticity of registered information;
- (vii) to formulate opinions; provide advice; deliver assistance; and require information from other offices, where considered necessary, in relation to matters pertaining to the protection, preservation and maintenance of traditional knowledge;
- (viii) to proceed with the registration of traditional knowledge; to maintain the register; and to control the license contract;
- (ix) to recommend any modification of the administrative organizational structure when it is needed in order to ensure equal representation to all indigenous peoples;
- (x) to provide an opinion in relation to defining priorities in regard to the implementation of actions and strategies for preserving traditional knowledge, as well as to supervise their implementation;

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<sup>8</sup> Examples of functions that competent authority may have are provided by United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(J) and Related Provisions, Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Prior Elements, 5th mtg [para 20], UNPE/CBD/WG8/5/6.

- (xi) to represent the Amazonian Traditional Knowledge Council in the jurisdiction of the office; and
- (xii) to proceed with the process of registration of the organizations charged with formal representation of indigenous peoples.

Besides these common functions and duties, the national offices should have the following responsibilities:

- (i) to provide, on the behalf of the holders of traditional knowledge, for which access has been sought, prior informed consent. This requires the effective participation of all sub-national and local offices - located in the area inhabited by holders of indigenous peoples;
- (ii) to make decisions about the control and management and to propose forms of protection for particular categories of knowledge;
- (iii) to negotiate and sign the license for any use of traditional knowledge. This process requires full consultation with the knowledge holders who have the rights to grant a license. It should be consistent with the Amazonian *sui generis* regime, as well as with the Indigenous Regional Protocol. Finally, notification of the terms and conditions of the negotiation should be provided to other national offices;
- (iv) to supervise and to complete the intergovernmental treaty and/or supranational legislation and the Indigenous Regional Protocol, as well as the accompanying internal regulations of the Amazonian Traditional Knowledge Council;
- (v) to coordinate, along with the sub-national and local offices, the collection, management and distribution of benefits. This should be undertaken in accordance with the Indigenous Regional Protocol and the relevant the Amazonian *sui generis* regime;
- (vi) to coordinate, in conjunction with the sub-national and local offices, the implementation of actions and strategies for preserving traditional knowledge and to supervise their associated implementation; and
- (vii) to initiate, on behalf of Amazonian indigenous peoples, legal action to protect against or prevent both the unauthorized use of traditional knowledge by third parties (either directly or indirectly), as well as to nullify any form of legal protection conferred over traditional knowledge-based products or processes which was accessed without the prior informed consent of the holders of the knowledge.

In addition to the functions above outlined, the regional office should have the following mentioned duties:

- (i) to represent the Amazonian Traditional Knowledge Council at both regional and international levels;
- (ii) to approve any modification to the administrative organizational structures of national, sub-national and local offices;
- (iii) to establish guidelines and directives and to approve any plans of action and annual budgets of the Amazonian Traditional Knowledge Council;
- (iv) to supervise the collection, management and the distribution of benefits, in accordance with the Indigenous Regional Protocol and the Amazonian *sui generis* regime;
- (v) to define, in conjunction with the sub-national and local offices, the priorities and the execution of actions and strategies for the preservation and the conservation of traditional knowledge, as well as to supervise their implementation;
- (vi) to undertake technical, as well as administrative, audits for the supervision of the effective management of the national, sub-national and the local offices. In addition to this, to impose administrative sanctions on members of the administrative board who transgress the norms and the rules concerned with the Amazonian *sui generis* regime or infringe interests and rights of indigenous peoples in their traditional knowledge; and
- (vii) to pursue criminal or civil actions where appropriate against any member of the relevant administrative or technical boards of the Amazonian Traditional Knowledge Council.

### **Recommendations**

#### ***2. Creation of the Amazonian Sui Generis Regime***

The Amazonian *sui generis* regime could be established through the signing of a specific intergovernmental treaty or through revisions to the Amazon Cooperation Treaty or via the enactment of supranational legislation.<sup>9</sup>

<sup>9</sup> Treaty for Amazon Cooperation, above n 5

In conjunction with the *sui generis* regime, Amazonian countries should create a (single) centralized and coordinated regional entity to oversee protection and access to traditional knowledge.

### **III SPECIFIC RECOMMENDATIONS: THE DESIGN OF THE AMAZONIAN SUI GENERIS REGIME**

#### **A *Establishing a Foundation for Developing the Amazonian Sui Generis Regime***

A regional conference aimed at clarifying the main elements of a *sui generis* regime for the protection of traditional knowledge should be undertaken by the Amazonian countries with the involvement and participation of indigenous peoples and their representative organizations. Special attention should be accorded to the issues of defining the key terms, policy objectives, purposes, and the subject matter to be afforded protection. Emphasis should also be placed on procedures for determination of the beneficiaries of that protection and that of the rights to which the beneficiaries are entitled. Furthermore, cultural or other concerns of indigenous peoples should be fully taken into account. The role of their customary laws should also be considered at this stage.

#### **1 *Main Principles and Concepts Guiding the Creation of the Amazonian Sui Generis Regime***

The World Intellectual Property Organization (WIPO) has identified a range of core principles that states may use to create national law and policy. The core principles recommended by WIPO are: (i) responsiveness to the needs and expectations of traditional knowledge holders; (ii) recognition of rights; (iii) effectiveness and accessibility of protection; (iv) flexibility and comprehensiveness; (v) equity and benefit-sharing; (vi) consistency with existing legal systems governing access to associated genetic resources; (vii) respect for and cooperation with other international and regional instruments and processes; (viii) recognition of the specific characteristics of traditional knowledge; and (x) providing assistance to address the needs of traditional knowledge holders.<sup>10</sup>

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<sup>10</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *The Protection of Traditional Knowledge: Revised Objectives and Principles*, 9th sess, WIPO/GRTKF/IC/9/5, (2006).

The need for adopting these principles has been exhaustively and comprehensively analyzed and debated by the 'Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore' (GRTKF) of WIPO.<sup>11</sup> The Committee has concluded that the adoption of these principles should enable the creation of an equitable, balanced, effective, consistent and appropriate regime, so as to protect traditional knowledge. Accordingly, this thesis will not repeat the analysis in relation to these principles. Instead, attention is focused on the adoption of the principles of equity, as well as flexibility and comprehensiveness which constitute the substantive foundation for and which provide a definition of the legal essence of the protection of traditional knowledge as conceived and advocated by this thesis.

**(a) *Principles of Equity and Equality***

Advocacy of use of the principles of equity and equality as one of the main justifications for the protection of traditional knowledge was explored in Chapter 4. To achieve the effective protection of traditional knowledge, it is first necessary to consider that indigenous peoples have inherent rights to assert their ethnic and cultural identities, as well as to maintain, develop and promote their values, customs, languages and systems of knowledge. Their right to enjoy their individual cultures and preserve their cultural integrity should be both recognized and protected. Thus, Amazonian countries should adopt legislative, administrative and judicial measures to accommodate the differences that exist between indigenous peoples' cultures and values and the culture of mainstream society, so as to ensure that the enjoyment of such rights by indigenous peoples is not subject to any form of discrimination.

Furthermore, all of the Amazonian countries should guarantee equal treatment and protection of traditional knowledge, by adopting special measures where necessary. This includes formal recognition of the distinct characteristics of the culture and knowledge systems of indigenous peoples. Indigenous human rights and self-determination rights should accordingly be used as one of the bases for designing a distinctive regional and *sui generis* regime to protect traditional knowledge. The adoption of principles of equity and equality should better enable the development of multicultural policies comprising the political, cultural and socio-

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<sup>11</sup> Ibid. See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, *The Protection of Traditional Knowledge: Draft Objectives and Principles*, WIPO/GRTKF/IC/10/5. See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, *Reproduction of Document WIPO/GRTKF/IC/9/5 "The Protection of Traditional Knowledge: Revised Objectives and Principles"*, 11 ss WIPO/GRTKF/IC/11/5 (2007).

economic recognition of indigenous peoples' rights and interests. Such policies should ensure that the claims and the rights of indigenous peoples are recognized and fully implemented, rather than ignored or overridden by mainstream society.

**(b) *Principle of Flexibility and Comprehensiveness***

The adoption of flexibility and comprehensiveness is needed to ensure that a regional scheme provides effective protection of traditional knowledge whilst also accommodating the dynamic and evolving nature of knowledge and the range of different ways in which traditional knowledge contributes to developing either processes or products. To facilitate efficacy, the regional *sui generis* regime should provide holders of traditional knowledge a range of both options and forms for protecting traditional knowledge, in accordance with the holders' needs. It should allow indigenous peoples make decisions on a case-by-case basis (depending on the type of knowledge for which protection is sought) with the regard to the appropriate legal form of protection required by a type of knowledge. In order to do so, this *sui generis* regime should include the main elements constitutive of a patent regime. These should incorporate provisions for characteristics included in such regimes as geographical and designation of origin, copyright, trade secrets, trademarks and certification marks frameworks. In other words, such a regime should embrace and articulate the wide range of legal approaches, similar to those which are currently being used by the existing intellectual property regimes.

**(c) *Concept of Dynamic Efficiency***

This thesis recommends using a dynamic concept of economic efficiency as a basis for designing the Amazonian *sui generis* regime, rather than utilizing the static concept which is a classical method for the economic analysis of law.<sup>12</sup> One reason for favoring the dynamic concept arises from the need to develop a *sui generis* regime which takes into account that when genetic and/or biological resources are used in the field of pharmaceutical, agriculture

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<sup>12</sup> The need to change the economic justification in the definition of intellectual property rights, particularly in the issues concerning the access to, and use of genetic resources by taking into account a dynamic concept of economic efficiency has been analysed and supported by authors such as Reichman, Swanson and Dedeurwaerdere. See especially Timothy Swanson and Timo Goschl, 'Property Rights Issues Involving Plant Genetic Resources: Implications of Ownership for Economic Efficiency' (2000) 32(1) *Ecological Economics* 75-78. See also J. H. Reichman, 'Legal Hybrids Between the Patent and the Copyrights Paradigms' (1994) 94 *Columbia Law Review* 2432-48. See also Tom Dedeurwaerdere, Vijesh Krishna and Unai Pascual, 'Biodiscovery and Intellectual Property Rights: A Dynamic Approach to Economic Efficiency. Discussion Paper 13.2005' (University of Cambridge, 2005)

and food industries, 'value adding' occurs at various stages - and not just in the final stages of developing a process or product. The contributions made by indigenous peoples also add value to the final product or process resulting from the application of traditional knowledge. Indigenous peoples add value by providing the initial information about the medicinal properties of plants or animals. Specifically, plants and animals with therapeutic activity are 'prescreened' (or tested to identify particular characteristics) by indigenous peoples.<sup>13</sup> Consequently, it can be shown that traditional knowledge contributes to the entire process, not only because it makes the research process more cost-effective (as it enables the reduction the range of plants or animals that should be screened and tested for developing a final product), but also because traditional knowledge increases the chances of drug development - as once bioactive compounds are identified, they can be tested and combined in many ways for further research.<sup>14</sup> In some cases, traditional knowledge may constitute the main information on which the final product is based.<sup>15</sup>

Another reason for using the dynamic concept of economic efficiency is that it focuses on the acquisition of new knowledge and new mechanisms throughout the entire process and this maximizes future developmental options under conditions of uncertainty. It deals, therefore, with the need to create incentives for innovation in the entire chain of production, not only as a final outcome.<sup>16</sup>

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<sup>13</sup> Swanson and Goschl, 'Property Rights Issues Involving Plant Genetic Resources: Implications of Ownership for Economic Efficiency', above n 12, 79. See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Matters Concerning Intellectual Property and Genetic Resources, Traditional Knowledge, and Folklore - An Overview, [II (Para. 12)], WIPO/GRTKF/IC/1/3, (2001). See also Sampath, *Defining an Intellectual Property Right on Traditional Medicinal Knowledge: A Process-Oriented Perspective. Discussion Paper No 4*

<sup>14</sup> See Chapter 4[IV] for more information about the contributions of traditional knowledge to the development of products and processes. As mentioned in Chapter 4, indigenous peoples' pre-screening increases the efficiency of finding useful plants for medicinal properties by more than 400 per cent. Further, by using traditional knowledge, bioprospectors can increase the success ratio in trials for useful substances from one in ten thousand samples to one in two. For more information, see Stephen B. Brush and Dorren Stabinsky (eds), *Valuing Local Knowledge - Indigenous People and Intellectual Property Rights* (1996) 183. See also Naomi Roht-Arriaza, 'Of Seeds and Shamans: The Appropriation of the Scientific and Technical Knowledge of Indigenous and Local Communities' (1996) 17(Summer) *Michigan Journal of International Law* 919-38. See also Sampath, *Defining an Intellectual Property Right on Traditional Medicinal Knowledge: A Process-Oriented Perspective*, above n 13.

<sup>15</sup> Padmashree Gehl Sampath, *Biodiversity Prospecting Contracts for Pharmaceutical Research. Institutional and Organizational Issues in Access and Benefit-Sharing* (Doctoral thesis, University Hamburg, 2003) 162.

<sup>16</sup> Dedeurwaerdere, Krishna and Pascual, above n 12. They argue that a static concept of efficiency focuses at the optimal allocation of the existing resources under ideal conditions, providing an incentive only at the final stage of the innovation process.



### **Recommendations**

#### ***4. Adoption of Principles of Equity and Equality***

Amazonian countries should provide indigenous peoples with equal opportunities to access the legal mechanisms aimed at protecting intellectual creations and innovations. In order to do so, the principles of equity and equality should be used as the main foundation for the creation of a regional *sui generis* regime.

#### ***5. Adoption of Principle of Flexibility and Comprehensiveness***

The principle of flexibility and comprehensiveness should be adopted as a means of accommodating the dynamic and the evolving nature of traditional knowledge and to provide a range of different options and forms that will protect such knowledge - one that is in accordance with the rights-holders' needs and acknowledges the different ways in which traditional knowledge contributes to developing processes or products.

#### ***6. Use of the Concept of Dynamic Concept***

The dynamic concept of economic efficiency should be used to design the Amazonian *sui generis* regime.

### **B      *Adoption of Legal Presumption***

#### ***1      Legal Presumption of Collective Ownership***

As outlined above, the Amazonian *sui generis* regime should recognize the collective nature of rights over traditional knowledge for and, on behalf of, all indigenous peoples possessing or sharing that knowledge. Accordingly, the benefits arising from the commercial exploitation of traditional knowledge should be equitably distributed among all indigenous holders of the knowledge, irrespective of whether they are parties of the access agreements. To achieve this equitable allocation, the Amazonian *sui generis* regime should presume those indigenous peoples who share the same habitat and environmental conditions and have access to as well

as the use of the same genetic and/or biological resources (they will formulate identical or similar systems of knowledge) own the knowledge collectively.<sup>17</sup>

If this recommendation is to be adopted,<sup>18</sup> a process need to be established to enable indigenous peoples who claim exclusive ownership over particular knowledge and demand consequent rights over it to rebut the presumption regarding collective ownership. To rebut this presumption, the applicant should lodge a document claiming exclusive rights over the relevant knowledge in any office of the Amazonian Traditional Knowledge Council. Such a document should provide a brief description of the knowledge and associated genetic and/or biological resources, as well as providing clear and convincing evidence to support their particular claim. Responsibility for the investigation, analysis and the adjudication of claims should lie with the national authority.

