

GENDER EQUALITY

CONTRIBUTIONS OF EMBRAPA

Cristina Arzabe
Valéria Cristina Costa

Technical Editors



**Brazilian Agricultural Research Corporation
Ministry of Agriculture, Livestock and Food Supply**



Sustainable Development Goal 5

GENDER EQUALITY

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*Cristina Arzabe
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Translated by
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Foreword

Launched by the United Nations in 2015, 2030 Agenda for Sustainable Development is powerful and mobilizing. Its 17 goals and 169 targets seek to identify problems and overcome challenges that affect every country in the world. The Sustainable Development Goals (SDG), for their interdependent and indivisible character, clearly reflect the steps towards sustainability.

Reflecting and acting on this agenda is an obligation and an opportunity for the Brazilian Agricultural Research Corporation (Embrapa). The incessant search for sustainable agriculture is at the core of this institution dedicated to agricultural research and innovation. Moreover, sustainable agriculture is one of the most transversal themes for the 17 goals. This collection of books, one for each SDG, helps society realize the importance of agriculture and food for five priority dimensions – people, planet, prosperity, peace and partnerships –, the so-called five Ps of 2030 Agenda.

This collection is part of the effort to disseminate 2030 Agenda at Embrapa while presenting to the global society some contributions of Embrapa and partners with potential to affect the realities expressed in the SDG. Knowledge, practices, technologies, models, processes and services that are already available can be used and replicated in other contexts to support the achievement of the goals and the advancement of 2030 Agenda indicators.

The content presented is a sample of the solutions generated by agricultural research at Embrapa, although nothing that has been compiled in these books is the result of the work of a single institution. Many other partners joined in – partners in universities, research institutes, state agricultural research organizations, rural technical and extension agencies, the Legislative Power, the agricultural and industrial productive sector, research promotion agencies, in the federal, state and municipal ranges.

This collection of books is the result of collaborative work within the SDG Embrapa Network, which comprised, for 6 months, around 400 people, among editors, authors, reviewers and support group. The objective of this initial work was to demonstrate, according to Embrapa, how agricultural research could contribute to achieve SDGs.

It is an example of collective production and a manner of acting that should become increasingly present in the life of organizations, in the relationships

between public, private and civil society. As such, the work brings diverse views on the potential contributions to different objectives and their interfaces. This vision is not homogeneous; sometimes it can be conflicting, just like society's vision about its problems and respective solutions, a wealth captured and reflected in the construction of 2030 Agenda.

These are only the first steps in the resolute trajectory that Embrapa and partner institutions draw towards the future we want.

Maurício Antônio Lopes

President of Embrapa

Preface

In September 2015 heads of state and government and senior representatives gathered at the United Nations Headquarters in New York to decide on the new global Sustainable Development Goals and they committed to work tirelessly for full implementation of this 2030 Agenda.

Sustainable Development Goal 5 (SDG 5) focuses on gender equality. In order to achieve gender equality and empower all women and girls, SDG 5 has nine targets:

5.1 End all forms of discrimination against all women and girls everywhere

5.2 Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation

5.3 Eliminate all harmful practices, such as child, early and forced marriages and female genital mutilation

5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate

5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in the political, economic and public life

5.6 Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences

5.A Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws

5.B Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women

5.C Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels¹. (United Nations, 2020).

This publication presents some examples of Embrapa's efforts to meet six targets for gender equality and empowerment of women, both internally and regarding rural women, to help eliminate discrimination (target 5.1), to promote shared responsibility within home and family (target 5.4), to promote the full and effective participation of women and equal opportunities for leadership at all levels of decision-making in public life (target 5.5); to support rural women so that they can fully enjoy equal rights to economic and natural resources (target 5.A), including through the use of information and communication technology (target 5.B) and the adoption and strengthening of national policies for the promotion of gender equality (target 5.C).¹

The publication was structured in eight chapters and starts exposing the theme of SDG 5 and its contextualization in the world, in Brazil and within the scope of Embrapa. Chapter 2 discusses the main problems related to the topic. Chapters 3, 4 and 5 refer to Embrapa's actions to strengthen the productive inclusion and organization of rural women. Chapter 6 highlights the role of communication for women's visibility. Chapter 7 addresses strategies for using information and communication technology for women. Chapter 8 presents a summary of Embrapa's role and the challenges and perspectives on the topics discussed so that new contributions can be implemented by Embrapa.

Technical Editors

¹ UNITED NATIONS. **Sustainable development goal 5:** Achieve gender equality and empower all women and girls: targets & indicators. Available at: <<https://sustainabledevelopment.un.org/sdg5>>. Accessed on: Feb. 11, 2020.

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Chapter 1

Efforts for gender equality in the world, in Brazil and at Embrapa

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Concept of gender according to the United Nations

Gender is a concept that refers to the relationships, roles, behaviors, activities and attributes that a given society, in a specific historical moment, considers appropriate for women and men, being a concept changeable in time and space. In addition to the social attributes and opportunities associated with “being a woman” or “being a man” and the relationships between women and men, girls and boys, gender also refers to relationships between the women and between the men. These attributes, opportunities and relationships are socially constructed and learned through socialization processes, being different according to the culture of each people, country or society, and they change over time. Thus, gender determines what is expected, allowed and valued in a woman or a man, in a given specific context. (Nações Unidas, 2016).

In all societies there have been, in the past, greater or smaller gender differences and, in most of them, the inequalities between women and men are evidenced in the responsibilities attributed to them, in the activities carried out, access and control over resources (including information and knowledge, paid work, income and credit, movable assets – such as equipment and tools –, real estate – such as house and land –, and time), as well as opportunities for decision making, expressing relationships of power. Gender is part of the broader sociocultural context and, together with race and ethnicity, in Brazil, are components of structural inequalities, in which women and the black population have the worst socioeconomic indicators (Princípios..., 2016).

Efforts for gender equality in the world

The Women’s International Year (1975) was when the first *World Conference on Women* was held, with the participation of 133 delegations, being 113 of which

led by women. The highlight of the conference was the holding of the *Forum of Non-Governmental Organizations*, which was attended by 4,000 activists. The conference created a strategic space, which would consolidate in other women's conferences. It made the creation of the Voluntary Fund for the United Nations Decade for Women possible, which would be converted into the United Nations Development Fund for Women (Unifem) in 1985, by decision of the *3rd World Conference on Women* (Nações Unidas, 2018).

In 1981 the [Convention on the Elimination of All Forms of Discrimination against Women](#) (CEDAW) was adopted and ratified by over 185 countries, including Brazil, which is considered the women's rights charter.

In 1995, the *Fourth World Conference on Women: Action for Equality, Development and Peace* was held in Beijing, China, whose landmark document was the [Beijing Platform for Action](#) (United Nations, 1995), the historic agreement on gender equality and women's rights. This document defines the concept of gender for the international agenda and represents a consensus of the UN member States with a minimum commitment to the human rights of women. It incorporates the commitment of the international community to the advancement of women and to the effective implementation of the action platform, ensuring that the gender perspective is reflected in all policies and programs at the regional, national and international levels (Princípios..., 2016).

One of the central objectives of the Beijing Platform for Action is to encourage women to become independent and self-reliant, that is, to control their own lives. Both government and society should create the conditions for and support women in this process, to guarantee their possibility of realizing their entire potential in society and to build their lives according to their own aspirations and their collectivities. Strengthening includes the right to freedom of conscience, religion and belief for women; their full participation, on an equal basis, in all social fields, including participation in decision-making and access to power; explicit recognition and reaffirmation of the right of all women to access and control all aspects of their health; women's equal access to natural and economic resources, including land, credit, science and technology, vocational, information, communication and markets training; the elimination of all forms of discrimination and violence against women and girls; and the right to education and vocational training and their access (Princípios..., 2016).

Finally, in 2010, [UN Women](#), a United Nations entity for gender equality and the empowerment of women, was founded to accelerate progress that will lead to the improvement of women's living conditions.

The sum of these international efforts for the equal participation of women in decisionmaking is not only a requirement of simple justice or democracy, but also because it is seen as a necessary condition for the interests of women to be considered. Without the active participation of women and the incorporation of the perspective of women at all levels of decision-making, the goals of equality, development and peace cannot be achieved (Princípios..., 2016).

