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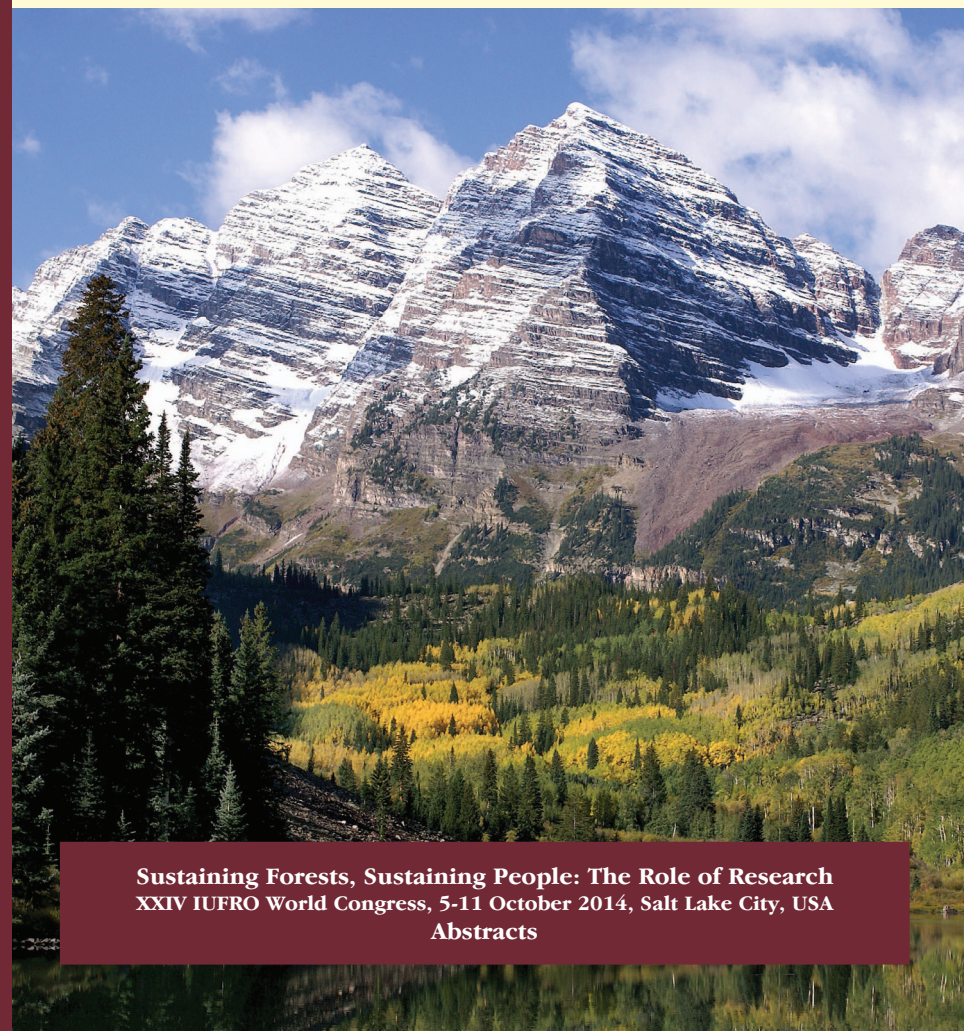
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Sustaining Forests, Sustaining People: The Role of Research
XXIV IUFRO World Congress, 5-11 October 2014, Salt Lake City, USA
Abstracts

EDITORS: JOHN A. PARROTTA, CYNTHIA F. MOSER, AMY J. SCHERZER, NANCY E. KOERTH and
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Sustaining Forests, Sustaining People: The Role of Research

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Abstracts

EDITORS

**JOHN A. PARROTTA, CYNTHIA F. MOSER, AMY J. SCHERZER,
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programs that require people's participation. This paper provides results from two case studies; in Gujarat, India, and in British Columbia, Canada. In the Indian case, a community forestry program was introduced in 1991 with the aim of regenerating degraded forests with community involvement. I carried out a survey with the same households in two time periods (1996 and 2011), on use, access and control over forest resources. In the Canadian case, I conducted interviews with a coastal First Nation that focused on values and perceptions on sustainable forest management (SFM). Using both examples, I reflect on the importance of inputs and participation of women and men in designing forest programs in the global South and North, and a few challenges associated with processes of implementing forestry programs.

A-24 Smallholders and forest landscape transitions: Locally devised development strategies of tropical America

Organizers: Benno Pokorny (University of Freiburg, Germany) & Wil de Jong (Kyoto University, Japan)

Employment and income generation in the non-timber economic activities in the Brazilian Amazon. Ferreira Filho, J.B.S. (University of São Paulo, Brazil; jbsferre@usp.br), Fachinello, A. (Federal University of Santa Catarina, Brazil; fachinello@hotmail.com).