As part of the investigation process, cross-referencing of information within the range of Amazon region databases should first be undertaken. If the search fails to locate any indication of other indigenous peoples' possessing and/or sharing the same or similar knowledge, then the authority should inform the other local/national/regional offices of the results. Those offices should then inform and consult with the relevant indigenous peoples' representative organizations. If no evidence is found to show that such knowledge is shared with other indigenous peoples, then the national authority should recognize and register the claimant as having exclusive rights over that relevant knowledge. Such recognition can, in fact, be cancelled at any time if other indigenous peoples claim and subsequently prove that they also hold the same knowledge. In addition, misleading or false information could result in the cancellation of any exclusive rights that have been granted.

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<sup>17</sup> Brendan Tobin, 'The Search for an Interim Solution' in Kathy Whimp and Mark Busse (eds), *Protection of Intellectual Biological & Cultural Property in Papua New Guinea* (2000) 169,77. Tobin suggests that 'the regime should establish a legal presumption that use of biological resources presumes ownership of knowledge about the properties of those resources. This presumption should operate where resources have historically been used by indigenous peoples or local communities for medicinal, biopesticides, psychoactive or toxic purposes, or where the important characteristics of cultivated resources are confined to cultivars in clearly identifiable ecosystems. In such cases the rights to use the resources should be dependent on the user having a valid license to use the related knowledge.'

<sup>18</sup> John Voumard, 'Commonwealth Public Inquiry into Access to Biological Resources in Commonwealth Areas' (Australian Government, Department of the Environment and Heritage, 2000) 39. The need for adopting a similar presumption affirming that 'use of resources over which there exists knowledge, in particular regarding medicinal plants, implies the use of that knowledge' was found in a public inquiry made by the Australian Government.

## 2 *Legal Presumption of Use of Traditional Knowledge Presumed to be in the Public Domain*

The regional *sui generis* system should address the status of traditional knowledge which has already entered the public domain. The Amazonian *sui generis* regime should recognize that indigenous peoples have rights over traditional knowledge, even when such knowledge is considered to be in the public domain. As a result, commercial exploitation of traditional knowledge considered to be in the public domain should be subject to the payment of a fee forwarded to the competent authority of the Amazonian Traditional Knowledge Council.<sup>19</sup> To facilitate this, a legal presumption should be created in the Amazonian *sui generis* regime relating to the use of traditional knowledge in the public domain. This should declare that the use of genetic and biological resources that encompass the associated traditional knowledge and are already in the public domain implies the use of such knowledge.<sup>20</sup>

This presumption should be effective prospectively. Therefore, it should be applied to traditional knowledge in the public domain, but which has not been employed in industrial activity by the date of the enactment of the law that creates the Amazonian *sui generis* regime. Traditional knowledge already absorbed by industrial applications could still be exploited without the need for the payment of a fee. To overcome this legal presumption, the users of the knowledge would have the onus of proving that his/her invention was not developed on the basis of traditional knowledge available in the public domain.

This thesis provides two proposals for facilitating the implementation of this legal presumption. Firstly, Amazonian countries, in conjunction with the indigenous peoples,

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<sup>19</sup> The French concept of 'domaine public payant' may be used as guide for creation of a system to compensate indigenous peoples for the use of their knowledge which is considered to be in the public domain. For more information, see J.A.L. Sterling, *World Copyright Law* (1999) 769.

<sup>20</sup> United Nations on Environment Programme, Convention on Biological Diversity, Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, *Report on the Role of Intellectual Property Rights in the Implementation of Access and Benefit-Sharing Arrangements*, 1st mtg, [Para. 40], UNEP/CBD/WG-ABS/1/4, (2001). <<http://www.biodiv.org/doc/meetings/abs/abswg-01/official/abswg-01-04-en.doc>> at 17 September 2006. The possibility of adopting a 'presumption that use of genetic resources implies use of associated knowledge, innovations and practices', though, was presented by the Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing of the CBD at its first meeting in 2002. The proposal made in this thesis has a narrow scope; the presumption should be applied exclusively to traditional knowledge that is considered to be in the public domain. See also Henrietta Fourmile, 'Indigenous Interests in Biological Resources in Commonwealth. Synthesis of Submissions and Related Information. Appendix 10.' (Australian Government, Department of the Environment and Heritage, 2002) <<http://www.deh.gov.au/biodiversity/science/access/inquiry/appendix10.html#10>> at 7 July 2006. Fourmile argues that 'a presumption that use of resources over which there exists knowledge, in particular regarding medicinal plants, implies use of that knowledge, should be used as principles or elements that should guide any agreements between a collector/researcher and an indigenous community (or communities).'

should undertake an inventory and codification of traditional knowledge considered to be in the public domain. Such a database should be made available for search by patent offices to ensure that such knowledge will be searched and taken into account during the examination of applications for the granting of patents. Secondly, the implementation of a disclosure requirement, via a mechanism that documents evidence of prior informed consent regarding traditional knowledge (directly or indirectly) used in the research and/or development of the product or process subject to any form of intellectual property protection, would provide a more feasible and practical opportunity to facilitate the implementation and the compliance with this presumption.

### **Recommendations**

#### ***7. Creation and Adoption of a Legal Presumption of Collective Ownership***

A legal presumption of collective ownership in relation to traditional knowledge should be incorporated into the Amazon *sui generis* regime. Specifically, it should establish that when indigenous peoples live in the same habitat, have access to the same genetic and biological resources, use these resources in the same or in a similar manner, and use them for the same purpose, it should be presumed that they have developed identical or similar systems of knowledge. Consequently, such traditional knowledge should be considered to be collectively developed and therefore, collectively owned.

#### ***8. Creation of a Legal Presumption of the Use of Traditional Knowledge in the Public Domain***

A legal presumption regarding the use of traditional knowledge in the public domain should be incorporated into the Amazon *sui generis* regime. It should establish that when genetic and/or biological resources are used in accordance with traditional knowledge in the public domain, the use of such knowledge should be presumed.

**C     *Defining the Role of Customary Laws and Decision-Making Process - Indigenous Regional Protocol***

In general, the Amazonian indigenous peoples' right to assert their ethnic and cultural identities and, in particular, to maintain, develop and promote their cultures, languages and systems of knowledge are already recognized by the Amazonian countries, with the exception of Surinam.<sup>21</sup> Furthermore, the right of indigenous peoples to use and apply their customary laws to their affairs and to resolve their own internal conflicts - so long as these customary laws do not violate fundamental rights guaranteed by the relevant national statutory framework - has also been acknowledged.<sup>22</sup>

Indigenous peoples argue that their customary laws, customary systems of ownership, management and transmission of traditional knowledge should be taken into account in the setting of the common goals for the protection, preservation, conservation, promotion and/or enhancement of traditional knowledge.<sup>23</sup> In fact, this thesis argues that it is possible to provide a special attentions and consideration of the needs, interests and rights of indigenous peoples when the legislation process includes indigenous peoples and their representative organizations. This approach leads to the creation of a legislation that is both in the interests of the States and does not provide a threat to traditional knowledge.

However, it has been shown that despite the fact that certain advantages exist in the application of these customary laws and in respecting indigenous peoples' institutions and decision-making processes, several difficulties are also associated with the use of customary law as a mechanism to protect traditional knowledge.<sup>24</sup> There are different reasons for these difficulties, including the vast array of customary laws and different systems of indigenous representation and decision-making processes.

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<sup>21</sup> See Chapter 2 [IV] of this thesis for more information about the rights already granted by the Amazon countries to their indigenous peoples. See also WIPO/GRTKF/IC/9/5, *The Protection of Traditional Knowledge: Revised Objectives and Principles*, above n 10.

<sup>22</sup> See Chapter 2 [II] of this thesis for more information about the use of customary law by Amazonian indigenous peoples.

<sup>23</sup> Coordinator of Indigenous Organizations of the Amazon Basin (Coica), *Intellectual Property Rights and Biodiversity: The COICA Statement* (1994) <<http://users.ox.ac.uk/~wgtrr/coica.htm> <http://www.austlii.edu.au/au/journals/AILR/2001/11.html>> at 30 September 2003. See also Four Directions Council, 'Forests, Indigenous Peoples and Biodiversity: Contribution of the Four Directions Council' (Secretariat for the Convention on Biological Diversity, 1996).

<sup>24</sup> See Chapter 7 of this thesis for more information about the difficulty of applying customary law outside the traditional context.

## 1 *Creation of an Indigenous Regional Protocol*

One challenge in applying customary law as a means of protecting traditional knowledge is to accommodate and harmonize the multiplicity and the diversity of customary laws with the one relevant national legal system. To facilitate this harmonization and to prevent problems of conflict arising between customary law; it is recommended that a single, comprehensive and consistent Indigenous Regional Protocol - encapsulating a set of uniform norms, rules and principles identified from the customary laws of all Amazonian indigenous peoples - should be developed. Such a Regional Protocol should form the main basis in the protection of, and access to, traditional knowledge. It should also provide the foundation for defining matters, such as the scope, subject and beneficiaries of protection. It should also provide the main rules governing access to traditional knowledge and the principles for granting or denying prior informed consent, as well as the criteria for distributing the various benefits among the holders of traditional knowledge.<sup>25</sup>

The adoption of this recommendation raises the question of determining the exact dimensions for the development of this Regional Protocol. It is suggested that each Amazonian country should encourage and assist indigenous peoples to identify (from the multiplicity of customary laws) a set of common norms or rules and decision-making procedures that could be used to deal with the issues of ownership of rights; management of rights; the equitable sharing of benefits within communities; the rules governing access to traditional knowledge; and the relevant dispute settlement resolution processes to be incorporated in the relevant national protocol.<sup>26</sup> A broad discussion must therefore be undertaken. When an agreement is achieved at a national level (meaning that indigenous peoples from each Amazonian country have agreed on the content of the national protocols), the Amazonian countries should provide institutional support to indigenous peoples to facilitate the harmonization of the various (eight) national protocols so as to produce a single Regional Protocol which will, in turn, be formally adopted by the Amazonian *sui generis* regime.

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<sup>25</sup> See Chapter 2 [V] of this thesis for more detail about indigenous peoples' issues, perspectives and expectations regarding traditional knowledge protection.

<sup>26</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Prior Elements*, 5th mtg [para 20], UNPE/CBD/WG8j/5/6.

## 2 *Indigenous Systems of Representation*

A further challenge for using customary law relates to the range of indigenous representative systems and their decision-making processes. The discussion in Chapter 7 highlighted this in respect to the variations in indigenous peoples' systems of representation and the significant number of organizations entitled to represent them.<sup>27</sup> It was shown that this made it difficult to identify and assess the legitimate representatives of indigenous peoples and the associated extent of their authority to represent indigenous peoples. Accordingly it is important to provide more transparency and legal certainty in relation to the protection of traditional knowledge. This may be achieved by establishing a consensus among Amazonian indigenous peoples on their representation as part of the process of implementing the Amazonian *sui generis* regime.<sup>28</sup>

Involvement of the representative organizations of the indigenous people in the creation and the implementation of a legal regime to protect traditional knowledge is a way of legitimizing and authenticating such a regime. To facilitate their participation, Amazonian countries, through cooperative processes with indigenous peoples and their representative organizations, should identify the structures employed in indigenous peoples' representative organizations and assess their authority or leadership, decision-making and dispute management systems. Further, to promote legal certainty and transparency in the process of protection of, and access to, traditional knowledge, this thesis recommends that Amazonian indigenous peoples should create a unified system of representation. Such a unified system of representation is proposed in this thesis. It is recommended that, at a local level, representation should be effected either by discrete indigenous internal institutions, such as the council of elders, the shaman, the committee, the council of young members, or by the local offices of the Amazonian Traditional Knowledge Council. At sub-national, national, supranational (or regional) and international levels, indigenous people should be represented by the respective offices of the Amazonian Traditional Knowledge Council. Furthermore, the linkages between the Amazonian Council and indigenous peoples' organizations should be strengthened to facilitate effective cooperation at different levels in the process of formulating, implementing

<sup>27</sup> See Chapter 7 [C] for more information about the difficulties with the ascertainment and adjudication of customary laws and problems related to the multiplicity of organizations entitled to represent indigenous peoples.

<sup>28</sup> See Chapter 7 of this thesis for more information about the feasibility of using indigenous peoples' customary laws in the regulation of access to, and protection of traditional knowledge, and the difficulty in assessing the legal representational power of the indigenous peoples' representative organizations, along with the difficulty in determining the applicable customary law.

and monitoring the protection of traditional knowledge. To participate in such a cooperative and collaborative process, representative organizations should be formally registered by the Amazonian Council.

### **Recommendations**

#### ***9. Creation and Formal Adoption of an Indigenous Regional Protocol***

A single Indigenous Regional Protocol should be formally adopted under the Amazonian *sui generis* regime and should be made enforceable in at all the Amazonian countries.

This protocol should have primacy for the establishment of the rules governing the definition of the objectives and subject of protection; the access to traditional knowledge; the identification of the beneficiaries of protection; the equitable sharing of benefits within communities and management of rights; and the relevant dispute settlement resolution processes.

#### ***10. Creation of an Indigenous Peoples' Representative System***

A unified system of representation to deal with their common concerns and interests regarding the issues of access to, and protection of their traditional knowledge, should be adopted by the Amazonian indigenous peoples.

### **D Identification of the Objectives of the Protection**

The policy objectives for protecting traditional knowledge should reflect the concerns and the perspectives of indigenous peoples, as well as the national interests which the proposed framework is intended to support. It should also be shaped by and be consistent with the commitments already made by national governments. Chapter 2 demonstrated that, in general, the Amazonian indigenous peoples share the same views, expectations and concerns regarding the question of access to, and protection of, their traditional knowledge. In addition, as indicated in Chapter 8, the Brazilian *Provisional Act No. 2,186-16/2001*,<sup>29</sup> the Peruvian

<sup>29</sup> *Act Regulating Access to the Genetic Heritage, Protection of and Access to Associated Traditional Knowledge, Provisional Act No 2,186-16, 2001, (Brazil) (Provisional Act No 2,186-16) <<http://www.mma.gov.br/port/cgen/index.cfm>> at 23 July 2006.*



*Law No. 27,811/2002*<sup>30</sup> and the *Common Regime on Access to Genetic Resources (Decision 391)*<sup>31</sup> have similar objectives in relation to the protection of traditional knowledge.<sup>32</sup> Thus, the recommendations of policy objectives suggested in this thesis are drawn from the common goals expressed by the Amazonian indigenous peoples and also the legal provisions contained in *Decision 391* and the Brazilian and Peruvian legislation. As common grounds of consistency and harmony within national laws and indigenous peoples' needs and expectations have been identified (as discussed in Chapters 2 and 7), it can be assumed that the adoption of the objectives recommended herein should provide a firm foundation for the development of consensus on the more detailed aspects of protection in the Amazonian *sui generis* regime.