Efforts for gender equality in Brazil

In 2003, the Secretaria Nacional de Políticas para as Mulheres (Policies for Women National Secretariat – SPM) was created, linked to the Secretariat of Government of the Presidency of the Republic, whose main objective is to promote equality between women and men and to combat all forms of prejudice and discrimination inherited from a patriarchal and excluding society. It is the result of a successful strategy of the Brazilian feminist movements to ensure the recognition of its guidelines, among which the *Marcha das Margaridas* (Daisies' March) stands out. This march takes place since the year 2000, during August in Brasília, and it is an important manifestation of rural women, organized by the Confederação Nacional dos Trabalhadores na Agricultura (National Confederation of Agricultural Workers – Contag).

The SPM was the direct and immediate advice to the Presidency of the Republic in the formulation, coordination and articulation of policies for women, besides planning of the incorporation of a gender perspective into the action of the Federal Executive Power and other public spheres, for the promotion of gender equality. This secretariat is also responsible to coordinate, implement, monitor and evaluate the National Plan of Policies for Women throughout the country (Plano..., 2013). The plan included a set of integrated public policies to support rural women to promote sustainable rural development with equality.

Regarding access to land, the federal government also established, in 2003, the obligation of joint entitlement of land in the lots of agrarian reform settlements, regardless of the marital status of the couple. As of 2007, preference was given to female heads of household in the selection and classification of the beneficiary families of the agrarian reform and it was determined that in the case of separation, the lot shall stay with the woman, as long as she remains with the custody of the

children. Legal land possession is a structural step for the economic and social inclusion of women and an essential condition for them to access other policies aimed at promoting their empowerment and productive inclusion.

In 2003, a specific line of financing for women's productive activities (Pronaf Mulher) was created within the Programa Nacional de Fortalecimento da Agricultura Familiar (National Program for the Strengthening of Family Agriculture – Pronaf), making it possible to increase the public's access to credit. In the following year, the Política Nacional de Assistência Técnica e Extensão Rural (National Policy on Technical Assistance and Rural Extension – Pnater) began to recognize and stimulate women's participation in productive activities, deconstructing the notion of their work as help, valuing and improving the knowledge of their practices (Nobre et al., 2008). In the same year, the Ministry of Agriculture, Livestock and Food Supply (Mapa) instituted the Coopergênero program through Ministerial Ordinance 156, with the purpose of contributing to the construction of gender equality/balance in the area of Brazilian cooperativism and associativism (Daller, 2010).

The Programa de Organização Produtiva das Mulheres Rurais (Program of Productive Organization of Rural Women – POPMR), created in 2008, is an action by the federal government to facilitate women's access to productive marketing and organization policies by disseminating the principles of feminist and solidarity economy. It has as main objective the strengthening of productive organizations of rural workers, encouraging the exchange of information, technical, cultural, organizational, management and marketing knowledge (Nobre et al., 2008).

The Plano Nacional de Desenvolvimento Rural Sustentável e Solidário (National Plan for Sustainable and Solidary Rural Development – PNDRSS) has as one of its strategic objectives the promotion of women's autonomy and, among its goals, it is worth mentioning the guarantee of at least 30% of the projects to foment agroindustrialization, commercialization and solidary pluriactivities developed by women (Plano..., 2014).

Finally, one of the guidelines of the Política Nacional de Agroecologia e Produção Orgânica (National Policy on Agroecology and Organic Production – Pnapo) is to contribute to the reduction of gender inequalities, especially in terms of expanding and consolidating the participation of rural women in agroecological and organic production (Brasil, 2012). As of 2016, the Plano Nacional de Agroecologia e Produção Orgânica (National Plan of Agroecology and Organic Production – Planapo), through specific actions focused on women, has sought to give concreteness to this guideline (Brasil..., 2013).

The mission of the Brazilian Agricultural Research Corporation (Embrapa) is to provide research, development and innovation solutions for the sustainability of agriculture, for the benefit of Brazilian society. Thus, Embrapa has dedicated itself to the subject of gender by supporting the productive inclusion of women and the concreteness of the public policies defined by the Brazilian State and described above, among others, which respond to the country's adhesion to the SDG and the commitment to the UN and member States. In this manner, Embrapa responds to the goal of adopting and strengthening sound national policies and applicable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels (target 5.C).

Efforts for gender equality within Embrapa

In 2007, Embrapa joined the Programa Pró-Equidade de Gênero e Raça da Secretaria Nacional de Políticas para as Mulheres da Presidência da República (Gender and Race Pro-Equality Program of the National Secretariat of Policies for Women of the Presidency of the Republic – SPM/PR). Since then, Embrapa has participated in this program and has concluded its participation in the 2nd (2007–2008), 3rd (2009–2010), 4th (2011–2012) and 5th (2013–2015) editions obtaining the Gender and Race Pro-Equality seal, an instrument that demonstrates the commitment to the development of policies and practices in favor of gender and race equality. In 2016, Embrapa joined the 6th edition of the SPM program for the biennium 2016–2018.

The Programa Pró-Equidade de Gênero, Raça e Diversidade da Embrapa (Embrapa's Gender, Race and Diversity Pro-Equality Program) aims to promote equal opportunities and respect for diversity among employees, both male and female, through the development of new conceptions and practices of people management and organizational culture. In addition, it seeks to reflect and encourage the valuation of the human people, their integrity and their culture, as a way of inclusion in the different environments and social-historical-cultural moments, in order to promote equal opportunities among the different ethno-racial groups of Embrapa.

Since the implementation of the Programa Pró-Equidade de Gênero, Raça e Diversidade (Gender, Race and Diversity Pro-Equality Program), Embrapa has been promoting the theme through different actions. Some of them are highlighted in this time line: 1- Nossas Vozes (Our Voices) audio program, with production of 11 editions available on Embrapa's web portal, presenting reflections on gender

and interviews with specialists in the area, among them Tânia Fontenelle, Nilcéa Freire, Lia Zanotta, Solange Sanches and Leonardo Boff (2008 to 2011); 2- the Mulher Embrapa (Embrapa Woman) campaign, aiming to promote reflections on the role of women in the professional context in the most diverse work activities, with a photographic exhibition (of 21 employees) and production of hotspot (stories and photographs of 124 female employees) in honor of International Women's Day (2011); 3- workshops on diversity and equality of gender, race and people with disabilities in organizational practice aimed at building spaces for dialogue and identifying actions for advancement in equal opportunities. To this end, the Department of People Management (DGP) prepared a guidance document to the Units regarding content, concepts and participatory methodology for local application (2012–2014); 4- the booklet with corporate guidelines on representation of gender, race and diversity in Embrapa's media for the construction of visual, oral and written language, considering the inclusive language as the guideline of institutional language (2015); 5- the *Ética e Equidade no Ambiente Organizacional para Estagiárias e Estagiários e Terceirizadas e Terceirizados da Embrapa Sede* (Ethic Training and Equality in Organizational Environment for Male and Female Interns and Outsourced Employees at Embrapa Headquarters), carried out by the coordination team of the Gender, Race and Diversity Pro-Equality Program and Embrapa Ethics Committee (CEE). There was a training course for 128 interns and 87 outsourced employees, totaling 215 participants. The Decentralized Units (UDs) also received guidance and materials for carrying out training (2017).

Currently, in the General Division of Embrapa, the program is coordinated in the sector of Welfare of People Management. Decentralized Units have equality representatives who act as facilitators in disseminating the program's principles and objectives at the local level.

In 2010, Embrapa also adhered to the Women's Empowerment Principles - Equality Means Business (Princípios..., 2016), led by UN Women and the UN Global Compact (UNGC), which highlights principles to be followed by companies seeking to strengthen women's participation in all levels of economic activity, including establishing high-level corporate leadership for gender equality, promoting education, training and professional development for women, implementing business development and the practices of the supply and marketing chain that empower women and mediating and publishing progress towards achieving gender equality.

Final considerations

The mobilization of the international community in a more organized and strategic manner since the 1970s has resulted in an effective proposal for the empowerment of women in the world. International conferences have mobilized funds to economically support the initiatives. The UN member States, including Brazil, have signed compromise agreements with this cause, which led to the definition of national public policies and the structuring of specific agencies to deal with this issue. Embrapa, in order to implement what was defined by the State, has partnered with other agencies, adopted programs and created action plans and projects to effect the necessary changes, responding to the goal of adopting and strengthening sound national policies and applicable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels (target 5.C).