In this paper we develop a Social Account Matrix (SAM) for the Brazilian Amazon region, with a focus on non-timber forest activities. The Amazon SAM distinguishes 12 activities related to the forest in the Amazon, and allows a detailed picture of jobs and income creation in those sectors. The linkages of those sectors with the rest of the economy are also addressed, as well as the degree of processing of forest products, both for local use and exports (to the rest of the world and the rest of Brazil). The SAM is used to derive SAM-based multipliers which highlight the interconnection of those forest sectors with the rest of the economy, allowing the analysis of their economic potential for income and jobs creation in a general equilibrium setting. Results show the limitation of those activities in terms of jobs and income creation in the Amazon, in contrast to the importance of the timber sector. Labor multipliers in some primary activities were found to be large, pointing to the importance of organizing their supply chain. Multipliers associated with forest products processing industries were also found to be large, highlighting the importance of developing further those sectors.

The role of smallholders in a green economy: the case of Peru. Guarín, A., Scholz, I. (German Development Institute, Germany; alejandro.guarin@die-gdi.de; imme.scholz@die-gdi.de).

This paper addresses the question of whether, and how, smallholder production contributes to the so-called green economy (or green growth), an economic model that explicitly considers the unaccounted for goods and services provided by ecosystems, as well as the negative externalities of human action. In this framework, the value of forests goes beyond timber and non-timber products to include the critical role of biodiversity and carbon sequestration, which is why payments for avoided deforestation (such REDD programs) play an important role. In the Peruvian Amazon, smallholder farmers appear to sit uncomfortably in this framework: they are allegedly one of the main drivers of deforestation through the expansion of subsistence agriculture. Despite broad assumptions, little is actually known about the real potential of smallholder farming for growth, inclusiveness and sustainability (the three pillars of a green economy). We review studies about smallholder economy in the Peruvian Amazon and rely on original interviews to address three main issues: (1) What is the evidence for the causes, motivations and results of deforestation in the Peruvian Amazon? (2) What is the evidence for the productivity, value generated, and environmental impact of smallholder farming? (3) What are the distributive effects of current REDD programs?

Forest management by smallholders in Western Amazon: towards more integrated approaches. Pacheco, P. (Center for International Forestry Research, Indonesia; p.pacheco@cgiar.org).

Significant reforms were undertaken in the past to promote sustainable forest management in the Western Amazon countries (i.e. Bolivia, Peru, Ecuador) including measures such as adopting instruments for regulating forest resource use, clarifying forest tenure rights and putting in place systems for illegal timber supply verification. These attempts have, however, not attended the demands from smallholders that have continued using the forests and engaging to the markets often in informal ways due to the difficulties to legalize their forestry operations. This paper explores the situation facing smallholders in their attempts to undertake forest management. The analysis is based on fieldwork undertaken in 2012 and 2013 in Ecuador, Bolivia and Peru. This paper suggests an integrated framework to move forward our understanding of the required policy approaches and steps towards more sustainable and inclusive forest management as part of broader economic and livelihood strategies undertaken by local actors. The latter entails not only to give more explicit attention to some dimensions of forest management, mainly those related to finance and business models, that have received little attention so far, but also to look at sustainable forest management as part of more integrated management perspectives of farms, community lands and landscapes.

Collective action for forest management: institutional challenges for enhanced social-ecological systems of the “environmental agrarian reform” in Anapu, Brazilian Transamazon. Porro, R. (Embrapa Eastern Amazon, Brazil; roberto.porro@embrapa.br), Miyasaka Porro, N., Menezes, M. (Federal University of Pará, Brazil; noemi@ufpa.br; marlon@ufpa.br), Bartholdson, Ö. (Swedish University of Agricultural Sciences, Sweden; orjan.bartholdson@slu.se).

This paper examines socioeconomic outcomes after five years of community forest management in a Sustainable Development Project (PDS) in Anapu, Brazilian Transamazon. The PDS is a tenure modality integrating land reform and environmental conservation. In 2007 families at the PDS Virola-Jatobá were advised by public agencies to perform forest management through a community-company partnership. Operations were conducted in 3 000 ha and near 50 000 m³ of timber extracted, generating revenues of US\$ 2 million to the local association. Yet, recent federal regulations determine that private companies should no longer control forest management in PDS areas, and families have to adjust their strategy. The article presents a temporal

assessment of collective action based on key stages in the trajectory of land access and forest management since families' initial struggle for land. It verifies impacts of the initiative on PDS-Virola-Jatobá social structure. Finally, it analyzes prospects for a system under direct coordination of producers' organizations. Changes in management are seen as positive as long as the state supports proper adjustment of local capacity, what is unlikely in the short term. As most of the families reached the limit of allowable land clearance, effective forest management is critical for these newly formed social groups to consolidate their land occupation and properly manage natural resources.

Frontier landscapes in the Peruvian Amazon: options by smallholders along the forest transition curve. Robiglio, V. (*World Agroforestry Center-ICRAF, Peru; v.robiglio@cgiar.org*).