It is recommended that indigenous peoples should have the right to identify and decide on the objectives of protection by using the mechanisms of the Indigenous Regional Protocol. It is proposed that the main objectives of the Amazonian *sui generis* regime should be the protection, preservation and promotion of the use of traditional knowledge. Moreover, such a regime should also create incentives for the preservation, maintenance and dissemination of traditional knowledge. Accordingly, it is recommended that the approach to protection of traditional knowledge should have five overlapping strands.

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<sup>30</sup> *Law No. 27,811, Law Introducing a Protection Regime for the Collective Knowledge of Indigenous Peoples Derived from Biological Resources, 2002, (Peru) (Art. 2), ('Law No. 27,811')* <<http://www.grain.org/brl/?docid=81&lawid=2041>> at 23 July 2006.

<sup>31</sup> *Andean Community of Nations Decision 391: Common Regime on Access to Genetic Resources*, opened for signature, (entered into force).

<sup>32</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, *The Protection of Traditional Knowledge: Draft Objectives and Principles*, Actually, WIPO has concluded that, in general, most of the existing legal measures already adopted share certain common objectives. A range of objectives for the protection of traditional knowledge has been identified for the protection of traditional knowledge by the Intergovernmental Committee. These are: (i) recognize value; (ii) promote respect; (iii) meet the actual needs of traditional knowledge holders; (iv) promote conservation and preservation of traditional knowledge; (v) empower holders of traditional knowledge and acknowledge the distinctive nature of traditional knowledge systems; (vi) support traditional systems; (vii) contribute to safeguarding traditional knowledge; (viii) repress unfair and inequitable uses; (ix) concord with relevant international agreements and processes; (x) promote innovation and creativity; (xi) ensure prior informed consent and exchanges based on mutually agreed terms; (xii) promote equitable benefit-sharing; (xiii) promote community development and legitimate trading activities; (xiv) preclude the grant of improper intellectual property rights to unauthorized parties; (xv) enhance transparency and mutual confidence; and (xvi) complement protection of traditional cultural expressions.

**1     *The Acknowledgement of Indigenous' Inherent Rights over Traditional Knowledge and to the Empowerment of its Holders***

The first strand should acknowledge the rights indigenous peoples over traditional knowledge and their inherent right to control and to decide how and by whom their knowledge can be used, particularly their ability to deny certain uses of their knowledge that might potentially violate their spiritual beliefs. It should also recognize the rights of indigenous peoples to license the use of their knowledge.

**2     *The Determination of Prior Informed Consent and the Limitation of Unauthorized Access to Traditional Knowledge***

In terms of the second strand, the Amazonian *sui generis* regime should provide effective mechanisms for the prevention of, and remedy for, any action which has the eventual aim of dispossessing indigenous peoples of their traditional knowledge and depriving them of their cultural integrity. To facilitate this particular objective, the Amazonian *sui generis* regime should provide adequate mechanisms to avoid unauthorized use and/or disclosure of traditional knowledge and ensure that when traditional knowledge leads to commercial gain, the benefits are fairly shared with indigenous peoples. It should also provide appropriate mechanisms to enable indigenous peoples to suppress commercial or industrial exploitation and/or use of any product or process consisting of, or developed, from traditional knowledge without just and equitable compensation for the holders of such knowledge.

**3     *The Acknowledgement of the Distinctive Nature of Traditional Knowledge and the Facilitation of its Preservation and Protection***

The third strand is concerned with safeguarding the creative process of traditional knowledge. The Amazonian *sui generis* regime should be effective in achieving the preservation of traditional knowledge as an evolving body of knowledge and the maintenance and promotion of customary uses and practices related to the management of genetic and biological resources. This thesis argues that the creation and preservation of traditional knowledge depends on the preservation of the cultural integrity of indigenous peoples - or on the maintenance of traditional lifestyle, languages, beliefs and other cultural expressions of the cultural environment. Accordingly, measures should be developed for preserving traditional knowledge systems and these should afford incentives to ensure the maintenance and continuous development and innovation of traditional knowledge.

This strand should aim at preserving and strengthening indigenous peoples' cultural integrity, particularly in respect of their institutions, cultures and traditions. In addition, it should incorporate provisions to strengthen and revitalize the inter-generational transmission of such knowledge,<sup>33</sup> as well as recognize indigenous peoples' rights to maintain and to develop their distinctive identities, cultures and values.<sup>34</sup> A further provision that should be included by the Amazonian countries in the regime is the registration of traditional practices and systems.

Another important institutional mechanism is that Amazonian countries should develop is one that seeks to preserve the existing language diversity in the Amazon region. In this respect, such a mechanism should aim to facilitate an awareness of the importance of the retention, maintenance, use and protection of indigenous languages. Furthermore, it is argued that Amazonian countries, in conjunction with the indigenous peoples, should establish reliable structures and indicators to enable an assessment relating to the retention of traditional knowledge, as well as to ascertain the level and extent of the capacity for retention of language diversity.

Moreover, it is recommended that the Amazonian countries should encourage and support indigenous peoples to maintain maximum genetic diversity of traditional varieties and associated traditional knowledge, with particular consideration being given to customary practices and traditional knowledge systems. In this regard, Amazonian countries should provide indigenous peoples with the necessary tools, materials and institutional training to manage these resources. The creation of a network of key clans, families, groups and peoples who maintain rare or high diversity in traditional crops should be encouraged. As well, the establishment of households' seed stores to form community seed-banks should also be promoted by Amazonian countries. These countries should particularly afford indigenous peoples a security of income so as to facilitate the implementation of the network and the community seed-banks. The Amazonian countries should raise awareness that landraces or

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<sup>33</sup> Commonwealth Secretariat of the United Nations Conference on Trade and Development (Unctad), 'Report of the UNCTAD-Commonwealth Secretariat' (Paper presented at the Workshop on Elements of National Sui Generis Systems for the Preservation, Protection and Promotion of Traditional Knowledge, Innovations and Practices and Options for an International Framework, Geneva, 4-6 February 2004). A range of actions aimed at preserving traditional knowledge has been identified and recommended by 90 expert participants in the workshop jointly organized by the Commonwealth and UNCTAD secretariats, in cooperation with the Quaker United Nations Office.

<sup>34</sup> Danish International Development Agency (DANIDA), *Best Practices for Including Indigenous Peoples in Sector Program Support* (2004) 16. Danish Agency notes that generally, the root causes of the loss of indigenous languages are often related to economic pressure, destruction of the environment and indigenous livelihood, and to issues of land and resources rights. For more information about the threats to the Amazonian indigenous culture, see Chapter 2 of this thesis.

traditional varieties should be preserved, not only for the interests of indigenous peoples but also for the future of global agricultural innovation.<sup>35</sup>

The Amazonian countries, with the involvement and cooperation of indigenous peoples, should create a framework to survey and map the landraces or traditional varieties of important crop plants. Such documentation would help to highlight the importance of these resources and to control their use and to sustain them for future community use and trade. In addition, the Amazonian countries, with the involvement and cooperation of indigenous peoples, should establish rules governing the trade and exchange of landraces.

#### **4     *The Promotion of Respect for Indigenous Peoples' Human Rights and to Contribute for Cultural Integrity***

The fourth strand underlies the general requirement to respect indigenous peoples' human rights. It is argued here that the human rights of indigenous peoples are devalued when renewable and non-renewable resources within indigenous peoples' lands are exploited without their prior informed consent and without any benefits accruing to them. In addition, unauthorized exploitation of natural resources within indigenous peoples' lands may increase their poverty and overwhelm their cultural integrity. Thus, protection of indigenous rights should include the use of, management and conservation of these resources. Further, where the ownership of these resources belongs to the state, consultation with indigenous peoples should be established.<sup>36</sup> The Amazonian countries should recognize that indigenous peoples' human rights, self-determination rights and rights over the land are vital for the preservation, promotion and protection of traditional knowledge. As a corollary, the Amazonian countries should establish a framework defining the legal status and ownership rights over the natural resources (renewable and non-renewable) within their lands. Further, Amazonian countries should guarantee the appropriate mechanism for monitoring compliance with the recognized rights.

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<sup>35</sup> See Chapter 4 [IV.C] of this thesis for more information about the importance of landraces for global agricultural innovations.

<sup>36</sup> As mentioned in Chapter 2 of this thesis, in general, in the Amazonian countries the state owns the rights over non-renewable resources.

## 5 *The Recognition of the Intrinsic Value of Traditional Knowledge Intrinsic Value its Contribution to the Development of Products and Processes*

The fifth strand addresses the need to structure a protection regime in such a way as to reflect the utilitarian values of traditional knowledge. The Amazonian *sui generis* regime should promote the use, the development of, and recognize the contributions made by indigenous peoples and their knowledge associated with biological resources. Emphasis should be placed on the significance of the contribution made by traditional knowledge to the general welfare, particularly in relation to trade and economic development; environmental protection; and sustainable use of biological diversity, anti-desertification strategies, food security and human health.<sup>37</sup> The Amazonian *sui generis* regime should ensure that traditional knowledge and technologies are valued and are given the same respect and treatment as other forms of knowledge. This may be effected by policies that promote better understanding among society at large that the respect for, and preservation and protection of, indigenous culture and heritage are essential, not only for the survival and integrity of community, but also to provide them with the conditions to fulfill the role they play in the conservation and sustainable use of the biological diversity.

This is not to suggest that other objectives for the protection of traditional knowledge are not important and should not be pursued as a priority by indigenous peoples. Rather, the aim is to demonstrate the most significant proposals and to suggest that complementary approaches can be successfully combined and appropriately coordinated in order to meet the needs and expectations of indigenous peoples. Therefore, Amazonian countries, in conjunction with their indigenous peoples, should consider whether there is a need to add other policy objectives, such as objectives relating to the conservation and the sustainable use of biological diversity through utilizing traditional knowledge in development projects and in environmental impact assessments.<sup>38</sup> Other objectives could include strengthening indigenous socio-legal

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<sup>37</sup> See Chapter 4 [IV] for more information about the potential value of traditional knowledge and its valuable contribution to the development of products and processes.

<sup>38</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Draft Outline of the Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities Relevant to the Conservation and Sustainable Use of Biodiversity, and the Plan and Timetable for its Preparation*, 6th mtg. [Para 20], UNEP/CBD/COP/6/7, (2002). The Working Group on Article 8(j) and Related Provisions of the Convention on Biological Diversity notes that 'in many indigenous and local communities, some traditional practices relevant to the conservation and sustainable use of biological resources have ceased as a result of such factors as loss of land, disappearance of subsistence species from local ecosystems, and national programmes for modernization and resettlement. However, the knowledge of those practices still remains,

institutional capacities; encouragement of education and/or training of indigenous peoples; and the promotion of mechanisms to advance indigenous control and administration of land and resources.

### **Recommendation**

#### ***11. Objectives of the Protection***

Indigenous Regional Protocol should ultimately guide the identification and definition of the objectives of protection. The main objectives of the Amazonian *sui generis* regime should be the protection, preservation and promotion of the use of traditional knowledge. Such a regime should also promote the creation of incentives for the preservation, maintenance and dissemination of traditional knowledge. It is recommended that the approach to protect traditional knowledge should have five overlapping strands, which are:

- (i) the acknowledgement of indigenous inherent rights over traditional knowledge and the empowerment of its holders;
- (ii) the determination of prior informed consent and the limitation of unauthorized access to traditional knowledge;
- (iii) the acknowledgement of the distinctive nature of traditional knowledge systems and the facilitation of its preservation and protection;
- (iv) the promotion of respect for indigenous human rights and cultural integrity; and
- (v) the recognition of the intrinsic value of traditional knowledge and its contributions to the development of products and processes.

### **E      *Identification of the Scope of the Protection***

A clear identification of the subject of protection should facilitate the definition of rights and the identification of the beneficiaries of the protection of such knowledge. In order to make such identification possible, it is necessary to precisely define key terms such as ‘knowledge’, ‘innovations’ and ‘practices’, as mentioned in Article 8(j) of the Convention on Biological Diversity (CBD).<sup>39</sup> In addition, classification of traditional knowledge is also essential, as

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making their reintroduction, in relevant circumstances, a practical option for the purposes of indigenous and local communities.’

<sup>39</sup> *Convention on Biological Diversity*, opened for signature 5 June 1992, (entered into force 5 June 1992) (CBD) Art. 8(j).

different types of knowledge or different contributions and applications, such as whether traditional knowledge is related to genetic and/or biological resources used in pharmaceutical and chemical development or in the agricultural and food industries, may demand different standards of legal protection.

## **1     *Scope of Protection***

To identify the scope of protection, it is important to consider that traditional knowledge is generally accessed together with genetic resources which are considered by the CBD to be the primary basis for implementing any benefit-sharing. The Bonn Guidelines, however, call for benefit-sharing to be also extended to derivatives of genetic resources. If the scope of protection is limited to traditional knowledge associated to genetic resources, as defined in the CBD, the potential to recognize indigenous peoples' knowledge rights will be limited. Accordingly, this thesis recommends that the scope of protection should be broader, covering traditional knowledge associated with genetic resources and their derivatives, such as bio-molecules, genes and extracts, and related biological resources and genetic resources. Therefore, indigenous peoples' rights should be recognized and respected whenever their knowledge forms part of the development of, or constitutes an essential part of the conception of the invention, regardless to whether it leads to development of a derivative or synthetic product.

It is also emphasized that protection may be sought for content or substance of knowledge, know-how, practices, innovations and skills. Elements of traditional knowledge for which protection could potentially apply may have different essential components or subject matter. The types and elements of traditional knowledge associated with genetic and biological resources that may be the subject matter of protection were identified earlier.<sup>40</sup> The types of knowledge listed in Chapter 3 are an illustrative example of the traditional knowledge elements which may be protected under the Amazonian *sui generis* regime. Indigenous peoples, through the Indigenous Regional Protocol, should define the nature and the content of traditional knowledge that is to be protected.

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<sup>40</sup> See Chapter 3 [IIC] for more information about the types and elements of traditional knowledge that may be subject matter of protection.

## 2 *Inventory and Classification of Traditional Knowledge*

Indigenous peoples argue that their knowledge should not be compartmentalized because of the holistic nature of traditional knowledge. This thesis argues that in practice, in order to draw up an adequate and effective regime to protect traditional knowledge, it is necessary, to some extent, to set appropriate limits to the scope of traditional knowledge for which protection is being sought, in particular regarding the content and nature of the knowledge and its actual and potential contributions and applications. This is because different categories of knowledge or different applications demand a special mode of protection. As Sampath argues, the compartmentalization of traditional knowledge should pave the way for the identification of the legal structures which are most appropriate for the protection of the said knowledge, and should facilitate the definition of the rights that will suit the expectation of the holders of that knowledge.<sup>41</sup> In addition, it should be noted that the recommended compartmentalization should not affect the holistic concept of traditional knowledge within the traditional context, particularly with regard to the creation and implementation of legal and special measures aimed at preserving and promoting the use of traditional knowledge.