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Chapter 2

Status of women in Brazil, disparities and efforts at Embrapa and in agriculture

Cristina Arzabe

Alba Leonor da Silva Martins

Global context

Reducing gender gaps in the labor market would allow an additional 204 million people to enter the global workforce by 2025. This increase could lead to a 3.9% increase in world gross domestic product (GDP). A large part of the jobs (162.4 million or 62%) would be generated in emerging countries, due to their relative size and the fact that they have the greatest gender disparities (Mujeres, 2017).

Among other factors, the expansion of the presence of women in positions of management, spaces of power and decision of the governments, in the spaces of social control of the public policies, in the parliament, in the political parties, in the social movements, in the unions, in the cooperatives, in the academic world and in access to professions considered to be male professions, as well as the construction within government of executive women's policy bodies (at different levels of the federation) broaden the horizon of the participation and political action of women and make a new configuration for the occupation and construction of these spaces with equality and social justice (Plano..., 2013).

Women situation in Brazil

Despite the fact that Brazilian women represent 52% of the population, Brazil still ranks 118th in the ranking of women's political participation in the 198 countries surveyed, according to the *Global data base of quotas for women* information report (Plano..., 2013).

Asymmetries appear in other contexts as a reflection of our culture, whose Greco-Jew-Christian roots are strongly marked by misogynistic components, according to Chassot (2004), and under which the environments, identities, social roles and the public/private dichotomies are constituted. Within this culture, two gender stereotypes function as barriers to women also in the field of science: a) maintaining the role of women as the main responsible for the care of the

offspring and the domestic environment (Chassot, 2004; Silva; Ribeiro, 2014); since science progresses rapidly and time is a critical factor regarding the essential need to update and produce new knowledge, which impels the researchers to a greater dedication to the professional career, to the detriment of the personal, family and social areas (Prado; Fleith, 2012); and b) the characterization of certain areas of knowledge as being typically masculine, as in the case of Agrarian Sciences (Cunha et al., 2014). Rigolin et al. (2013), studying science and technology in the context of the National Institutes of Science and Technology (INCTs), also recorded that Agricultural Sciences are one of the thematic areas in Brazil that brings together the fewest women leaders today.

Thus, the productive insertion of women is conditioned by the permanent tension between their family and professional responsibilities. The division of domestic burdens between women and men is one of the decisive factors for the achievement of female autonomy, especially the economic one. Currently, 78% of white girls and 86% of black girls perform domestic chores, while only 39% of white boys and 40% of black boys do these same tasks (Nações Unidas, 2016).

Even though they are employed in the labor market, women continue to be responsible for unpaid domestic work, which leads to the so-called double shift. In 2015, the total average weekly workload for women in Brazil was 7.5 hours greater than the weekly workload for men, and 53.6 hours a week is the average workload for women and 46.1 for men (Ipea, 2017).

In most developing countries, poorer women have less choice of reproductive planning, less access to prenatal care, and are more likely to give birth without the assistance of a health professional. Limited access to reproductive planning reflects in 89 million unintended pregnancies and 48 million abortions in developing countries each year (Mundos distantes, 2017). This does not only affect women's health, but it also limits their ability to enter or remain in the paid labor market and excludes the possibility of achieving financial independence. In Brazil, according to data for 2015, among the 22.5% of the young people, between 15 and 29 years of age, who did not study or work, more than 65% are women, and the majority (54.1%) had at least one son or daughter (População..., 2017).

Lack of access to services such as daycare centers also limit women in the search for jobs. For women in the labor market, the absence of paid maternity leave and the discrimination that many face at work when they become pregnant turn out to be a maternity penalty, which forces many to choose between advancing their careers and becoming mothers.

In general, the difficulties presented here are faced by all Brazilian women, but women living in rural areas face more specific problems, which will be discussed in this work.

Rural women

The common elements that characterize the lives of rural women in Latin America and the Caribbean are an overload of work, due to the sexual division of labor, which make them responsible for taking care of: sons, daughters, elderly men and women, sick men and women. Other common elements are the invisibility of the work they perform in the reproductive, productive and self consumption areas; low access to the means of production: land, water, seeds, inputs; the low quality of the lands that control agropastoral production; the difficulties they face for political participation, the little economic and decision-making autonomy they possess in patriarchal agreements; the precariousness and temporality of the works they carry out, which generates economic insecurity; as well as the low level of coverage in social protection systems. At the same time, the growing role of women in the defense of their territories, biodiversity and in the socioeconomic and cultural maintenance of the communities where they live is observed throughout the region (Nobre; Hora, 2017).

Regarding property of agricultural establishments, according to the [Food and Agriculture Organization of the United Nations](#) (FAO, 2013), only 13% of the owners were women in the year 2013. This number almost doubled compared to the 1970s when it did not exceed 8%.

It is noteworthy that only in the Constitution of 1988 rural women received the status of rural producers, which allowed their access to labor rights. From then on, there was a strong effort to organize and document the rural women, since many did not even have identity cards. The Programa Nacional de Documentação da Trabalhadora Rural (National Program for the Documentation of the Female Rural Worker – PNDTR) assured rural women access to civil, social security and labor documents, free of charge and in the vicinity of their home, in order to achieve their status as citizens, strengthening their autonomy and enabling access to public policies, being PNDTR executed through itinerant mutual-aid groups (Brasil, 2007).

According to Di Sabbato et al. (2009, our translation) “the proportion of employed women without pay is significantly higher in agriculture and livestock,

compared to other sectors of the economy". Rural women also find limitations to have expanded and qualified access to rural credit, such as Pronaf, due to the limited economic autonomy and restricted possibility of resource management, according to Butto (2011), since they still find it difficult to master the spaces of management and commercialization of the production. Finally, according to Hernández (2009) there is the belief, on the part of many of them, that "men are the ones who know about business".

It is from this reality that the support and empowerment of women by Embrapa occurs in two strands. One is focused on the women who are part of Embrapa's staff and the other on rural women.

Efforts for gender equality within Embrapa

Embrapa is a company with a low number of women in its staff. According to data from 2016, only 30% of its staff are women (ratio 30♀/70♂), which corroborates the observations of some authors such as Rigolin et al. (2013) and Cunha et al. (2014) regarding the characterization of certain areas of knowledge as being typically male in Brazil, as is the case of Agrarian Sciences.

Efforts for the staff of female and male employees help achieve four targets (Figure 1), one of which is more general, regarding ending all forms of discrimination against women (5.1), and three more specific (5.4; 5.C ; 5.5), which seek to effect the first one.

The first target concerns the recognition and appreciation of unpaid care and domestic work, through the promotion of shared responsibility within the home and family (target 5.4), achieved at Embrapa from advances represented by means of benefits granted to male and female employees in relation to paternity leave, which began to occur from 2011–2012. Until then, Embrapa only complied with the legal provision of 5 calendar days, but the license was extended to 7 business days. In the collective bargaining agreement (ACT) 2013–2014, the paternity leave was extended to 10 working days, and since ACT 2016–2017, fathers have been guaranteed the right to enjoy 20 consecutive days, always with the objective of helping the mother during the puerperium.