The purpose of this research is to compare and contrast smallholder natural resource management strategies along the forest transition curve in the department of Ucayali (Peru). District land cover maps and deforestation rates are used to establish a forest transition curve for the region. Secondary spatial data, statistics and expert information are used to describe the gradient of factors and environmental conditions the curve symbolizes. Demographic, agricultural, forest, market statistics and government plans are analysed to characterize local development patterns and assess the correspondence between frontier configuration (i.e. forest fragmentation pattern) and identified development contexts. Primary household and focus group data on livelihoods strategies, local ecological knowledge and technological packages adopted by communities in selected districts are used to characterize production systems, understand how they combine in livelihoods strategies within each development context/frontier. Based on preliminary results and expert consultation selected production systems are discussed to understand if/how they vary along the frontier landscape curve, offering an assortment of locally fine-tuned alternatives of standard development models/technologies.

Traditional perspectives on ecology and timber extraction in a bamboo-dominated forest: A complementary knowledge base for sustainable management. Rockwell, C. (*Center for International Forestry Research, Peru; rockwell_cara@yahoo.com*), Kainer, K. (*University of Florida, USA; kkainer@ufl.edu*).

Bamboo-dominated forests of southwestern Amazonia cover a tremendous area of approximately 180 000 km². Nonetheless, relatively little information on this system has been documented in the literature, in terms of local knowledge and management. To identify constraints of timber harvesting and implications for smallholder management systems in this region, we evaluated available scientific data, traditional local knowledge, and relevant community experiences in forest management in Acre, Brazil. All informants interviewed had been involved with timber management activities from 4–10 years, and all indicated that tree removal by logging crews favored bamboo expansion and increased fire risk – views that correspond with the scientific literature on anthropogenic disturbances and bamboo forests. Yet, these same informants identified the important role that the bamboo-dominated forest type plays in their land management strategies, including providing nutrient-rich soils for shifting agricultural crops and suitable habitat for game animals. We also analyzed existing local data for tree species composition to assess local forest value. We provide suggestions about how these complementary bodies of knowledge can be put into practice for the purpose of sustaining the natural resource base within the context of local communities.

Opportunities and perceptions of smallholders regarding their potential to contribute to forest landscape transitions under REDD+: two case studies from Mexico. Skutsch, M., Paneque Gálvez, J., Salinas Melgoza, M., Borrego, A. (*Universidad Nacional Autónoma de México, Mexico; mskutsch@ciga.unam.mx; jpanequegalvez@gmail.com; ma.masm@gmail.com; armoniab@gmail.com*), Bee, B. (*East Carolina University, USA; bethbee78@gmail.com*), Mas, J., Gao, Y. (*Universidad Nacional Autónoma de México, Mexico; jfmas@ciga.unam.mx; yangao98@gmail.com*).

In Mexico, REDD+ is being presented as a win-win policy that will enable forest communities to benefit financially and diversify their income sources while preserving and increasing their forest carbon stocks through more sustainable management. Although in Mexico REDD+ is expected to be led by its States, it is expected that forest communities will have opportunities to tailor their own approaches. In this context, locally devised strategies to contribute to and benefit from REDD+ will depend on local opinions about what the opportunities under REDD+ could be. However, to date there is little understanding about what opportunities exist in reality for forest communities to contribute to forest landscape transitions under REDD+, and even less about how forest smallholders perceive these opportunities. To address such a gap, we assess (1) smallholders' perceptions about their opportunities in REDD+, (2) what strategies they are currently envisaging for participation, and (3) what the trade-offs and synergies with other dimensions of local development appear to be. The paper reports on on-going research in two areas of Mexico, the basin of the Ayuquila River in Jalisco, and the Monarch Butterfly Reserve in Michoacán, where pilot REDD+ projects are underway.

Posters

The role of forests, fallows and fisheries in household income generation and flood shock coping in the Peruvian Amazon floodplain. Cotta, J. (*University of Copenhagen, Denmark; jcotta@earthlink.net*).

This study contributes detailed quantitative data related to natural resource contributions to subsistence and cash incomes in the Ampiyacu-Apayacu basin. It also highlights the importance of resource harvest for household shock coping following a severe flood, which is especially relevant in light of the increasing frequency and intensity of extreme weather events related to climate change worldwide. In-depth household surveys quantified annual household incomes from all sources in eleven villages in 2011 and structured questionnaires assessed natural resource-based coping following a severe flood in 2012. Key products relied upon to cope with economic flood impacts included *Mauritia flexuosa* fruits, *Astrocaryum chambira* handicrafts, *Lepidocaryum tenue* roof thatch, *Euterpe precatoria* palm heart, wild game, timber and fish. These products are particularly valued after the flood due to the inefficiency of mutual assistance in the midst of widespread livestock and crop staple losses. Resource harvest is influenced by shock intensity, typical household livelihood portfolios, ethnicity, and proximity to resources and markets. Interventions to improve smallholder shock resilience for forest-dependent populations should consider landscape heterogeneity and specific resource user types. Particular attention should be paid to households characterized by high vulnerability (e.g., residents with only flood-vulnerable cultivation) and limited availability/diversity of environmentally-sourced coping resources.