This thesis considers that the utility-based approach is useful in identifying and separating traditional knowledge, by means of its actual and potential contributions and applications, as regards different industrial/agricultural sectors where it might be used.<sup>42</sup> Further, special consideration should be given to the nature of traditional knowledge and the range of ways by which such knowledge leads to the development of processes or products. This information should be the key criteria for defining what traditional knowledge should be protected. More specifically, the classification or categorization of traditional knowledge should be made by considering the character of the traditional knowledge, as regards its content, nature and the actual or potential contribution and application that such knowledge may have in different sectors. This includes pharmaceuticals, natural therapies, agriculture, personal care products, food and beverages, conservation, environmental, and agricultural management. The information compiled and entered in the register may include both textual and digital data, as well as videos, audio clips, magnetic tapes and photographs.

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<sup>41</sup> Sampath, *Biodiversity Prospecting Contracts for Pharmaceutical Research. Institutional and Organizational Issues in Access and Benefit-Sharing*, above n 15, 162.

<sup>42</sup> Sampath, *Defining an Intellectual Property Right on Traditional Medicinal Knowledge: A Process-Oriented Perspective*. Discussion Paper No 4, above n 13.



The classification of the subject matter of protection under the existing intellectual property regime may provide guidance for the classification of traditional knowledge. For example, the International Patent Classification system may be used as a basis to classify and arrange traditional knowledge which corresponds roughly to the subject matter of patent.<sup>43</sup> Similarly, classification should also indicate whether a particular category of knowledge corresponds roughly to the subject matter of geographical and designation of origin, or copyright, trade secrets, trademarks and certification marks.

A register system that classifies traditional knowledge should play a role in formalizing prior informed consent, negotiating access to traditional knowledge, defining rights over traditional knowledge, and preventing its misappropriation. A well-defined and organized classification and compilation of knowledge, together with an easily identifiable set of its holders should provide greater transparency and legal certainty to the process of protection of, and access to, traditional knowledge. Further, this register may be used as part of a legislative system for the assertion of rights over traditional knowledge.

### **Recommendations**

#### ***12. Identification of the Scope of Subject of Protection***

The Indigenous Regional Protocol should guide the identification of those components of traditional knowledge that should be protected. The scope of the protection should cover traditional knowledge associated with genetic resources and their derivatives, such as bio-molecules, genes and extracts, and related biological resources.

#### ***13. Creation of a System for the Inventory and Classification of Traditional Knowledge and a Register for its Holders***

The Amazonian countries, in conjunction with the indigenous peoples, should develop and support the creation of a regional institutional system of identification and classification of traditional knowledge. This should also extend to identifying the indigenous peoples who share the same or similar traditional knowledge.

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<sup>43</sup> See, Commission on Intellectual Property Rights, 'Integrating Intellectual Property Rights and Development Policy' (2002) 91, for more information about the Traditional Knowledge Resource Classification (TKRC) based on the International Patent Classification system which is already in use in India.

The Amazonian *sui generis* regime should establish and support the development of local, sub-national, national and regional registers of traditional knowledge. Such registers should be developed, managed and controlled by the Amazonian Traditional Knowledge Council.

The Amazonian *sui generis* regime should provide that the creation of registers of traditional knowledge by individuals or organizations - other than the Amazonian Traditional Knowledge Council or indigenous peoples themselves - is conditional upon the effective involvement and prior informed consent of indigenous peoples.

#### ***14. Assessment of the Potential Value of Traditional Knowledge***

The Amazonian countries, in cooperation with indigenous peoples, should adopt a framework to investigate and accurately assess the actual and potential economic benefits of traditional knowledge arising from industry as a whole, taking into account its different sectors such as pharmaceuticals, natural therapies, agriculture, personal care products, food and beverages, and conservation environmental and agricultural management.

### **F      *Sui Generis Protection***

This thesis acknowledges that no form of legal protection can replace the complex social and traditional system where such knowledge is created, developed and preserved within indigenous original communities.<sup>44</sup> However, as has been demonstrated in the previous chapters, there is a need to strengthen indigenous peoples' rights to restrict the opportunities for misuse or misappropriation of traditional knowledge and promote their ability to preserve traditional knowledge systems. Therefore, a legal mechanism to protect traditional knowledge is needed to prevent access to traditional knowledge without the prior informed consent of the indigenous peoples and to suppress commercial or industrial exploitation of any product or process consisting of, or developed from traditional knowledge, without just and equitable compensation for the holders of such knowledge.

It was demonstrated in Chapter 5, the existing international agreements on intellectual property are mostly inadequate to meet the concerns of indigenous people for protection of their traditional knowledge. Besides, even though the existing regimes, such as trademarks, collective, and certification marks, geographical indications and designation of origin, are

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<sup>44</sup> World Intellectual Property Organization, *Intellectual Property and Traditional Knowledge. Booklet n. 2* (2005) 4.

useful to protect products based on traditional knowledge, they are not, in most cases, capable of protecting the knowledge (itself) on which the product is based.

It is argued here that the measures taken to protect traditional knowledge should be closely related to the objectives and subject matter of protection. Different objectives in protecting traditional knowledge and different elements of traditional knowledge have been identified in this thesis.<sup>45</sup> An adequate regime that will protect traditional knowledge must provide a range of different options, forms and rules for the effective implementation of the protection. These measures must form the framework for an effective, just and viable system that will adequately protect traditional knowledge.

It may be a very complex task to create a single regime to meet the wide range of objectives and structures needed to protect traditional knowledge, while also accommodating the concerns and needs of indigenous peoples. However, because the holistic nature of traditional knowledge reflects an intrinsic aspect of the cultural identity of indigenous peoples which is incumbent on society to preserve, adopting a broad approach to protection (rather than a number of specific frameworks) may more effectively realize legal and social equity.

A *sui generis* regime would most likely provide better protection for traditional knowledge because it would incorporate all characteristics and the full perception of traditional knowledge in its original cultural context, as well as it would incorporating the relevant aspects of human rights and rights pertaining to self-determination of the holders of the knowledge. In this context, the main characteristics of traditional knowledge - such as holistic, flexible, and adaptable or dynamic, nature; collective ownership and communal origination; non-material form and oral and transgenerational transmission; and strong interconnection of indigenous peoples' culture and values, as well as with its surrounding environment and resources - should be acknowledged and protected under a *sui generis* regime.

As it was demonstrated in Chapter 5 of this thesis, products and processes based on traditional knowledge-base have been protected by indigenous and non-indigenous under patent, trade, collective, and certification marks, geographical indications, designations of, and appellation of origin, copyright and plant breeders' rights. Because of that, under the Amazonian *sui generis* regime the requirements for the access to traditional knowledge and

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<sup>45</sup> See Chapters 3 and 4 of this thesis.

for the granting of prior informed consent, as well as for the allocation of rights of the holder of the knowledge used to develop the product or process subject of the protection, vary depending on the propose of the use of traditional knowledge, as well as the type of protection granted to the product or process traditional knowledge-based.

Thus, in order for the protection to be effective, the Amazonian *sui generis* regime must be drawn on legal concepts from a range of related areas, both intellectual property and non-intellectual property. For instance, the regime should be shaped as an articulate mechanism that consolidates the relevant characteristics of classic intellectual property regimes - such as patents, trade, collective, and certification marks, geographical indications, designations of, and appellation of origin, copyright and related rights and plant breeders' rights. Examples of non-intellectual concepts that may have direct influence on the creation of the Amazonian *sui generis* regime encompass human rights, in particular economic, cultural and social rights; unfair competition, unjust enrichment, misappropriation of goodwill, principles and concepts from traditional cultures; environmental protection, including the conservation of biological diversity.<sup>46</sup>

This *sui generis* structure should provide indigenous peoples with a flexible tool for the defensive and positive protection of traditional knowledge.<sup>47</sup> Further, it should be noted that the adoption of a framework that is simultaneously new, unique and consolidated should help to avoid conflict between the different measures operating within different frameworks. It should also avoid unnecessary duplication of efforts.

Further, the use of databases and registers as worthwhile mechanisms to provide adequate protection for different goals in protecting traditional knowledge and also to conserve, promote and as part of a legislative system for the assertion of rights over traditional

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<sup>46</sup> UNPE/CBD/WG8j/5/6, *Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Prior Elements*, above n 8, para 84.

<sup>47</sup> The need to use a bundle of legal measures to protect traditional knowledge is widely recognized. For example, it has been recognized by Posey, Dutfield and Muller. For more information, see Darrell A. Posey, 'Indigenous Peoples and Traditional Resource Rights: A Basis for Equitable Relationships?' (Paper presented at the Workshop on Indigenous Peoples and Traditional Resources Rights, University of Oxford, The Green College Centre for Environmental Policy & Understanding, 28 June 1995). See also, Darrell A. Posey, *National Law and International Agreements Affecting Indigenous and Local Knowledge: Conflict or Conciliation? APFT* <[http://lucy.ukc.ac.uk/Rainforest/SML\\_files/Posey/posey\\_1.html](http://lucy.ukc.ac.uk/Rainforest/SML_files/Posey/posey_1.html)> at 25 January 2006. See also Manuel Ruiz Muller, *La Protección Jurídica de los Conocimientos Tradicionales: Algunos Avances Políticos y Normativos en América Latina* (2006) 200. See also Manuel Ruiz Muller, 'The Andean Community Regimes on Access to Genetic Resources, Intellectual Property, and the Protection of Indigenous Peoples' Knowledge' in Christophe Bellmann, Graham Dutfield and Ricardo Meléndez-Ortiz (eds), *Trading in Knowledge. Development Perspectives on TRIPS, Trade and Sustainability* (2003).

knowledge and management of such knowledge should also be considered in the Amazonian *sui generis* regime.<sup>48</sup> Databases are best employed as part of a framework designed to protect traditional knowledge property rights. For the purposes of the *sui generis* protection of traditional knowledge databases, the Amazonian Traditional Knowledge Council should be recognized as the maker of the traditional knowledge databases and consequently should have the right to control and manage such databases. In practice, the effective control and management of such databases will be exercised by the local, sub-national and national offices.

Databases may be implemented as a method of protecting traditional knowledge from unwanted property rights field by non-indigenous person and companies. This type of defensive protection makes possible for patent review because databases provide evidence of art.

Further, documenting and recording traditional knowledge may be used as a tool for evidence of the prior informed consent of traditional knowledge holders. So, it can be said that databases would be an effective mechanism to ensure compliance with Article 8(j) of the CBD and with the access and benefit-sharing principles of the CBD.

Although a comprehensive examination and discussion of the existence and use of potential mechanisms for defensive protection of traditional knowledge is beyond the scope of this thesis, it is acknowledged that various defensive protection strategies have been employed to prevent the acquisition of intellectual property rights over traditional knowledge by parties other than its holders. For example, a mechanism for documenting evidence of prior informed consent and tracing the use traditional knowledge, for example, used in patent or plant variety protection applications would be a feasible and practical measure to support compliance with national law, prior informed consent and mutually agreed terms, as well as it would enable and facilitate cooperation in monitoring and enforcement of access to benefit-sharing.<sup>49</sup>

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<sup>48</sup> World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, Inventory of Traditional Knowledge-Related Periodicals, 3rd sess, WIPO/GTRKF/IC/3/5, (2002). See also World Intellectual Property Organization and Intergovernmental Committee on Intellectual Property and Genetic Resources, *Inventory of Existing Online Databases Containing Traditional Knowledge Documentation Data*, WIPO has inventoried the existence of several journals and databases containing traditional knowledge data.

<sup>49</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, *Analysis of Gaps in Existing National, Regional and International Legal and Other Instruments Relating to Access and Benefit-Sharing*, 5th mtg [para 93], UNEP/CBD/WG-ABS/5/3 (2007).

Further, it would also significantly facilitate and support the implementation and compliance with a sui generis regime to protect traditional knowledge. Thus, this thesis submits that a key element for a defensive protection should include mechanisms to identify traditional knowledge, monitor its use and enforce rights and obligations to share benefits.<sup>50</sup>

In fact, a proposal in this form was presented, in 2002, to the TRIPS council by developing countries, mainly, Brazil, China, Cuba, the Dominican Republic, Ecuador, India, Pakistan, Peru, Thailand, Venezuela, Zambia and Zimbabwe.<sup>51</sup> These countries have proposed that the TRIPS Agreement should be amended to require, or to enable, TRIPS' members to require, that an applicant for a patent relating to biological resource or material, or to traditional knowledge, should provide, as a condition of acquiring patent rights, the following information: (i) the source and country of origin of the biological resource and of the traditional knowledge used in the invention; (ii) evidence of prior informed consent through approval of authorities under the relevant national regime; and (iii) evidence of fair and equitable benefit-sharing under the relevant national regime.<sup>52</sup> As part of this proposal, it was suggested that the establishment of a standardized international certificate of 'origin/source/legal provenance', as evidence of prior informed consent, would facilitate the implementation of disclosure requirements.<sup>53</sup>

It is out of the scope of this thesis to examine the scale and pace, at which different views and proposals about the acceptance and implementation of the disclosure of origin and

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<sup>50</sup> Brendan Tobin, 'Regulating Access and Benefit Sharing in the Andes: Exploring the Challenges of ABS Governance' (Paper presented at the Mountain Forum: A Global Network for Mountain Communities, Environment and Sustainable Development, 2006).

<sup>51</sup> At a later meeting of the TRIPs Council in June 2007, additional countries have added their support to this proposal, including Venezuela, members of the African Group and the members of the the of Least Developed Countries.

<sup>52</sup> Bolivia, Brazil, Cuba, Dominican Republic, Ecuador, India, Peru, Thailand and Venezuela, *The Relationship Between the TRIPS Agreement and the Convention on Biological Diversity and the Protection of Traditional Knowledge. Submission to Council for Trade-Related Aspects of Intellectual Property Rights*, meeting of 4-5 June 2003, [1], IP/C/W/403, (2003). Available at <[http://www.iprsonline.org/ictsd/docs/wto\\_IPCW403.pdf](http://www.iprsonline.org/ictsd/docs/wto_IPCW403.pdf)> at 25 January 2005.