The second specific target concerns the adoption and strengthening of sound national policies and applicable legislation for the promotion of gender equality and the empowerment of women (target 5.C), achieved through the partnership between Embrapa and the Secretaria Nacional de Políticas para as Mulheres

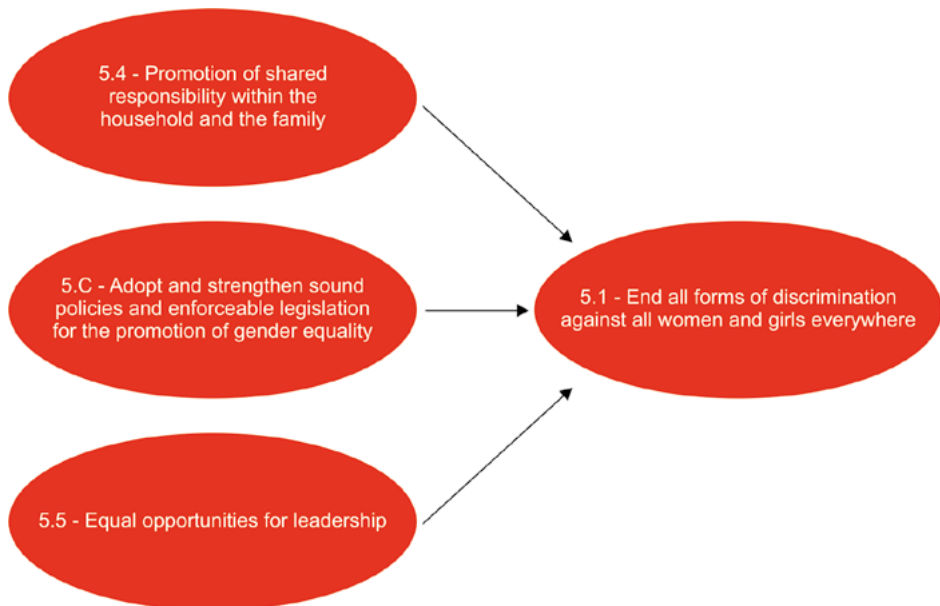


Figure 1. Efforts of Embrapa help achieve the targets to end all forms of discrimination against women.

(National Secretariat of Policies for Women – SPM) and active participation in the Gender and Race Pro-Equality Program since the 2nd edition (2007–2008 biennium), being Embrapa currently involved in the 6th edition of this program (2016–2018 biennium).

Target 5.5 refers to ensuring full and effective participation of women and equal opportunities for leadership at all levels of decision-making in public life. The occupation of management positions by women at Embrapa, in the year 2016, reflected the percentage of 31%. Comparing with 2006 (prior to joining the 2nd Edition of the Gender and Race Pro-Equality Program), it was observed that at Embrapa the proportion of women in its workforce was even lower, with only 25% of women working there (ratio 25♀/75♂). The 25% of management positions held by women reflected, in this period, the percentage of women at Embrapa. In other words, the percentage of management positions held by women was lower than that of management positions held by men in both 2006 and 2016, but women were not underrepresented; being only in a smaller number at Embrapa in relation to the number of men.

An important aspect, however, should be emphasized when management positions are separated by hierarchy levels. An analysis carried out in 2015 and

published in an institutional folder produced by the Gender, Race and Diversity Pro-Equality Program showed that in the higher positions, especially in the general heads of the Embrapa Decentralized Units, the percentage of women was much lower, equal to 14% only, when compared to the percentage of women in the Company (31%) and the supervisory positions occupied by them (33%) in that year. These data suggest that there is still a “glass ceiling” that prevents women from reaching these positions, which needs to be analyzed for effective action to be taken to mitigate this disparity.

Efforts of Embrapa for gender equality in agriculture

Embrapa’s actions for rural women were linked to four targets (Figure 2). Actions that support the achievement of economic autonomy and/or access to natural resources (5.A) in synergy with government programs respond to the target regarding the adoption and the strengthening of sound national policies and applicable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels (5.C). To exemplify, we present Embrapa’s work in the inclusion and productive organization of rural women in partnership with other governmental and non-governmental bodies, in which Embrapa subsidized, with data and information, the relations of these women with different institutions and the definition of policies access to and control of economic and natural resources, as will be presented in more detail in chapters 3, 4 and 5.

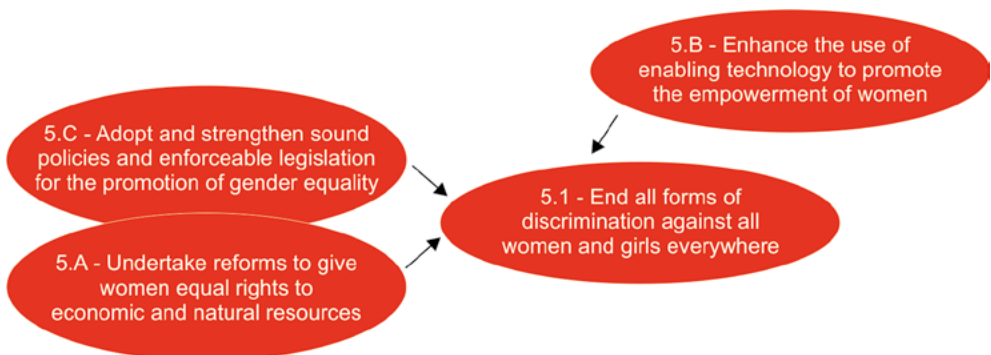


Figure 2. Efforts of Embrapa help rural women to achieve economic autonomy and/or access to natural resources for the promotion of gender equality and the empowerment of all women at all levels.

The use of base technologies, in particular information and communication technologies, to promote women's empowerment (target 5.B) is demonstrated from the formatting of radio and TV programs, virtual network, documentary video and interactive digital book dealing with the theme of gender and are accessible by different media, as presented in more detail in chapters 6 and 7. These efforts together help to end all forms of discrimination against all women (target 5.1).

Final considerations

Although it has advanced in many ways, women in Brazil still suffer from various types of discrimination and work longer hours than men, especially because of the non-shared responsibility within the home and family, which overwhelms and usurps many opportunities, in addition to lack of a good support structure, such as daycare centers. One of the main causes for this reality is the low political participation of women in Brazil, resulting in a country thought only from the male perspective. Therefore, the efforts of the country and of the institutions with this public are of extreme importance in order to achieve greater gender equality in both the urban and rural worlds.

In this sense, Embrapa contributes through its active participation in the Gender and Race Pro-Equality Program, which is a national policy to promote gender equality, seeking to create a work environment (internal and rural) where women and men have the same opportunities and are treated with the same respect, as described in the company's values, especially those related to Cooperation (we value teamwork, collaboration and transdisciplinarity), to Equality (we welcome everyone and value the differences in the pursuit of our goals) and to Ethics (we work for the common good, with respect for our neighbor and integrity). Equal opportunities for leadership should be measured each year, taking into account the different hierarchical levels, the information being widely disseminated so that everyone can be aware of the progress made and so that Embrapa is capable of quickly correcting possible distortions. The promotion of shared responsibility within the home and family still needs to advance, allowing parental care after the birth of daughters and sons to be exercised by both parents and not just by the mother. Support for reforms to give rural women equal rights to economic and natural resources should be strengthened within Embrapa through opportunities and recognition for research, development and innovation (RD&I) projects aimed at this specific audience, in which Information Technology and Communication (ICTs) should be designed to increase women's access to knowledge and information according to their specific demands.

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Chapter 3

Strengthening of the productive inclusion and organization of rural women

Ynaiá Masse Bueno

Renata Zambello de Pinho

Introduction

This chapter addresses the contributions of the Brazilian Agricultural Research Corporation (Embrapa), which supports the realization of reforms to give rural women equal rights of economic resources, as well as access to natural resources, in accordance with national laws (target 5.A). Thus, contributions help end all forms of discrimination against all women (target 5.1) by strengthening national policies to promote gender equality (target 5.C).

Rural women play an important role in peasant and family farming. They are largely responsible for production destined to family self-consumption, agroecological practices and the conservation and reproduction of creole seeds, ensuring adequate environmental management and the quality of life of families. There are more than 14 million women in rural areas, representing 48% of the population in these areas (Políticas..., 2014).

Although they represent almost half of the rural population, women do not have the same rights or the same access to public policies as men. This is due to the fact that different roles have historically been defined for women and men in family dynamics, in which productive work, which produces goods and services with economic value, is carried out by men, and the reproductive work, of maintenance of the conditions of life and care of children and the home is carried out by women (Nobre et al., 2008).

Economic theory, based on the dominant paradigm, makes women and their economic contribution invisible. In the case of rural women, this is evident when the work they do in gardens, backyards and animal husbandry is neither recognized nor valued. In order to reverse this process of women's invisibility, it is necessary to build proposals based on another paradigm that values their knowledge and work and strengthens their social and productive organization.

To that end, it is essential to expand training and capacity building in several areas of knowledge, to create and strengthen specific public policies for women, and to develop new “methodologies and indicators that are not based solely on the male universe” (Nobre et al., 2008, p. 12, our translation).