<sup>53</sup> United Nations Environment Programme, Diversity and Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, *Report of the Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing on the Work of its Fourth Meeting*, This document is available at <<http://www.biodiv.org/doc/meetings/cop/cop-08/official/cop-08-06-en.doc>> at 13 April 2006. See also United Nations Environment Programme, Diversity and Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing, *International Regime on Access and Benefit-Sharing: Consolidated Text of the Comments and Proposals Contained in Submissions by Parties, Governments and Organizations Regarding the International Regime*, This document is available at <<http://www.biodiv.org/doc/meetings/abs/abswg-04/official/abswg-04-02-en.doc>> at 13 April 2006. More information about the certificate of origin/source/or legal provenance can be found at <<http://www.ias.unu.edu/research/certificatesoforigin.cfm>> at 13 April 2006. See also, Brendan Tobin, 'Certificates of Origin: A Role for IPR Regimes in Securing Prior Informed Consent' in John Mugabe et al (eds), *Access to Genetic Resources* (1997) 329, 40.

international certificate of origin system in the international are evolving.<sup>54</sup> However, it should be noted that discussions on the disclosure requirement in a number of international forums such as the CBD, WTO and WIPO have been inconclusive thus far.<sup>55</sup>

The capacity to enforce the obligation of prior informed consent may be directly related to the efficacy of the rights granted and the failure to comply would result in being barred from protection or a subsequent loss of rights.<sup>56</sup> Such a sanction is already in operation with regard to the patent protection in Decision 391 and the Brazilian Provisional Act No. 2,186-16.<sup>57</sup> Alternatively, an adequate sanction may be to declare that the rights over traditional knowledge-based process or product are unenforceable, until the claimant discloses the required information about the source of genetic resources and the holders of associated knowledge, and provides the evidence of the prior informed consent of the holders of traditional knowledge.<sup>58</sup> The underlying principle of this alternative proposal is that the major reason for requiring the disclosure of the source of traditional knowledge and prior informed

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<sup>54</sup> For a recent update on debates about the relationship between the CBD, WIPO and TRIPs Agreement, see Bridges Trade BioRes, available at <<http://www.ictsd.org/biores>> at 23 April 2006. A detailed summary of the various proposals is to be found in United Nations on Environment Programme, Convention on Biological Diversity and Conference of the Parties, *Interrelation of Access to Genetic Resources and Disclosure Requirements in Applications for Intellectual Property Rights: Report of the World Intellectual Property Organization (WIPO)*, Available online at <<http://www.biodiv.org/doc/meeting.aspx?mtg=COP-08&tab=1>> 21 April 2006. See also World Trade Organization, *Article 27.3b, Traditional Knowledge, Biodiversity (Secretariat Document Listing Relevant Submissions)*, (2004). See also Anil K. Gupta, *WIPO-UNEP Study on the Role of Intellectual Property Rights in the Sharing of Benefits Arising from the Use of Biological Resources and Traditional Knowledge* (2004) WIPO <[http://www.wipo.int/tk/en/publications/769e\\_unep\\_tk.pdf](http://www.wipo.int/tk/en/publications/769e_unep_tk.pdf)> at 4 April 2006. See also Institute of Advanced Studies (Unu-Ias) United Nations University, 'User Measures: Options for Developing Measures in User Countries to Implement the Access and Benefit-Sharing Provisions of the Convention on Biological Diversity. (UNU-IAS Report)' (2003) .

<sup>55</sup> *WTO - Ministerial Declaration of Doha*, opened for signature 14 November 2001, (entered into force 14 November 2001) <[http://www.wto.org/english/tratop\\_e/dda\\_e/dohaexplained\\_e.htm](http://www.wto.org/english/tratop_e/dda_e/dohaexplained_e.htm)> at 25 April 2006. The members of the WTO have agreed to consider the relationship between TRIPs Agreement and CBD, regarding the issue of the protection of traditional knowledge, as part of the trade and development agenda adopted at the ministerial session held in Doha in 2002. Doha Declaration should address a variety of issues concerning international trade and economic development, including the marginalization of developing countries. The relationship between the CBD and TRIP and the eventual tension that arise between these documents and the obligations they create in member countries has been exhaustively and comprehensively analysed and debated. Therefore, this thesis will neither repeat that analysis nor summarize the debates. Pertinent analyse can be found at Johanna Gibson, 'Traditional Knowledge and the International Context for Protection' (2004) 1(1) *SCRIPT* -ed 48-55.

<sup>56</sup> Graham Dutfield, 'Protecting Traditional Knowledge and Folklore: A Review of Progress in Diplomacy and Policy Formulation' (International Centre for Trade and Sustainable Development, 2002) 25. See also Nuno Pires De Carvalho, 'Requiring Disclosure of the Origin of Genetic Resources and Prior Informed Consent in Patent Applications without Infringing the TRIPS Agreement: The Problem and the Solution Patent Law and Policy Symposium: Re-Engineering Patent Law: The Challenge of New Technologies. Part II: Judicial Issues' (2000) 2 *Washington University Journal of Law and Policy* 371-94.

<sup>57</sup> *Decision 391*, above n 2. See also *Provisional Act No 2,186-16*, above n 29.

<sup>58</sup> Commission on Intellectual Property Rights, above n 43, 97. The declaration of unenforceability of intellectual property rights as a sanction has been considered in the United States under the doctrine of 'unclean hands' and inequitable conduct, where a court will refuse to enforce a patent until the patentee has cleaned his hand or remedied any inequitable conduct or fraud.

consent is to ensure compliance with both Article 8(j) of the CBD and the access and benefit-sharing principle of the CBD.

Another type of a defensive protection for traditional knowledge that is currently under discussion in both the WTO and at WIPO is the introduction of changes to the system both in terms of rules and practices, to ensure that prior art searches fully take into account existing primary traditional knowledge as part of the state of the art. These changes are important because, as it was shown in Chapter 5, the current concept of prior art within the patent system of some countries undermine indigenous peoples' rights over their traditional knowledge. Patents have been granted for inventions which did not meet fundamental requirements for patentability, when compared to traditional knowledge from which these inventions might have directly or indirectly been derived. Had the patent examiners, at the time of examining the patent applications, considered traditional knowledge as prior art, the claims that the invention was new and involved an inventive would be defeated.

In addition, it should be noted that according to 31.1 (b) of the PCT International Search Guidelines written disclosure is the essential condition for the material information to become significant prior art for the purpose of an international search.<sup>59</sup> Thus, it is recommended here that the Amazonian countries, which have not already done so, amend their national patent law to include provisions to establish that in determining the novelty requirement in the patent approval process all information which has been made available to the public anywhere in the world, in any form, encompassing written, oral or any other kind of form or media, should be taken into consideration in the definition of the state of the art. Further, these countries should provide for this condition to be compulsory for the international patent registration regime.

### Recommendations

#### ***15. Form of Protection***

For the purposes of accommodating the various objectives in protecting traditional knowledge, as well as discerning the range of elements of traditional knowledge for which protection could potentially apply, the Amazonian countries should create a *sui generis* regime. This regime should be designed to combine the features of the patent regime with

<sup>59</sup> PCT International Search Guidelines, [31.1(b)], (1998). See also Kembrew McLeod, *Owning Culture: Authorship, Ownership, and Intellectual Property Law*, Popular Culture & Everyday Life (2001) 176.



particular characteristics of trade, collective, and certification marks, geographical indications, designations of, and appellation of origin, copyright and plant breeder's right.

### ***16. Creation of a Sui generis Protection for Traditional Knowledge Databases***

The Amazonian *sui generis* regime should provide a right for the maker of a traditional knowledge database which demonstrates (qualitatively and/or quantitatively) substantial investment in either obtaining, verifying or presenting the contents, to prevent extraction and/or re-utilization of the whole or of a substantial part of the database contents.<sup>60</sup>

### ***17. Defensive Protection***

In applications for intellectual property rights, in particular within the patent regime, each of the Amazonian countries, which has not already done so, should amend its national patent laws to include provisions for the obligatory disclosure of the geographical source or country of origin of the genetic resource and of the associated traditional knowledge used, directly or indirectly, in the development of the product or process. This requirement should also extend to the obligatory provision of evidence of receipt of prior informed consent of the holders of traditional knowledge and associated genetic or biological resources, and evidence of a fair and equitable benefit-sharing agreement signed with such holders. Further, Amazonian countries should support the adoption of these requirements at the international patent registration regime.

### ***18. Review of the Concept of Prior Art***

Amazonian countries, which have not already done so, should amend their national patent law to include provisions establishing that in determining the novelty requirement in the patent approval process all information which has been made available to the public anywhere in the world, in any form, encompassing written, oral or any other kind of form or media, should be taken into consideration in the definition of the state of the art. Further, the Amazonian countries should also provide for this condition to be compulsory for the international patent registration regime.

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<sup>60</sup> This recommendation is based on the legal protection of databases granted by *Directive No. 96/9/EC* of the European Parliament and of the Council. For more information, see <http://europa.eu.int/ISPO/infosoc/legreg/docs/969ec.html> at 21 September 2006.

## **G      *Eligibility for Protection***

This thesis suggests that two pre-conditions should be established for the protection of traditional knowledge under the proposed regime. First, such knowledge should be associated with genetic resources and their derivatives such as bio-molecules, genes and extracts, and related biological resources. Second, such knowledge (collectively) shared or possessed by more than one Amazonian indigenous people. The Amazonian countries, with the involvement and effective participation of indigenous peoples, may consider the possibility of including other criteria to ascertain the eligibility for protection of traditional knowledge, such as traditional and intergenerational characteristics; evidence of actual or potential industrial application or usefulness or technical novelty, meaning that such knowledge has not been subject to any prior commercial exploitation.

### **Recommendation**

#### ***19. Eligibility for Protection***

Two main pre-conditions should be established for the protection of traditional knowledge under the Amazonian *sui generis* regime. Firstly, traditional knowledge should be distinctively associated with genetic resources and their derivatives such as bio-molecules, genes and extracts, and related biological resources. Secondly, traditional knowledge should be shared or possessed by more than one Amazonian indigenous people.

## **H      *Formalities for Protecting Traditional Knowledge and Recognition of Rights***

The absence of a formal system of registration and documentation of traditional knowledge, along with the lack of identification of its holders, creates burdens and uncertainty for potential users of traditional knowledge. Potential users do not know what is protected and/or the identity of the rights-holders nor do they know who has the power to authorize the access to the knowledge in question. As a result, the process for obtaining prior informed consent is more complex, difficult and expensive than it need be. In addition, a register documenting traditional knowledge will make it easier to monitor the access to traditional knowledge. The enforcement of rights in respect of a knowledge that has not been registered or documented

prior to an alleged misappropriation has been so far very difficult.<sup>61</sup> Therefore, it is recommended that the Amazonian *sui generis* regime should be a registration-based system in order to provide legal certainty and transparency in the process of protection and access to traditional knowledge. This would also facilitate the identification of the holders of traditional knowledge, along with recognition of its sources, and the enforcement of the holders' rights.

In the first two years of its operation the Amazonian *sui generis* regime should automatically recognize, protect and preserve traditional knowledge. That is, traditional knowledge will be recognized, protected and preserved without any formality. After that, the identification of traditional knowledge, including a brief description of its nature and content and its registration should be mandatory to protect and preserve traditional knowledge and to recognize and protect the rights of the holders. No time-frame should be delineated for the registration of traditional knowledge. That is, indigenous peoples should have the right to register their knowledge at any time. They should be able to register traditional knowledge at local, sub-national or national sections of the Amazonian Traditional Knowledge Council, without any cost.

A transitional phase, where the recognition, protection and preservation of traditional knowledge and the rights of its holders are automatically implemented, has been suggested with the objective of allocating adequate time for Amazonian countries create the operational mechanisms for the practical implementation and enforcement of the rights granted under the regional *sui generis* regime. Further, during this transitional period, the Amazonian countries should implement educational and awareness programs throughout the Amazon region to inform and instruct all indigenous peoples about the availability, scope and the conditions for protection and enforcement of rights over traditional knowledge. In this way, indigenous peoples will become aware of the need and importance of the documentation and registration of their knowledge. These activities should be made available to indigenous peoples in their languages.

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<sup>61</sup> Daniel Gervais, 'Traditional Knowledge & Intellectual Property: A TRIPS-Compatible Approach' (2005) Spring *Michigan State Law Review* 137-64.

### Recommendation

#### ***20. Formalities for Protecting Traditional Knowledge and Recognition of Rights***

The Amazonian *sui generis* regime should be a registration-based system. Accordingly, the registration of traditional knowledge should be a mandatory requirement for the protection and preservation of the knowledge, and for the recognition and continuance of the rights of the holders.

### I      ***Identification of the Beneficiaries of Protection***

The identification of the holders of traditional knowledge is a pre-condition for developing a regime aimed at protecting such knowledge. This is because special rights will be recognized and/or granted to them based on their distinctive identities. The identification of indigenous peoples and their collective identities is a necessary prerequisite for the legitimacy of any right claims.

This thesis has shown that the existing criteria for classifying and identifying indigenous peoples has not, in general, effectively assessed the ethnic and the cultural diversity of Amazonian indigenous peoples or, indeed, to quantify their population. Further, it has also been demonstrated that there is ambiguity regarding membership in, and boundaries between, indigenous peoples.<sup>62</sup> It has also been argued that the actual absence of efficient criteria for classifying and identifying indigenous peoples and the concomitant lack of clear specification of membership in, and boundaries between, indigenous peoples can make it difficult - if not impossible - to identify the source and holders of traditional knowledge.

As a result, it has been argued that Amazonian countries should improve their performance in respect of comparability, reliability and availability of data about indigenous peoples. They should also create a mechanism - adopting reliable and uniform indicators and methods for culturally specific data collection methodology - for collecting data about the population of Amazonian indigenous people. This mechanism should not only assess which individuals are indigenous, but also which group can be considered to be a distinct people. It should also be

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<sup>62</sup> See Chapter 2 [III] of this thesis for more information about the issue of identification of an indigenous people and indigenous peoples' collective identity.

able to delineate the geographic boundaries of different indigenous peoples and their collective identities.

### **1     *Creation of a System to Survey and Register Indigenous Lands and the Holders of Traditional Knowledge***

Amazonian countries should survey customary land tenure regimes and elicit information about the location and boundaries of lands that belong to each group. They should also gather information on the livelihood strategies and use of plants, animals, soils, water systems and so on. Further, Amazonian countries should consolidate this information on local, national and regional registers.

The survey and register should also identify key clans, families, groups or peoples who have authority over traditional knowledge and their relevant representatives' contact details. These registers should be considered part of the Indigenous Regional Protocol and the legislative system for ascertaining the identity of traditional knowledge holders.

Indigenous peoples should themselves consent to and define the listings and groupings of indigenous lands and the holders of traditional knowledge in such registers. To give two examples: firstly, indigenous peoples could be grouped by the consideration of the ecosystems in which they live; within the Amazon rainforest (the six major subdivisions are: humid forest, seasonal forest, mountain forest, dry savanna, wet savanna and floodplain);<sup>63</sup> secondly, as landforms and watercourses influence floral and faunal distribution,<sup>64</sup> it is also possible to group indigenous peoples on the basis of the identified components of biological diversity within their lands to which they may have access.<sup>65</sup>

Indigenous peoples, throughout the Regional Protocol, should have the right to define who should be considered an indigenous person for the purposes of recognition of rights over traditional knowledge. This thesis recommends that a working definition of indigenous peoples should not only consider the criteria based on Indian ancestry, but also the

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<sup>63</sup> Kristina Plenderleith (ed.), *Indigenous Knowledge and Ethics. A Darrel Posey Reader* (2004) 89.

<sup>64</sup> Ibid 90.

<sup>65</sup> These surveys and registers should provide indigenous peoples with a mechanism for protecting their lands from invasions by ranchers, landless people or miners, and to control illegal activities such as gold mining and logging. Further, as was previously mentioned in this thesis, in many cases indigenous peoples' lands overlap with protected areas and forestry concessions; thus the survey and registers can provide them with a mechanism for claiming the recognition of their rights to participate in the development of policies for nature conservation, including an intercultural management approach.

maintenance of cultural and social identities. Further, special attention should be given to the maintenance of traditional lifestyle. The issue of the identification of the holders of traditional knowledge is closely linked to the meaning of the term ‘traditional lifestyle’, particularly from the perspective of implementing the objectives of the Convention on Biological Diversity (CBD).<sup>66</sup>

This thesis argues that there are three ways in which the maintenance of traditional lifestyle may be approached. The first, an extensive approach would include all indigenous peoples as holders of traditional knowledge, regardless of whether they still embody a traditional lifestyle or are living on their traditional land. The second, a narrow approach would only consider those indigenous peoples who maintain a traditional lifestyle on their traditional land to be recognized as the holders of traditional knowledge and capable of exerting recognized rights over that knowledge. The third, an even more stringent approach would only consider those indigenous peoples who have maintained an ongoing link to the land through traditional cultural and linguistic practices and more importantly still have access to, and use of, particular genetic resources to be the holders of the knowledge associated with such genetic resources. This thesis does not intend to suggest that those indigenous peoples who do not maintain their traditional lifestyle become less indigenous. However, because of the evolving nature and the collective character of traditional knowledge and the fact that human and cultural diversity is closely connected with biological diversity, the adoption of the third approach would provide a fair and equitable sharing of the benefits among the true holders of the traditional knowledge.

To facilitate efficacy, the data collection and analysis should be carried out by or in collaboration with indigenous peoples.<sup>67</sup> Such a mechanism should be developed through cooperative processes among national, regional and international data-collecting bodies, as well as through consultation with indigenous peoples. In addition, an agreement between Amazonian countries and indigenous peoples should decide questions relating to use of the data and the conditions on which the data will be provided to others.

### Recommendations

<sup>66</sup> CBD, above n 39, Art. 8 (j).

<sup>67</sup> The official data should also provide an essential and indispensable basis for policy formulation, concerning indigenous peoples' development and rights, such as control over land and resources, equal participation in decision-making, and control over their own development processes.

### **21. Beneficiaries of Protection**

Indigenous peoples who have participated and still participate in the process of development, preservation, conservation and innovation of traditional knowledge should be recognized as the beneficiaries of protection. It is also recommended that the rights over traditional knowledge should be vested in all indigenous peoples, not merely in an individual person, community or people.

### **22. Establishment of a Framework for Identification of the Holders of Traditional Knowledge and Definition of the Terms ‘Indigenous Peoples’ and ‘Traditional Lifestyles’**

The Amazonian countries, in conjunction with the indigenous peoples, should establish a set of unified and reliable indicators and criteria to enable them to define and/or identify:

- (i) who should be considered to be an indigenous person and indigenous peoples;
- (ii) indigenous peoples’ collective identity and the customary boundaries between different indigenous peoples; and
- (iii) the term ‘embodying traditional lifestyles relevant for the conservation and sustainable use of biological resources’.

## **J Rights over Traditional Knowledge**

The nature of the rights over traditional knowledge, in particular the right to share the benefits, may vary depending on the category of the knowledge and how traditional knowledge is used.<sup>68</sup> Therefore, the Amazonian *sui generis* regime should be sufficiently flexible to provide a range of rights and remedies for different scenarios. These should take into account the multifarious ways in which traditional knowledge contributes to the development of products and processes. The value added by the contribution of traditional knowledge to the final product or process should also be taken into account.

Some of the rights conferred under the regional *sui generis* should be similar to intellectual property rights that have been granted to the owner of a product or process traditional knowledge-based. Thus, when clarifying the rights of indigenous peoples over their traditional knowledge, the regional *sui generis* regime should be consistent with the corresponding rights

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<sup>68</sup> Graham Dutfield, *Intellectual Property Rights, Trade and Biodiversity. Seeds and Plant Varieties* (2000) 50.

that are (actually or potentially) provided - by the existing intellectual property regime - to the user of such knowledge over an invention derived from traditional knowledge. That is, if traditional knowledge forms part of the development of, or constitutes an essential part of the conception of, an invention which is subject of patent protection, then indigenous peoples' rights should be similar to those granted under this regime. If the nature of the work or goods developed or derived from traditional knowledge falls under the copyright regime, then indigenous peoples' rights should be similar to the rights granted currently by this legal framework. In cases where there is an indication or suggestion that the product was created with the involvement of indigenous inputs, or was developed or derived from traditional knowledge, then indigenous rights should be similar to the rights granted on the basis of the geographical indications and/or designations of origin. In cases involving the protection of distinctive signs related to certain knowledge or traditional resources of indigenous peoples, then indigenous rights should be similar to those granted currently under trade, collective, and certification marks and under geographical indications, designations of, and appellation of origin.

### **1    *Types of Rights***

Regardless of the type of traditional knowledge or method of its usage, the Amazonian *sui generis* regime should recognize and/or grant to the holders of traditional knowledge the rights to:

- (i)    inalienable rights held in perpetuity as long as the knowledge exists;
- (ii)   to pass on information as well as the rights associated with the knowledge to future generations;
- (iii)   use, dispose of, offer to dispose of, or keep their traditional knowledge;
- (iv)   be acknowledged as the holders of the traditional knowledge and to require the disclosure of the source of the traditional knowledge in all publications and dissemination, uses and exploitation;
- (v)    decide on the use of traditional knowledge by third parties, including the right to refuse access to traditional knowledge to such third parties, through their prior informed consent (in writing) to allow access to, use of and application of traditional knowledge;
- (vi)   decide on the access to traditional knowledge which is incorporated into a database;
- (vii)   agree to terms and conditions for the access to, and use of their knowledge, and to license its use for commercial and industrial application;



- (viii) object to false attribution or derogatory treatment in respect of traditional knowledge;
- (ix) prevent unauthorized third parties from using, directly or indirectly, by reproducing, imitating, carrying out tests, research or investigations or experimenting, disclosing or broadcasting, their traditional knowledge; and
- (x) take legal action, in regard to which the right to have legal standing is essential.

As observed earlier, other aspects such as the type of knowledge and its particular usage, along with the type of protection given to an invention derived from traditional knowledge will directly affect the nature of the rights that should be granted to the holders of this knowledge. Accordingly, the Amazonian *sui generis* regime should establish that indigenous peoples' rights will vary accordingly to the type of or the way traditional knowledge is used. The following rights should be recognized as available to indigenous peoples:

- (i) to claim co-ownership, as appropriate, of patents on traditional knowledge-based products or processes; as well as of any other form of legal protection;
- (ii) to prevent the granting of any form of legal protection over products or processes based on traditional knowledge which was accessed and used without the prior informed consent of the holders of the knowledge;
- (iii) to nullify any form of legal protection granted over products or processes derived from traditional knowledge which was accessed and used without the prior informed consent of the holders of the knowledge;
- (iv) to share the benefits arising out of the commercial or industrial exploitation of any traditional knowledge-based product or process;
- (v) to prevent acts to make, use, offer for sale, sell, or import products or processes, directly or indirectly, developed by the use of traditional knowledge which was accessed and used without the prior informed consent of the holders of the knowledge and/or without just and equitable compensation being provided to them;
- (vi) to prevent acts that make, use, offer for sale, sell, or import product or process, directly or indirectly, developed by the use of traditional knowledge in cases that indicate or suggest false or misleading representations or attributions that a product or process was produced with the involvement or endorsement of indigenous peoples or by using traditional knowledge or by the representation that commercial exploitation of such products will benefit indigenous peoples;
- (vii) to prevent the use of any means in the designation or presentation of a product in a manner by which the public is misled in the indication or suggestion that a product or

process was produced with the involvement or endorsement of indigenous peoples, or by using traditional knowledge, or that the commercial exploitation of such products will benefit indigenous peoples;

- (viii) to license the use of contents of traditional knowledge databases with a commercial and/or industrial propose;
- (ix) to prevent the unauthorized extraction and/or reutilization of traditional knowledge which is incorporated into a database;
- (x) to discontinue any form of appropriation or utilization of traditional knowledge for commercial or industrial use, where there is no sharing of benefits of the profits with the holders of the knowledge;
- (xi) to prevent others from producing or reproducing, conditioning for the purpose of propagation, offering for sale, selling or other marketing, importing, exporting, or stocking the claimed invention or a component of invention bearing or embodying traditional knowledge and/or traditional varieties or landraces accessed without the prior informed consent of the holders of the knowledge and/or just and equitable compensation to them; and
- (xii) to be entitled to a cross-licence on reasonable terms so as to use the traditional knowledge-based invention.

The Amazonian *sui generis* regime should safeguard the free and equitable exchange of traditional knowledge between individuals, families and neighboring communities.

### **Recommendations**

#### ***23. Creation of a Bundle of Rights***

The rights of indigenous peoples over their traditional knowledge should be consistent with and follow the currently existing rights that are, actually or potentially, provided to the user of such knowledge. The Amazonian *sui generis* regime should establish and guarantee to indigenous peoples a set of rights assembled from a combined bundle of rights from patent regimes, as well as trade, collective, and certification marks, geographical indications, designations of, and appellation of origin, copyright and related rights and trade secret.

#### ***24. Duration of Rights***

The protection should be granted as long as access to and use of the knowledge beyond the traditional context remains a subject of interest, provided it would apply exclusively to those elements of traditional knowledge with a commercial/industrial application. The protection should not have a retroactive effect.

## **K      *Nature and the Distribution of the Benefits***

### **1      *Nature of Benefits***

The CBD encourages the equitable sharing of the benefits derived from traditional knowledge. However, the CBD makes no explicit reference to the criteria for a fair and equitable distribution. The issues of fairness regarding the distribution of benefit should be considered from viewpoints. Firstly, it refers to the indigenous peoples' right to a fair and equitable share of the benefits that individuals and/or corporations derive from the exploitation of traditional knowledge-based products or processes. Secondly, it raises the issue of determining a method to equitably distribute such benefits among indigenous peoples who are the holders of the knowledge.

It should be noted that insufficient knowledge of biological diversity and also limited information regarding the value of genetic resources and of traditional knowledge associated may be an obstacle in the negotiation of fair and equitable benefit-sharing arrangements.

To determine what constitutes equitable benefit-sharing, it is necessary to evaluate the contribution of traditional knowledge to a product or process. In other words, an important issue when considering the benefit-sharing arrangements is the economic value of the traditional knowledge at issue. It should be noted that the economic value of traditional knowledge can vary significantly depending on the needs of particular industries.<sup>69</sup>

Therefore, a regulatory framework for protecting traditional knowledge should be sufficiently flexible to include measures applicable to a range of different circumstances with regard to use of the traditional knowledge. In this respect, the Amazonian *sui generis* regime should provide procedural guidance on how the mechanism for the determination of the amount of compensation the holders should have in the circumstances of each case, taking into account

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<sup>69</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(J) and Related Provisions, *Development of Elements of Sui Generis Systems for the Protection of Traditional Knowledge, Innovations and Practices to Identify Prior Elements*, 5th mtg [para 55], UNEP/CBD/WG8J/5/6 (2007).

the economic value of the traditional knowledge contribution. This should occur where traditional knowledge:

- (i) formed part of the development of the invention;
- (ii) was used during the process of developing a invention and constituted an essential part of the conception of the invention (or it can be considered an inventive contribution), to the extent that the traditional knowledge holder is a potential co-inventor (as was found in the Ayahuasca,<sup>70</sup> Cunani, and Tipir cases);<sup>71</sup>
- (iii) was used during the process of developing a invention, but was only incidental to the attainment of the invention;
- (iv) is considered to have been a necessary prerequisite for the development of the invention;
- (v) is considered to have been an mechanism to facilitate the development of the invention;
- (vi) was the source of background material and information necessary for the development of the invention (as it was in the Neem case)<sup>72</sup>; and
- (vii) is used as one example in the description of the invention, but was not indispensable to arriving at (or replicating) the invention as claimed.<sup>73</sup>

The ascertainment of the benefits which will be distributed to the holders of traditional knowledge will depend on the specific circumstances in which the knowledge was used (thus the calculation of shared benefits is not suggested in this thesis). Thus the equitable benefit-sharing should be addresses on a case-by-case. The Amazonian *sui generis* regime should for both monetary benefits derived from the commercial utilization of the product or process

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<sup>70</sup> Leanne M. Fecteau, 'The Ayahuasca Patent Revocation: Raising Questions about Current U.S. Policy' (2001) 21(1) *Boston College Third World Law Journal* 69-104. Fecteau mentions that the unique difference between the variety of ayahuasca over which Loren Miller, an American scientist, claimed a patent and the variety of ayahuasca used by indigenous peoples from the Amazon is the colour of its flower petals.

<sup>71</sup> Luiza Villamea with the Collaboration of João Fábio Caminoto and David Hathaway (English Translation), *Indians Want Patent: Chiefs Prepare International Law Suit Against Scientist Who Registered Indigenous Knowledge* (2000) *ISTO É Magazine* and *Genet News* <<http://www.gene.ch/genet/2000/Jan/msg00069.html>> at 23 September 2005.

<sup>72</sup> Graham Dutfield, *Indigenous Peoples, Bioprospecting and the TRIPs Agreement: Threats and Opportunities* (2001) *ACTS* <<http://www.acts.or.ke/pages/publications/dutfield.doc>> at 21 September 2005. While commenting on the Neem case, Dutfield noted that 'the neem-related inventions embody uses identical to those of Indian farmers but the products and/or methods of extraction are different. In such cases it can safely be assumed that the existence of relevant knowledge was a (but not the) sine qua non for the inventions.'

<sup>73</sup> United Nations on Environment Programme, *Convention on Biological Diversity and Conference of the Parties, Interrelation of Access to Genetic Resources and Disclosure Requirements in Applications for Intellectual Property Rights: Report of the World Intellectual Property Organization* (WIPO), 8th mtg, [Para. 34 and 62], UNEP/CBD/COP/8/INF/7, (2006).

traditional knowledge-based, and for non-monetary benefits, such as capacity-building, access and transfer of technology. Appendix II of the Bonn Guidelines provides an illustrative list.<sup>74</sup> Thus, the Guidelines should be taken into account by the Amazonian countries in the development of the regional *sui generis* systems.

## **2    *Distribution of Benefits Among the Holders***

The Indigenous Regional Protocol should provide guidance for the quantification of and equitable allocation of benefits. This thesis suggests that the effective definition of what constitutes a fair and equitable benefit-sharing between indigenous peoples and the users of their knowledge should be assessed on a case-by-case basis by the national and regional offices of the Amazonian Traditional Knowledge Council, in accordance with the Indigenous Regional Protocol.