The Brazilian State has committed itself to reducing gender inequalities in the country by recognizing the particularities of the rural environment. In order to fulfill its commitments, it is essential that the government advances in strategies that guarantee citizenship, access to land, productive inclusion and effective social participation of women in rural development. Since 2003, a set of policies and programs have been implemented that seek to guarantee rights to citizenship and economic development, as well as to promote the autonomy of the countryside and forests (Butto et al., 2014). Among these initiatives, the Política Nacional de Assistência Técnica e Extensão Rural (National Policy on Technical Assistance and Rural Extension – Pnater) (Política..., 2004), the Plano Nacional de Agroecologia e Produção Orgânica (National Plan for Agroecology and Organic Production – Planapo) (Plano..., 2016), the Plano Nacional de Desenvolvimento Rural Sustentável e Solidário (National Plan for Sustainable and Solidary Rural Development) (Plano..., 2014) and the Programa de Organização Produtiva das Mulheres Rurais (Program for the Productive Organization of Rural Women – POPMR) (Brasil, 2008) stand out as public policies that are directly related to the inclusion and productive organization of rural women.

Considering the importance of Embrapa in the implementation of public policies and international agreements, some initiatives of the Company that sought to value, recognize and strengthen the role of women in productive activities will be considered.

Embrapa’s initiatives for strengthening productive inclusion and organization of rural women

Embrapa’s main strategy for working with its external audience is through research projects and technology transfer. The projects have contemplated some initiatives aimed at rural women, which are related, for the most part, to training actions, installation of production units and productive organization.

Some projects implemented by Embrapa promoted events, such as field days, courses, seminars and training, for the sensibilization and empowerment of women. Some of these events were organized specifically for the female audience,

and others were open to all audiences but had a significant participation of women. These training actions involved both young and old women, from several categories of public, such as indigenous, traditional riverine people, *quilombolas*¹, family farmers, agrarian reform settlers and creole seeds guardians. The main themes were related to: sustainable production systems, agroecological practices, small animal breeding, medicinal plants, processing and aggregation of value, food and nutrition, agrobiodiversity, food and nutritional security and handcrafting.

More specifically, the Valorização da Agricultura Indígena (Valorization of Indigenous Agriculture) program promoted some training actions for young indigenous women in sustainable technologies for family farming, starting with the installation of four production units, one with agroecological production of vegetables and fruit trees, another with seedlings production, a third one with fish farming and a last one with small animal breeding. This initiative aimed to help diversify production and increase the quantity and quality of food consumed by communities, as well as contribute to generation of income and increase of self-esteem of indigenous women. Each production unit was led by a group of six women and functioned as the technology radiator pole and, in the case of those with plant species, as multiplier units of creole seeds. Despite the challenges caused by cultural differences, placing indigenous women as unit managers was an assertive strategy to ensure the implementation and maintenance of activities.

The Inserção e Capacitação da Mulher em Atividades da Agricultura Familiar em Municípios do Território do Sertão do São Francisco (Inserting and Training Women in Family Farming Activities in Municipalities of Sertão do São Francisco Territory) project, which was coordinated by the Federal University of Vale do São Francisco in partnership with Embrapa, promoted training in meliponic culture for a group of women and provided some inputs so that they could begin their productive activities. For each benefited woman were delivered 20 hives, 10 with stingless bees and 10 with stinging bees, as well as the necessary accessories such as overalls, gloves, boots, smoker, honeycomb wax and support of hives. Beekeeping enables women to diversify their income and contribute to the provision of their families, thereby reducing gender inequalities.

¹ Translation note: *Quilombola* communities are ethnic groups, predominantly made up of the rural or urban black population, who define themselves based on their specific relationships with their own land, kinship, territory, ancestry, traditions and cultural practices. (Inkra, 2020).

The installation of vegetable gardens as a complementary strategy to training actions in techniques for cultivation, conservation, use, processing and manipulation of medicinal plants allowed *quilombola* and traditional riverine women in the Amazon to start commercializing anti-inflammatory ointment, andiroba oil and beauty products which generated net income of up to two minimum wages. In addition, the possibility of commercialization of the products generated the creation of a productive organization involving traditional riverine people, *quilombolas* and communities of the urban periphery.

Given the economic and social importance of artisanal curd cheese production for women, Embrapa promoted several trainings in Maranhão and Piauí states, to technically orient women farmers to obtain a standardized product, with quality and safety, aiming at the aggregation of value to the product and the achievement of new markets. This initiative contributed to the generation of income and the increase of women's quality of life, favoring their permanence in the field.

Several home baking courses were held for the women of the Federação dos Trabalhadores e Trabalhadoras na Agricultura Familiar (Federation of Workers in Family Farming – Fetraf), in the South of Brazil, with the aim of qualifying women in the manufacture of wheat products to be traded in the local market or offered in school meals, adding value and income to family farming products. In addition, the courses provided knowledge and practice about healthy and nutritious food, with an impact on the food and nutritional security of families.

Embrapa also collaborated with actions aimed at rescuing the traditional practice of cassava flour production, which descends from the indigenous culture, through articulation with traditional communities of Ceará and the indigenous Kayapó people in Mato Grosso. The actions valorized women's work through the resumption of cassava harvesting, artisanal flour production and traditional practices, adding value to the product.

Participatory breeding trials were done with selected corn varieties in the Embrapa germplasm bank, that presented specific productivity characteristics, but also straw type and color, to meet the needs of artisan women in Diamantina, MG, who use straw corn for making dolls, flowers, benches, baskets, among other products. From this effort, the artisan women began to use straws with more appropriate texture and naturally colored in their products. The development of these varieties contributed to increase the income of the families, enabled an economic activity carried out by women and provided the improvement in communities' quality of life.

Related to the conservation and sustainable use of agrobiodiversity, several meetings and training processes were carried out in the South and Southeast regions, to share knowledge between male and female researchers and the male and female seeds guardians. Although these meetings did not have a specific approach for women, their participation was quite expressive, evidencing the importance of rural women in the rescue and conservation of creole seeds and, consequently, in the food and nutritional security of the families.

An action designed specifically for women involves a project that has been developed with the *quebradeiras de coco babaçu* (female babassu coconut breakers) in Maranhão, which initially sought to promote improvement in the babassu productive chain; identify and propose improvements/ adjustments in the agricultural and extractive production system; optimize the productive areas and expand the processing of babassu pulp; and strengthen the organization of female babassu coconut breakers. Because it is a social group recognized as a traditional community, it was necessary to obtain consent from the communities involved to access traditional knowledge that has interface with the actions proposed in the project. In the course of the study, the communities concluded that the genetic improvement of babassu, proposed by the project, would not be interesting, since it would put at risk the traditional extractive management practices of babassu, and this action was canceled. From this, Embrapa decided to adopt a

[...] methodological approach that privileges the participation and the protagonism of traditional communities in the definition of research priorities, knowledge construction and transfer of technologies to meet local and regional demands. (Cavallari et al., 2016, p. 342, our translation).

This experience brought a great learning about the importance of the adequacy of the methodological approach with the public involved, in this case proposing activities that meet the specific demands of female babassu coconut breakers.

The growth of women's presence in food production and marketing may be a trend that needs to be better measured. Embrapa carried out a study to identify gaps in the production systems and commercialization of agroecological products and found that women have been gaining a prominent role in the agroecological fairs of the Distrito Federal.

Final considerations

Considering the vision of Embrapa, which is to be a world reference in the generation and provision of information, knowledge and technologies for innovation and the sustainability of agriculture and food security, the mentioned initiatives are examples of its contribution to the strengthening of productive activities of rural women, recognizing and valuing their knowledge and their protagonism. The Company, being present throughout the national territory and having a diverse and multidisciplinary functional framework, presents an enormous potential to effectively contribute to the strengthening of the productive inclusion and organization of rural women, promoting their economic and social autonomy in the different Brazilian regions and, consequently, food security in the country. These efforts also have a direct impact on SDG 1 (No Poverty), especially in relation to target 1.B, which mentions pro-poor and gender-sensitive development strategies; and SDG 2 (Zero Hunger), especially in relation to target 2.3, which is to double by 2030 the agricultural productivity and income of small-scale food producers, particularly of women, indigenous peoples, family farmers, shepherds and shepherdesses, fishermen and fisherwomen, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value added and non-agricultural employment.