It is recommended that at least 20 per cent of the monetary benefit should be directed to an indigenous trust fund to be administrated by the Amazonian Traditional Knowledge Council on behalf of indigenous peoples. The remaining 80 per cent should be apportioned exclusively to the holders of the knowledge and should be divided equally between them. This may be equally distributed within and among the holders, regardless of any other consideration or, alternatively, it may be proportionally distributed, taking into account some agreed parameters. A multistakeholder committee may be useful to determine the purposes to which funds might be allocated that are of general social and economic benefit, including, for example conservation programmes, sustainable development strategies, building health clinics or schools, or covering the legal costs required to pursue rights over traditional knowledge.

### **Recommendations**

#### ***25. Nature of Benefits***

The Indigenous Regional Protocol should identify a set of priorities tailored to suit the nature of the benefits that indigenous peoples would wish to receive, while taking into account the

<sup>74</sup> United Nations on Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Decision VI/24: Access and Benefit-sharing as Related to Genetic Resources. Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of their Utilization*, 6th mtg, [Appendix II ], (2002).

needs and interests of all Amazonian indigenous peoples, rather than the needs and interests of only a particular indigenous group.

### ***26. Distribution of Benefits***

The Indigenous Regional Protocol should direct the identification and allocation of benefits among the indigenous holders of the knowledge accessed. The internal distribution of the benefits should be decided by indigenous peoples themselves.

## **IV SPECIFIC RECOMMENDATIONS FOR IMPLEMENTING AND MONITORING THE AMAZONIAN *SUI GENERIS* REGIME**

### **A *Scheme to Control Access to Traditional Knowledge***

The fundamental rules governing access to traditional knowledge include securing the prior informed consent and formalizing mutually agreed terms, including benefit-sharing arrangements. However, this thesis recommends that the Amazonian *sui generis* regime should establish different rules to regulate access to traditional knowledge where it is associated with genetic and biological resources relevant to food and agriculture, to pharmaceutical and botanical medicines, and other purposes.

#### **1 *Justification for the Adoption of Differing Rules for the Regulation of Access to Traditional Knowledge***

One of the ideas underlying this recommendation is that the relevance of traditional knowledge may differ between botanical medicines, natural health care and pharmaceutical products, as well as for food and agricultural purposes. The pharmaceutical and botanical sectors represent the major users of traditional knowledge and consequently provide the major cases where issues relating to the sharing of benefits with indigenous peoples arise.

##### ***(a) Relevance of Traditional Knowledge for Pharmaceutical Companies***

In the formal pharmaceutical sector, traditional knowledge is often used to orient research programs.<sup>75</sup> Unlike genetic and/or biological resources for food and agriculture, plant genetic

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<sup>75</sup> Fourmile, above n 20. Fourmile provides a description of the drug development system which was elaborated by Dr David Newman of the United States National Cancer Institute. Dr Newman argued that, in general, the system used falls into the following pattern: (i) discovery of a lead structure (from nature or chemical synthesis or a combination of both). Takes up to three years and requires collaboration between biologists and chemists.

resources which contain useful medicinal properties, generally are still undiscovered.<sup>76</sup> Therefore, pharmaceutical companies are more likely to search for new substances with which to create new products, rather than access germplasm storage in gene banks.<sup>77</sup> Generally, bioprospecting is focused on special geographical areas, particularly in tropical rainforests on land belonging to indigenous communities and on coral reefs.<sup>78</sup> Leads provided by indigenous peoples to therapeutic properties of plants that they are familiar with help to reduce the number of species of plants required for drug development.<sup>79</sup> In most cases, pharmaceutical companies are searching for genetic resources that can be readily synthesized. Once this aim

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May require the screening of over 50,000 chemicals/extracts/ fermentation broths; (ii) proof that the lead from a specific agent only affects the disease that you want to work on and provision of adequate supplies for further work. Identification of actual lead and optimization of similar structures can take two or more years. A patent is usually applied for at this stage; (iii) toxicology and pharmacology in animals of the lead structure and usually some back-up compound. At least three years, as a two-year toxicology study in two animal species is required by the US FDA (and similarly in some other countries) for any compound that is not an anti-cancer or anti AIDS candidate, and (iv) clinical trials. At least three phases (safety; efficacy and superiority to existing treatments); this can take years and many trials at all levels to find a new drug. The overall odds of any one extract or compound becoming a drug 10-15 years later can only be calculated after the drug is commercialized, but are well in excess of 1:10,000 for any one screen. See also Paolo Bifani, *CARICOM Interests in Relation to Biodiversity and Intellectual Property Rights in the Context of FTAA Negotiations* (2001) IRPonline <<http://www.cnm.org/documents/studies/Bifani%20Study.pdf>> at 5 July 2006.

<sup>76</sup> Michael Hassemer, 'Genetic Resources' in Silke von Lewinski (ed.), *Indigenous Heritage and Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore* (2004) 151, 156.

<sup>77</sup> Tilford, 'Saving the Blueprints: The International Legal Regime for Plant Resources' David S. Tilford, 'Saving the Blueprints: The International Legal Regime for Plant Resources' (1998) 30 *Case Western Reserve Journal of International Law* 373-28.

<sup>78</sup> Margery L. Oldfield, *The Value of Conserving Genetic Resources* (2 ed, 1989) 132.

<sup>79</sup> Sampath, *Biodiversity Prospecting Contracts for Pharmaceutical Research. Institutional and Organizational Issues in Access and Benefit-Sharing*, above n 41, 45. See also Timothy Swanson, 'The Reliance of Northern Economies on Southern Biodiversity: Biodiversity as Information' (1996) 17(1) *Ecological Economics* 1-4. Swanson notes that, in general, pharmaceutical products are derived from or are modelled on a single natural compound. Therefore, pharmaceutical and chemical researches often screen diverse plants and/or other life forms in order to detect biological activity, and then to find the chemical compounds. The research often requires only a one-off collection of a small amount of a particular biological resource.

is realized, genetic resources and the associated knowledge are no longer important.<sup>80</sup> In other cases, such companies are searching for resources that can be cultivated easily.<sup>81</sup>

Botanical medicines are mostly derived from or based on traditional knowledge. In many cases, the entire product may be based on the traditional use itself.<sup>82</sup> Further, practices and usages of traditional knowledge are widely used to determine safety and efficacy and to develop preparations in the case of cultivated plants.<sup>83</sup> Sampath and Tarasofsky maintain that botanical medicine can be considered as ‘factory-based traditional medicinal preparations’ or ‘laboratory preparation of simple remedies – used in traditional medicine.’<sup>84</sup>

#### (a) *Relevance of Traditional Knowledge for Herbal Industries*

The botanical medicines and herbal industries are more dependent on traditional knowledge than the formal pharmaceutical sector, not only because they use traditional knowledge to identify and prepare herbal medicines, but also because they often attempt to present their companies with a biodiversity-friendly image. In many cases, botanical/herbal industries do their utmost to link their products to the culture and knowledge of the indigenous peoples; playing up their links to the terms or images of ‘shamans’, ‘healers’, ‘ancient wisdom’, and ‘rainforest cures’.<sup>85</sup> Further, unlike the pharmaceutical industry, the botanical industry does

<sup>80</sup> Gordon M. Cragg, David J. Newman and Kenneth M. Snader, ‘Natural Products in Drug Discovery and Development’ (1997) 60(1) *Journal of Natural Products* 52-52. According to Cragg [et al.] the source of a medicinal drug can be classified as: (i) biological (for example, vaccines, monoclonal, etc derived from mammalian sources); (ii) derived from an unmodified natural product source; (iii) derived from a natural product source (for example, semi-synthetics); (iv) exclusively from a synthetic source, and (iv) from a synthetic source, but originally modelled on a natural product parent. Further, they note that 61% of the 877 small-molecule new chemical entities introduced as drugs worldwide during 1981-2002 were derived or modelled on natural products. These include natural products (6%), natural product derivatives (27%), synthetic compounds with natural-product-derived pharmacophores (5%), and synthetic compounds designed on the basis of knowledge gained from a natural product (that is, a natural product mimic; 23%). Drugs of natural origin, which are those drugs derived from an unmodified natural product source or derived from a natural product source or semi-synthetic, predominate (around 78 per cent) in the area of antibacterials, while 61% per cent of the 31 anticancer drugs are naturally-derived or are modelled on a natural product parent. On the other hand, analgesic, antidepressant, antihistamine, anxiolytic, cardiotonic, hypnotic and the antifungal agents are exclusively synthetic in origin.

<sup>81</sup> Kent Nnadozie, Robert Lettington, Carl Bruch, Susan Bass and Sarah King (eds), *African Perspectives on Genetic Resources: A Handbook on Laws, Policies, and Institutions* (2003) 18.

<sup>82</sup> Sampath, *Biodiversity Prospecting Contracts for Pharmaceutical Research. Institutional and Organizational Issues in Access and Benefit-Sharing*, above n 41, 51.

<sup>83</sup> Bifani, above n 75. See also K. Ten Kate and Sarah Laird, *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit Sharing* (1999) 92.

<sup>84</sup> Padmashree Gehl Sampath and Richard G. Tarasofsky, ‘Study on the Inter-Relations between Intellectual Property Rights Regimes and the Conservation of Genetic Resources. Contract No B7-8110/2001/326404/MAR/E3’ (European Commission Directorate-General, Environment, 2002) 38.

<sup>85</sup> Gaia/Grain, *Biodiversity for Sale: Dismantling the Hype about Benefit Sharing* (2000) GRAIN <<http://www.grain.org/briefings/?id=134>> at 17 July 2006.



not operate on the basis of single isolated compounds. Rather, botanical medicinal products tend to contain a relatively large number of components and extracts or concentrates of active ingredients from herbs dried or fresh, roots, leaves, fruits, seeds, flowers, bulbs or rhizomes.<sup>86</sup> Moreover, unlike the pharmaceutical industry that mainly uses the genetic information contained in biological resources, in botanical or herbal medicine the resource and final product are based on biological material and on its traditional usage.<sup>87</sup> In some cases, however, bio-chemicals may be extracted and research on genetic properties may be undertaken simultaneously.<sup>88</sup> As with biological and genetic resources for food and agriculture purposes, it is very difficult to trace the accessed material and information back. In some cases, the useful information may be obtained through various means such as from journals and other publications, and certain biological and genetic resources are often shared among indigenous peoples within a country and across national borders. Similarly, cosmetic and natural personal care industries often draw on the traditional use of species and traditional knowledge.

**(b) *Relevance of Traditional Knowledge for Food and Agricultural Companies***

It is worth remembering no country is self-sufficient in terms of biological and genetic resources for food and agriculture.<sup>89</sup> As a result, in the field of food and agriculture there is also a long history of biological material exchange.<sup>90</sup> A new plant variety is often the product of generations of breeding and cross-breeding between the native parent varieties and the new variety, until the new variety retains the desired traits and all the undesired ones are eliminated.<sup>91</sup> The breeding process includes a very large number of parent varieties which in turn are the result of selection and breeding by farmers, over perhaps decades of development.<sup>92</sup> Further, the development of a new variety depends on a wide range of traits

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<sup>86</sup> Bifani, above n 75.

<sup>87</sup> Sampath and Tarasofsky, 'Study on the Inter-Relations between Intellectual Property Rights Regimes and the Conservation of Genetic Resources', above n 84, 39.

<sup>88</sup> Gudrun Henne, Klaus Liebig, Andreas Drews and Plan, *Access and Benefit-Sharing (ABS): An Instrument for Poverty Alleviation - Proposal for an International ABS Regime*

<sup>89</sup> See Chapter 3 [III.A] for more information about the interdependence of countries' in terms of genetic resources for food and agriculture.

<sup>90</sup> Stephen B. Brush, 'Farmers' Rights and Protection of Traditional Agricultural Knowledge. CAPRI Working Paper No 36' (International Food Policy Research Institute, 2005) 3.

<sup>91</sup> Graham Dutfield, 'Biodiversity in Industrial Research and Development' (2000) 2(1-3) *International Journal of Biotechnology* 103-06. See also Graham Dutfield, *Intellectual Property Rights and the Life Science Industries. A Twentieth Century History* (2003) 145. See also Hassemer, above n 76, 156.

<sup>92</sup> Walter Smolders, 'Commercial Practice in the Use of Plant Genetic Resources for Food and Agriculture. Background Study Paper No. 27' (2). An example of how complex the parentage of a released variety may be is

that are controlled, on the whole, by multiple genes.<sup>93</sup> A new variety may then have descended from many varieties or by the collective management and selection made by numerous farmers from various locations.<sup>94</sup> It is, therefore, often very difficult to trace a new variety back to a specific set of parent varieties and the original providers.

Besides this, a large portion of the known and agriculturally-used cultivated crops, including wild crop progenitors, semi-domesticated crop relatives and landraces, are stored in ex situ gene banks;<sup>95</sup> and unlike the pharmaceutical and botanical medicine industries, food and agricultural companies may have far less interest in bioprospecting.<sup>96</sup> Dutfield argues that there are some advantages for plant breeders in acquiring genetic material from ex situ collections, such as those of the International Agricultural Research Centers (IARCs) of the Consultative Group on International Agricultural Research (CGIAR). These are: firstly, the access to genetic material stored is free and, secondly, in many cases, basic information on the characteristics of the material stored may also be available.<sup>97</sup> Furthermore, the food industry may require a regular supply of a particular plant as a special food ingredient which may give rise for the need to commercially produce that species.<sup>98</sup> Further, according to Ten Kate and Laird, in the horticultural sector, there is little or no scope to use traditional knowledge.<sup>99</sup>

The situation of the crop protection industries (pesticides, insecticides, herbicides, fungicides etc) differs from the agricultural industry. In most cases, the production of a new crop protectant is made via chemical synthesis. The implication is that once the chemical structure of the active substance is isolated from biological or genetic resources (which provide the lead

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the wheat variety in India called Sonalika. Expanded to five generations, the variety has 31 parental varieties in its ancestry and is the result of complex combinations, crosses, back-crosses, etc.

<sup>93</sup> Nnadozie, Lettington, Bruch, Bass and King, above n 81, 23. See also Dutfield, 'Biodiversity in Industrial Research and Development', above n 91, 108.

<sup>94</sup> Brush, 'Farmers' Rights and Protection of Traditional Agricultural Knowledge. CAPRI Working Paper No 36', above n 90.

<sup>95</sup> Hassemer, above n 76, 159.

<sup>96</sup> Swanson, 'The Reliance of Northern Economies on Southern Biodiversity: Biodiversity as Information', above n 67. Swanson mentions that a survey revealed that, respectively, only 1.4 and 1.0 per cent of germplasm used in the development of new varieties comes from landraces and wild species both maintained in in situ conditions; while 81.5 per cent comes from commercial cultivars.

<sup>97</sup> Dutfield, 'Biodiversity in Industrial Research and Development', above n 91, 108.