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Chapter 4

Access to natural resources – strengthening of mangaba gatherer women in Brazil¹

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Josué Francisco da Silva Junior

Raquel Fernandes de Araújo Rodrigues

Introduction

Accessing and controlling natural resources, including water, flora and fauna, is particularly important for women in the countryside and in the forest, indigenous women, *quilombolas* and other traditional communities. In this sense, this chapter will address the contributions of the Brazilian Agricultural Research Corporation (Embrapa), which work to grant recognition and equal rights to female rural workers, especially extractive workers, in accordance with national laws (target 5.A). In this manner, research and development activities contribute to ending the different forms of discrimination against women (target 5.1) through strengthening national policies to promote gender equality (target 5.C).

The work presented is a result of the accumulation of 15 years of research and development carried out by Embrapa and partners in Brazil, from an inter-institutional and interdisciplinary team composed of committed professionals, both with the production of knowledge about traditional communities in situations of economic vulnerability and with the conservation of biodiversity, especially natural areas of mangaba tree occurrence (*Hancornia speciosa* Gomes). Mangaba is a native Brazilian tree whose fruit has great aroma and flavor, being used especially in the production of juice, ice cream and sweets. As such, the objective of the work was to trace the trajectory of studies and actions aimed at

¹ The research that gave rise to the results presented in this chapter have been carried out over the years in partnership with several institutions and people outside the framework of Embrapa. The role of Professor Heribert Schmitz of the Federal University of Pará (UFPA) and the agronomist Emanuel Pereira Oliveira of the Institute of Colonization and Agrarian Reform (Incra) in Sergipe should be highlighted. They are authors of various papers and chapters and coordinated important stages of the work, without which the understanding of the binomial conservation of natural resources vs. traditional communities could not be achieved.

improving the conditions of life and gender equality by supporting the political action of women extractivists of mangaba.

Due to the importance and preservation of the stages and habits of fruit collection and consumption, as well as the conservation of mangaba tree remnants, the coast of Sergipe and a region of the Extractive Reserve (Resex) of Maracanã, Pará, were the targets of the most complete studies. The dialogue with representatives of public and private institutions directly involved with the subject of mangaba extractivism occurred in parallel with the research efforts. Methods of the social and natural sciences were mixed in order to constitute a set of data in the institutions through the specificity of extractivism and the pluriactivity of those who practice it.

Taking into account the problem of extractivism carried out by women, five lines of study and intervention were defined within the scope of institutional action, namely: 1) characterization of women; 2) in situ conservation of genetic resources; 3) collective action and recognition; 4) access to public policies; and 5) socialization and exchanges, as described as follows.

Characterization of extractivism and mangaba gatherer women

Mangaba extractivism is predominantly carried out by women who live in mangaba trees occurrence areas in the Coastal Shore, Coastal Tablelands and *Cerrado* of Brazil. However, these women do not have guaranteed access to resources and alternate between different activities according to the environmental offer. They accumulate great wisdom regarding the natural resources they manage and are, admittedly, responsible for the conservation of biodiversity in the areas where they live.

The recent changes in land use and the disorderly occupation of the regions where they live have reduced the work space of these women, due to the opening of paved roads and bridges; tourism and leisure activities; expansion of urbanization and agriculture. Shrimp farming, real estate tourism, eucalyptus plantations and the promotion of agrofuel-producing plants, especially sugarcane, are also risks to the conservation of the natural resources on which they depend to survive. The valorization and privatization of the land makes extractive women even more vulnerable, meaning, in many cases, the expulsion from the places where they traditionally worked and lived.

Investments were made by the authors to produce a set of data and knowledge about the extractivists. Approximately 300 people were interviewed to characterize these women. At the same time, subsidies were built and actions were taken to support their participation in forums that bring together traditional peoples and communities, guarantee access to public policies and recognition actions. By means of a request from the Federal Prosecution Service (MPF), studies and mappings on extractivism were carried out to demonstrate the situation of access to resources and the conservation level.

In situ conservation of mangaba trees genetic resources

The mangaba tree is an important component in maintaining the sustainability of the ecosystems where it occurs, and its conservation is closely related to the traditional communities that use their fruit in the harvest season as a source of income. In situ conservation, that is, the conservation of the plants in their places of origin and the germplasm of the mangaba tree by the extractivists is an efficient alternative of conservation of genetic resources, since these traditional communities depend on the maintenance of this resource for their survival, both in private areas and in areas of common access.

In this sense, 227 natural areas of mangaba tree occurrence and more than 170 mangaba tree extractive communities in Brazil (Northeast, Minas Gerais, Tocantins, Goiás and Pará states) were identified, mapped and georeferenced, as well as the threats to these remnants. In Sergipe, two detailed mappings of natural areas and communities were made in 2009 and 2016, identifying 222 natural areas, which occupy 34,033 ha and 64 mangaba collecting communities (Vieira et al., 2009; Rodrigues et al., 2017).

The knowledge of the extractivist ways of life allowed the understanding of its relations with the environment and other actors and in common agreement with the communities; different types of intervention for conservation and access to natural areas were carried out. A set of good practices for in situ conservation of resources was also generated by the mangaba collecting communities in conjunction with researchers and involved management practices in natural areas, in private and post-harvest areas (Silva Júnior et al., 2016).

Collective action and recognition

The studies on collective action began with the mobilization for the *Meeting of Female Mangaba Collectors* in 2007, in Aracaju, SE. From this event, there was an investment both in the support to the political organization of gatherer women to make themselves recognized, as well as in relation to the written and photographic record of the different events. Sequentially, both the problem of conflicts to access resources and mobilization initiatives and the management of natural resources were studied.

With regard to the forms of resource management, the modes of access to resources were identified, namely: extractivism in areas of free access; extractivism in private areas with restricted access; extractivism in private areas by the rural partnership namely *meia*²; extractivism in own private areas; and extractivism in community-owned areas (Mota et al., 2011).

The issue of the political mobilization of the extractivists privileged the experience of Sergipe, considering that there was an emergence of an exclusive social movement of women extractivist of mangaba in 2007, with the foundation of the *Movement of the Female Collectors of Mangaba* (MCM). In this process, an important fact was the achievement of a collective identity of female mangaba collectors who provided recognition for themselves and for others. The conditions for the creation of the movement, the political opportunities, the purposes, the strategies of action and the modes of mobilization were at the center of the analyzes and persisted until 2017.

Since 2007, extractive women from Sergipe have been mobilized with the support of public and private actors and have conquered different initiatives specific to them, among which the recognition by Law 7.082, of December 16, 2010, that recognizes them as culturally differentiated, accessing the Programa de Aquisição de Alimentos (Food Acquisition Program – PAA), adding value to mangaba by the manufacture of sweets, candies and biscuits, and founding of associations and construction of fruit processors.

Access to public policies

The relationship between female mangaba extractivists and public policies was analyzed from an objective and subjective perspective, with emphasis on the

² One provides the means of production, and the other employs his/her workforce and both share the profits and losses resulting from the partnership contract.

predominant access to the Bolsa Família Program (PBF) and Seguro Desemprego do Pescador Artesanal (Unemployment Insurance of the Artisanal Fisherman – SDPA), the latter, due to the fact that they are also shellfisherwomen (Mota et al., 2014a).

Particularity should be attributed to the participation of a small group of extractivists in the PAA, the first experience of commercialization of mangaba in a collective and institutionalized manner (Brasil, 2003).

Regarding the organization of work in the perspective of gender equality, the main conclusions of this work have shown that public policy programs influence: a) the reorganization of daily work in extractivism, especially with regard to the reduction of the involvement of children and young people in the activity and the intensity of the work; b) strengthening the traditional roles of men in the public sphere and women in the domestic sphere, in the case of the BFP, and in diluting the boundaries between these roles in the PAA; c) the reduction of the workload in the case of SDPA and in the increase of the work in the PAA; and d) the different senses that are attributed to the work (Mota et al., 2014b). In the data of 2017, no group of extractivists participated in the PAA. The causes presented by them are related to excessive bureaucracy.