<sup>98</sup> United Nations Environment Programme, Convention on Biological Diversity and Ad Hoc Open-Ended Intersessional Working Group on Article 8(j) and Related Provisions, *Development of Elements of a Sui Generis System for the Protection of Traditional Knowledge, Innovations and Practices*, 3rd mtg, [VII, Para. 60], UNEP/CBD/WG8J/3/7, (2003).

<sup>99</sup> Ten Kate and Laird, above n 83, 79.

for the further development of the product) and a synthetic replica has been made, the genetic material and associated traditional knowledge is no longer important.<sup>100</sup>

Another reason for recommending the adoption of differing rules for access based on potential use of the knowledge is that the bargaining opportunities for indigenous peoples and the potential for monetary returns are, to some extent, more promising in the context of traditional knowledge useful to pharmaceutical and botanical industries than from knowledge relevant to food production, at least in two senses. Firstly, where there is a clearly defined geographical area, the location of the origin or provider of the genetic resource should facilitate the identification of the source of associated traditional knowledge. Where the resource itself has generated a new pharmaceutical or botanical products or processes, locating the associated knowledge should simplify the consequent recognition of the rights of the traditional knowledge holders and encourage immediate benefit-sharing. The same, however, cannot be said about the use of traditional knowledge or landraces or traditional cultivars in developing, maintaining or improving varieties for crop-based agriculture. This is because as explained above, it may be difficult (even though it might be theoretically possible) to establish or trace the origin of plant genetic resources to the original site/population/landrace from which they have originated,<sup>101</sup> given the circulation of crop genetic resources among individuals and communities, both within and outside their places of origin,<sup>102</sup> together with the difficulty in assessing the individual contributions of varieties or landraces used. Secondly, in the case of pharmaceutical and botanical genetic resources and associated traditional knowledge, there might be a smaller number of possible providers. Therefore, the bargaining position of indigenous peoples and their possibilities for sharing benefit should be stronger than those of indigenous peoples with regard to who have plant genetic resources and associated knowledge for food and agriculture applications - where the number of claimants may be greater and may include farmers from many parts of the world.<sup>103</sup>

Another reason for adopting different rules for the access to traditional knowledge is that the protection of, and access to, landraces or traditional varieties and associated traditional knowledge relevant for food and agriculture should be consistent with commitments already

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<sup>100</sup> Bifani, above n 75.

<sup>101</sup> J.J. Hardon, B. Vosman and J.L. Van Hintum, 'Identifying Genetic Resources and Their Origin: The Capabilities and Limitations of Modern Biochemical and Legal Systems. Study Paper No 4 E' (FAO Commission on Plant Genetic Resources, 1994) 15.

<sup>102</sup> Brush, 'Farmers' Rights and Protection of Traditional Agricultural Knowledge. CAPRI Working Paper No 36', above n 90.

<sup>103</sup> Dutfield, 'Biodiversity in Industrial Research and Development', above n 91, 110.

made by Amazonian countries, by adopting the International Treaty on Plant Genetic Resources for Food and Agriculture (FAO Treaty). Given that access to such genetic resources and associated traditional knowledge is crucial for sustainable agriculture and food security, it is recommended that the Amazonian *sui generis* regime should provide simplified rules for its access, in accordance with the provisions of the FAO Treaty. To this effect, regulations that facilitate access to traditional knowledge associated with genetic resources relevant for food and agriculture should be devised in a separate chapter of the Amazonian *sui generis* regime. Such facilitated access should not apply to other uses of traditional knowledge. Therefore, the conditions for access to traditional knowledge associated to landraces or traditional varieties, for other purposes such as chemical, pharmaceutical, botanical and/or other non-food/feed industrial uses, should follow the ordinary regulations established by the Amazonian *sui generis* regime, along with the Indigenous Regional Protocol. Accordingly, this thesis recommends that those Amazonian countries, which have not already done so, must adopt, ratify and implement the FAO Treaty. They should, in particular, implement the Farmers' Rights, including protection of traditional knowledge relevant to plant genetic resources for food and agriculture. Acknowledgment should also be granted of the rights of farmers and indigenous peoples to share the benefits arising from the utilization of such resources, together with the right to participate in the decision-making process for the development of policy and legal measures that promote the sustainable use of plant genetic resources for food and agriculture.

Simplification of the procedures for access to traditional knowledge in basic scientific research (such as for taxonomic purposes and for analysis of the interrelationship between species) and other academic purposes is recommended as commonsense proposal of general benefit. Here, the adoption of special benefit-sharing requirements should also be considered. However, if access to knowledge is initially for academic purposes but subsequently used for commercial purposes, the benefit-sharing profile should be altered correspondingly.

## **2    *Prior Informed Consent***

An essential pre-condition to effectively assess the validity or legality of a prior informed consent agreement is to clearly identify and define which clan, family, group or people who hold the knowledge and are entitled to authorize its use. The Amazonian countries should, as recommended before, develop and maintain a system for the identification of the indigenous peoples who share the same or similar traditional knowledge. The prior informed consent of

indigenous peoples should give practical effect to the application of the Indigenous Regional Protocol. This can be achieved by setting essential conditions governing access to knowledge and the negotiation of the mutually agreed contract for the regulation of benefit-sharing.

The users of traditional knowledge should have the onus of providing evidence that adequate measures have been taken to obtain prior informed. The national and the sub-national sections of the Amazonian Traditional Knowledge Council should assume the responsibility to ascertain the veracity of the information disclosed by the user of traditional knowledge. In this context, a regional system of certification should be established.<sup>104</sup>

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<sup>104</sup> A certification system has been proposed by Tobin. For more information about such proposal, see Tobin, 'Certificates of Origin: A Role for IPR Regimes in Securing Prior Informed Consent', above 53.

### Recommendations

#### ***27. Recognition and Respect of Indigenous Peoples' Rights to Control the Access to Traditional Knowledge***

The Amazonian *sui generis* regime should recognize indigenous peoples' right to grant or deny access to genetic and biological resources and associated traditional knowledge and to establish the terms and conditions of such access. In addition, indigenous peoples should have rights to control the use of traditional knowledge, even where such knowledge is considered to be in the public domain.

#### ***28. Establishment of Special Rules for Access to Traditional knowledge, vis-à-vis the Relation between Traditional Knowledge and Genetic Resources and the Purpose of the Access***

The Amazonian *sui generis* regime should establish different rules for the regulation of access to traditional knowledge associated with genetic and biological resources related to food and agriculture (in accordance with the FAO Treaty), for pharmaceutical and botanical medicines, and other purposes. It should also establish different rules for the regulation of access to traditional knowledge for research where the research is for academic rather than commercial or industrial purposes.

A scheme for authorization should emphasize the provisions for access to traditional knowledge rather than the actual genetic or biological resources themselves. That is, permission to access traditional knowledge does not imply permission to access and/or use associated genetic and biological resources, in particular landraces or traditional varieties and vice versa.

#### ***29. Certification of Prior Informed Consent***

The Amazonian *sui generis* regime should establish a regional certification system for obtaining, registering and determining whether prior informed consent has been effectively obtained.

The Amazonian countries should create a legal and administrative framework designed to control and monitor the granting of the intellectual property rights over genetic and/or biological resources, their derivatives, and associated traditional knowledge.

## V SUMMARY OF BENEFITS ARISING FROM THE ADOPTION OF A REGIONAL SUI GENERIS REGIME

If adopted, the Amazonian *sui generis* regime would provide the following benefits:

- (i) harmonization of the requirements for access to, and protection of, traditional knowledge which would increase market confidence;
- (ii) creation of similar conditions across the Amazonian countries for access and benefit-sharing which would minimize disadvantages to certain indigenous peoples and countries compared to others. It would also facilitate the enforcement of access and benefit-sharing requirements;
- (iii) creation of a community-based prior informed consent mechanism which would facilitate consultation with the holders of the knowledge to which access has been sought;
- (iv) achievement of a situation in which there is an equitable sharing of benefits between all indigenous peoples;
- (v) avoidance of unfair competition among indigenous peoples from different communities or countries that share genetic resources, which might otherwise generate rivalry between neighboring countries and the signing of contracts or agreements on prejudicial terms;<sup>105</sup>
- (vi) provision of clear and pragmatic directions and streamlined processes for obtaining access to traditional knowledge; avoidance of favoring one country over another on the basis of their access regulations, as all Amazonian countries will be subject to the same rules. All Amazonian countries should have equal power in negotiating with industrial entities interested in the utilization of genetic resources and associated traditional knowledge;

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<sup>105</sup> Roht-Arriaza, above n 14, 63. Roht-Arriaza notes that 'contracts may exacerbate divisions among indigenous and local communities as part of the community seeks to capitalize on lucrative opportunities to the exclusion of others ... corporations and scientists could therefore play one community against another for more favourable terms.'

- (vii) prevention of predatory conduct by bio-prospectors exploiting relatively weak bargaining powers of indigenous peoples and lower standards of protection for benefit-sharing requirements;<sup>106</sup>
- (viii) avoiding future claims for sharing benefits brought against the user of traditional knowledge by other indigenous peoples;
- (ix) more efficient use of administrative resources by Amazonian countries and their indigenous peoples by pooling efforts and mechanisms to enforce their rights and to monitor the commercial use of traditional knowledge and collect the benefit;
- (x) facilitation of the development of an international regime to protect traditional knowledge and the facilitation of the transition from regional to an international scheme to achieve this objective; and
- (xi) enhancement of the opportunities for leverage by individual countries.

Despite these significant benefits, the problem with the enforcement of rights outside the Amazon region may persist even with such a regional *sui generis* regime in place because of the lack of international cooperation for the protection of traditional knowledge protection. However, a regional regime should still enhance the ability and capacity of indigenous peoples to pursue the legal recognition of their rights, to challenge any failure to recognize their rights over traditional knowledge and to oppose the granting of intellectual property protection over invention derived from traditional knowledge which was appropriated without their proper authorization.

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<sup>106</sup> Ten Kate and Laird, above n 83, 70. In a survey of companies using plant genetic resources, Ten Kate and Laird note that '[s]everal said they would avoid working in countries that have adopted stringent access regimes.' See also United Nations on Environment Programme, Convention on Biological Diversity, Conference of the Parties, *Review of National, Regional and Sectoral Measures and Guidelines for the Implementation of Article 15*, [Para. 17(d)], UNEP/CBD/COP/4/23, (1998). See also Rural Advancement Foundation International, *Bioprospecting/Biopiracy and Indigenous Peoples. RAFI Communique* Rural Advancement Foundation International, *Bioprospecting/Biopiracy and Indigenous Peoples. RAFI Communique* (1994) ETC group <<http://www.etcgroup.org/article.asp?newsid=212>> at 14 September 2005.



## CHAPTER 10

### CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH

The fundamental concerns addressed in this thesis were the lack of effective mechanisms to protect traditional knowledge and resultant increasing number of cases of misappropriation of traditional knowledge held by Amazonian indigenous peoples. In this context, the thesis critically examined whether and how (if, indeed, at all) traditional knowledge associated with genetic resources can be protected. Accordingly, it focused attention on traditional knowledge that is held or shared by different indigenous peoples. The ultimate aim, then, was to present a set of core recommendations for creating a regional *sui generis* regime to protect traditional knowledge held by two or more Amazonian indigenous people.

In this conclusion the most significant findings and recommendations that were presented are briefly summarized. Specifically, it was shown that the Amazon region is inhabited by different ethnic groups speaking some 500 languages. Each group has its own cultural identity distributed throughout the nine Amazon countries and extending across 8 million square kilometers. Throughout this region a great biodiversity of both fauna and flora species is to be found. As was shown in the Chapter, the Amazon rainforest is the earth's richest source of biological resources and has arguably half of all the plant and animal species. It was further demonstrated that the situation of indigenous peoples in the Amazon countries has changed since most of the countries have ratified significant international treaties in promoting indigenous peoples' rights. It was also shown that all Amazon countries (except Surinam) have recognized indigenous peoples' rights to maintain, express and develop freely their ethnic and cultural identities, as well as their rights to use and preserve their own language.

Among the significant findings formulated in the thesis was that there are several important rationales for protecting traditional knowledge. Specifically, this thesis focused attention on the five more compelling justifications for protecting such knowledge. The first rationale embraced the need for improving the livelihood of traditional knowledge holders and for preserving the cultural integrity of indigenous peoples. The second incorporated the need to reinforce and to promote equity, equality and non-discrimination with regard to protecting traditional knowledge. The third included the need to acknowledge the contributions made by traditional knowledge holders, as well as to promote the instrumental uses of traditional knowledge. The fourth referred to the need for promoting the conservation and the sustainable

use of biological diversity. The fifth concerned the need for ensuring compliance with international legal and moral obligations.

Another significant conclusion in this thesis is that in most cases traditional knowledge does not fulfill the requirements of patentability. Specifically, it was shown that none of the existing alternative *sui generis* models provide an adequate solution to the problem of protecting traditional knowledge held or shared by indigenous peoples from different countries. In a different context, it was concluded that the use of customary law to regulate access to, and protection of, traditional knowledge is desirable as it can help to protect indigenous peoples' rights, as well as ensure a more fair and equitable application of the rule of law. Accordingly, one important recommendation formulated here was that a common set of norms, rules and principles derived from customary law should be identified and used as the basis for developing a community protocol which should, in turn, be incorporated into the Amazon regional *sui generis* regime.

The thesis made the important observation that the Amazon countries have made considerable progress in developing legal frameworks to protect traditional knowledge at a national level. However, there is neither a standard mechanism to ensure effective articulation of different national regulations nor a mechanism to deal with the case of overlapping rights recognized and/or granted over the same, or similar, traditional knowledge to different holders. Further, as it was pointed out, there is no legislation dealing with traditional knowledge held or shared by more than one indigenous people or with genetic resources which is founded across borders. Finally, there is still considerable work to be undertaken by the Amazon countries to develop a comprehensive legal structure to adequately protect traditional knowledge held or shared by more than one indigenous people - not only within national borders, but also across borders of the Amazon region. Undoubtedly, this particular objective can be most appropriately effectuated through the mechanism of a regional *sui generis regime* incorporating a regional community protocol based on customary law.

In addition, three opportunities for future research were specifically identified. First, more empirical research is needed to identify which particular types of knowledge might be patentable - particularly in the light of recent developments in business method patenting which is in turn resulting in increased patentability of types of traditional knowledge. Second, further research should explore how indigenous peoples can utilize the concept of co-inventorship to attain their recognition as co-inventor of a traditional knowledge-based

product or process. The critical point here is in determining how to enable indigenous peoples to be recognized as co-inventors. Third, more research needs to be undertaken in the context of assisting Amazonian countries (in conjunction with the indigenous peoples and local communities) to identify the existence of sensitive areas of overlap between indigenous peoples' traditional knowledge and local communities' knowledge and how they should be harmonized and coordinated.

The important recommendations developed in Chapter 9 represent a significant opportunity for the Amazonian countries to create a mechanism that will protect effectively traditional knowledge and promote the equitable distribution of benefits for those indigenous communities which hold the same or similar traditional knowledge.

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