Different groups of extractivists have provided products derived from mangaba to the Programa Nacional de Alimentação Escolar (National School Feeding Program – PNAE). However, the bureaucratic difficulties of regularizing and accessing the program and irregular participation mean that a small number have access to this policy.

More recently, the actions related to the demarcation of an extractive reserve conservation unit on the southern coast of Sergipe have relied on the attention of researchers of the team through the provision of data and information on extractivists and natural resources, as well as their participation in the interinstitutional debate to seek alternative public policies to guarantee access to plants by those who use them traditionally.

One of the most outstanding achievements of the work of researchers in partnership with MCM and politicians linked to social groups was the creation of State Law 7.082 of December 16, 2010, which recognizes the Sergipe female mangaba tree extractivists as a culturally differentiated group.

Socialization and exchange between gatherer women

The events of socialization, training and exchanges between mangaba gatherer women began in Sergipe in 2007, the mobilization of which was carried out by Embrapa and partners with the *I Meeting of Female Mangaba Collectors of Sergipe*, when, for the first time in the history of this traditional group, their problems and outlined actions for the mobilization in defense of their ways of life and knowledge and, consequently, of the conservation of the mangaba trees and of the biodiversity were discussed. The meeting was attended by a representative of the Movimento Interestadual das Quebradeiras de Coco-Babaçu do Maranhão, Pará, Piauí e Tocantins (Interstate Movement of Female Coco-Babassu Breakers of Maranhão, Pará, Piauí and Tocantins – MIQCB). At the time, a committee was created that originated the current formation of the MCM.

In March 2008, exchanges were provided in three municipalities in the state of Sergipe to provide the exchange of experience among the collectors about the daily work of extractivism, as well as the survey of local problems faced with possible solutions alternatives. Also in 2008, the mangaba collectors started attending forums of technical-scientific discussions of national scope, like the *VII Simpósio Brasileiro de Etnobiologia e Etnoecologia (VII Brazilian Symposium on Ethnobiology and Ethnoecology)*, in Belém, PA.

In April 2009, the *II Encontro das Catadoras de Mangaba de Sergipe (II Meeting of Female Mangaba Collectors of Sergipe)* took place. The objective of this meeting was to analyze the main achievements and obstacles faced by the MCM from its creation. In that same year, an exchange took place between the mangaba collectors of Sergipe and the women from the north of Minas Gerais, in Rio Pardo de Minas; and the participation of these women in the Seminar on *Conquistas, Demandas e Experiências do Extrativismo em Sergipe e Norte de Minas Gerais (Achievements, Demands and Experiences of Extractivism in Sergipe and North of Minas Gerais)*, promoted by the United Nations Development Program (UNDP) in Brasília.

Between 2013 and 2014, exchanges were also carried out between the mangaba tree collectors of Pará and Sergipe, one of them in the Resex Marinha region of Maracanã, PA, and others in the municipalities of Indiaroba and Barra dos Coqueiros, SE. The aim of the exchanges was to share experiences and draw up a common platform for action to reinforce the status of extractivists.

In addition, Embrapa and partners have been supporting gatherer women in the process of political mobilization in the last 10 years to guarantee access to the areas in which they practice extractivism, by providing information on their relationships with different institutions through the Comissão Nacional de Desenvolvimento Sustentável dos Povos e Comunidades Tradicionais (National Committee of Sustainable Development of Traditional Peoples and Communities – CNPCT), chaired by the Ministry of Social and Agrarian Development (MDSA); Comissão Mista Intersectorial do Plano Nacional para Fortalecimento das Comunidades Extrativistas e Ribeirinhas (Mixed Inter-Sectoral Committee of the National Plan for the Strengthening of Extractivist and Riverside Communities – Planafe); and the Comissão Nacional de Fortalecimento das Reservas Extrativistas e dos Povos Extrativistas Costeiros e Marinho (National Committee for the Strengthening of Extractivist Reserves and Coastal and Marine Extractivist Peoples – Confrem).

Final considerations

Research and development work by Embrapa and partners in Brazil lasting almost 2 decades to strengthen the condition of mangaba gatherer women presents the difficulties of social reproduction of groups that depend on access to natural resources to survive in a context of increasing privatization, and access to public policies. This situation implies challenges that involve the recognition of the importance of these groups as holders of knowledge and practices essential to the in situ conservation of native species and to guarantee their access to natural resources.

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Chapter 5

Multi-connected network involving women in agriculture in South Amazon for food sovereignty

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Introduction

This chapter presents the contributions of the Brazilian Agricultural Research Corporation (Embrapa), in partnership with other institutions, involving women in agriculture in the south of the Amazon, in order to achieve the following actions: end all forms of discrimination against women and girls everywhere (target 5.1) and undertake reforms to give women equal rights to economic resources (target 5.A).

The construction of food sovereignty and the defense of biodiversity is a task that requires a determined action, in which the protection and conservation of life and nature are inserted, a work predominantly developed by women. With this work, they sustain human life by ensuring the supply of food and water, and it is the women who suffer the most the destruction of forest ecosystems.

Women from the region of Ouro Preto do Oeste, RO, after conversion to organic farming, began to produce food by diversifying production, preserving biodiversity and generating family income, whose practices were based on the use, management and sustainable land management. This was done through actions of non-governmental organizations (NGOs), the state of Rondônia, the federal government and Embrapa, through the Programa de Desenvolvimento Socioambiental da Produção Familiar Rural (Socioenvironmental Development Program for Rural Family Production – Proambiente).

In this context, the knowledge, use and redefinition of traditional and modern practices of ecological nature, processes of value added to production and rescue of local gastronomy are inserted. The actions of Embrapa in articulation with other institutions contributed to give visibility, to re-signify agricultural practices and products through the exchange of knowledge on ecologically based transition processes, adding value to production and inserting it into different modalities of short circuits.

This is a summary of the broad set of activities developed by Embrapa Environment in the context of the Proambiente project, whose actions were articulated and operationalized based on multiple interactions with municipal, state and federal institutions. In 2005, the first activities were developed in partnership with Embrapa Eastern Amazon and then in interaction with colleagues from Embrapa Acre and Embrapa Rondônia, linked to agronomy and rural sociology; and in 2014 the information was complemented (Abreu; Watanabe, 2016).

The research supported public policies and gave visibility to the original experience of the women's group, besides generating knowledge for the formulation of new public policies for its strengthening.

Research articulated with pro-environment public policy

The experience of building the food sovereignty of this group of women is largely due to the impact of Proambiente's public policy actions. The idea was born in 1999 from the need to elaborate new models of technical and credit assistance for family farming in the Amazon and the interest to overcome the dichotomy between rural production and environmental conservation. The protagonists of this discussion were organizations of social movements: Federação dos Trabalhadores na Agricultura (Federation of Agricultural Workers – Fetags), Confederação Nacional dos Trabalhadores na Agricultura (National Confederation of Agricultural Workers – Contag), among others. They also counted with the contribution of NGOs: Federação de Órgãos para Assistência Social e Educacional (Federation of Agencies for Social and Educational Assistance – Fase) and Instituto de Pesquisa Ambiental da Amazônia (Institute of Environmental Research of the Amazon – Ipam). The governmental program stimulated, among other objectives, the use of conservation practices in several poles of development of the Amazon region. From 2005, it was Embrapa Environment's team – one of the arms of Proambiente research – that carried out the social diagnosis of environmental perception, in areas of production systems in ecological transition in the region of Ouro Preto do Oeste, RO.

This diagnosis identified the new role of women as a result of the transition stimulated by this governmental program, which led to the continuity of research and development in the region, in order to understand the role of women in relation to food production. In summary, the dialogue with the group led to

the identification of obstacles and the proposal for multiple improvements in transition processes, value added and alternative markets. In this chapter, the context of the activities developed will be detailed.

Context of activities developed by women in agriculture

The municipality of Ouro Preto do Oeste is located in the central region of the state of Rondônia, in the South of the Brazilian Amazon. Since the beginning of its colonization (creation of the Integrated Colonization Project in the 1970s), women faced a serious challenge to their survival, which was to obtain food in quantity and quality for consumption.

With the initial support of NGOs and the Catholic Church in the late 1990s, women and their families established the Association of Alternative Producers (APA), which provided support for the organization on marketing of production in the international market. For some years, this strategy was successful; but in 2007 there was a crisis of administrative impropriety, and APA filed for bankruptcy. Women farmers began to process fruit in the family's own production unit, with the aim of selling them in fairs, markets and nearby markets, in Rio Branco, AC, and Manaus, AM.

As of the progress of the Proambiente project activities, Embrapa was instrumental in contributing to the articulation and integration of different sectoral support (environmental, agricultural, training/trade, extension, markets) and put the aspirations of APA producers in evidence. A wide diversity of food products from agroforestry yards was identified, such as vegetables (22 species), fruits in orchards (26 species), annual crops (rice, beans, corn and cassava), agroforestry systems (coffee, cocoa, cupuaçu, pupunha palm), breeding of poultry (meat and eggs, involving chickens, ducks, turkeys and quail), breeding of pigs (meat), breeding of cattle (milk, cheese, meat) and fish farming (fish meat, such as tambaqui, pacu and tilapia).

Watanabe and Abreu (2010) emphasized the importance of the diversity of products in household food, a theme that integrates the object of the authors' research, and they demonstrate through this case study that the concept of food security transcends respect for the concern with basic quantities of food per capita – including other aspects of the choice of production systems and the quality and variety of foods to be produced, consumed and marketed.

Institutional action in multi-connected network

The methodology of the Proambiente project led to the implementation of systemic actions and articulated with other sectoral policies of the federal government. This project provided for the creation of dialogues and multiple interactions between agricultural and rural development institutions and civil society, especially among the APA women's group, the Empresa de Assistência Técnica e Extensão Rural (Technical Assistance and Rural Extension Company – Emater/RO), the Brazilian Service of Support to Micro Businesses (Sebrae/RO), Embrapa Rondônia and Embrapa Acre (Abreu; Watanabe, 2016).

Embrapa generated social and agricultural knowledge, pointing out the main challenges posed by the experience of women farmers, whose results were socialized in the processes of discussion of Proambiente's sustainable development policy in partnership with other institutions. Through the exchange and dialogue with local actors (where women occupy relevant space), the goal was to establish improvements in agroforestry yards, in the processing of juices, pulps, jellies, sweets, liqueurs, honey and marketing systems.

One of the strategies of the women was to seek the Companhia Nacional de Abastecimento (National Supply Company – Conab) to market fruits and vegetables to meet PAA goals. For the production of vegetables, chicken meat and eggs for sale to Conab, the farmers adopted a system of production called integrated and sustainable agroecological production.

Final considerations

Embrapa's actions gave visibility to female farmers' practices, their perceptions and interests, qualifying the ways they relate to the natural environment and how they organize the production, exploitation and management of the territories. Highlighting the relevance of certain productive practices and supporting the establishment of strategies aimed at local sustainable development, Embrapa, from its technical staff, supported the strengthening of these women.

Currently the institutions involved are articulated in a socio-technical network. The challenge is that rural extension services for ecologically based agriculture, especially for the olericulture and fruit growing, will be improved and aligned with the demands of women farmers.

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Chapter 6

Strategic role of communication for women visibility

Valéria Cristina Costa

Introduction

This chapter presents actions of the Brazilian Agricultural Research Corporation (Embrapa), which contribute to three targets, aimed at ending all forms of discrimination against all women and girls everywhere (target 5.1), the use of enabling technology, in particular information and communication technology and, to promote the empowerment of women (target 5.B) and to the adoption and strengthening of sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels (target 5.C).

The reflection on the strategic role of communication in women's visibility was made through the presentation of actions carried out by professionals from the area at Embrapa, in partnership with the Department of People Management (DGP), and in favor of institutional dialogue with segments of the countryside in which they are inserted. As the initiatives necessarily turn to the internal audiences of the organization, we begin by describing the background or organizational culture based on how the strategies are drawn.

Background

The historical context of creation of Embrapa is still inscribed in the company's organizational culture, which, born during the military regime, maintained a hierarchical structure. The activity of the institution is based especially on agronomy, historically marked by the masculine.

In 1973, the year Embrapa was created, the increase in agricultural production was aimed at the foreign market, in particular. The new production processes required the hiring of technically qualified labor also in the private sector – Embrapa's professional contacts who provided from abroad the innovations that needed to be adopted to increase the production of commodities. For this task, agronomists and economists have joined becoming communicators in the dissemination of new technologies.

The communication area of Embrapa was therefore conceived as part of this gear and in close relation with the broadcasting service. Its model still gains expression in the discourse and in the communication practices of the Institution (Beltrão, 2010; Silva, 2013), naturalized in strategies that continue to replicate the hegemonic discourse of productivity and of the formal labor market – from which the majority of rural women are excluded (Butto, 2009).

Such practices, being very clear, are based on a positivist view of science and emphasize results rather than processes. Those who act in the transfer of technology or in scientific diffusion based on the deficit and diffusionist models speak 'to' and 'by' and stop talking 'with'. The deficit model advocates that the information gap of lay people with respect to science must be met through scientific literacy, and conceives "the public as a homogeneous and passive mass" (Silveira; Sandrini, 2013). The repercussions are not positive for rural women's access to agricultural research (Costa, 2017).

The assertiveness, therefore, that communication professionals interact with segments of the agribusiness, through mass communication media, will also need to take place in the dialogue with the collectives of indigenous women, *quilombolas* and extractivists, for example, who act in another logic. A task whose effort begins to materialize in the institutional practices of communication, as will be described as follows.

Women and media

The inequalities that characterize the situation of women in Brazilian society, regardless of the segment in which they are inserted, feed on silence (and silencing) in its various facets, translated into invisibility.

In the countryside, women account for almost half of the workforce, according to the [Atlas de las mujeres rurales de América Latina y el Caribe](#) (Nobre; Hora, 2017), but they have only 2% of arable land (Daller; Moreira, 2009). Unpaid work still predominates among rural women and, when employed, they earn less than men, especially black women.

In science, they have already reached the mark of 49% of the total number of male and female researchers in Brazil, according to the [Gender in the global research landscape](#) study, by Editora Elsevier (Allagnat et al., 2017). But they are still a minority in management positions confirming the persistence of inequalities in promotion and recognition, in authorship and contracting. The study compares

data from 20 countries and analyzes the scientific performance with a gender cut between 1996 and 2015 (Allagnat et al., 2017).

The strategic importance of communication professionals as opinion makers, in a context of necessary changes in the national culture – sedimented in the patriarchy of a slave past – has motivated entities representing journalists to promote debates and actions to raise awareness of the category for valuation issues of ethnic-racial diversity, and gender equality in the media.

There is a trend in the world press for attention to respect and to correct the treatment of diversity. An example of this effort is the new version of the [The diversity style guide](#), from the San Francisco State University (Kanigel et al., 2016). In Brazil, since 2009, [Patrícia Galvão Agency](#) monitors the treatment given by the national media to diversity, especially women's rights, and influences editorial behavior through the suggestion of guidelines on the subject. [Geledés](#), the Institute of Black Women, created in 1988, is dedicated to racial and gender issues in the area of communication. At Embrapa, a workshop on the subject sought to involve the segment as described below.

The necessary alignment between internal and external communication

Communication professionals integrate the role of strategic partners of the Gender and Race Pro-Equality Program in the search for greater visibility of gender issues. Because they are opinion formers, communicators must pass through an awareness process to assist in the change of organizational culture, collaborating in the preparation of the internal audience for the proper relationship of the Institution with its external audiences in this particular. Embrapa's efforts in guiding care in the representation of gender, race and diversity in its media, as will be presented, are noteworthy.

Gender, Race, Diversity and Media Workshop

Embrapa, in 2015, based on the corporate coordination of the Programa Pró-Equidade de Gênero, Raça e Diversidade (Gender, Race and Diversity Pro-Equality Program), decided to work with the communication sector, considered as strategic within the scope of the program's objectives. The first edition of the workshop sought the involvement of communicators from the analysis of their own daily

practice in the elaboration of scripts for television and radio programs. In this period, the evaluation of pieces of communication pointed to a discourse that still endorsed stereotypes, revealed, for example, in the choice of sex and physical type to represent agricultural research (Figure 1A) and the sectors benefiting from social actions of the Institution (Figure 1B).



Figure 1. Images taken from the [Embrapa Portal](#) on the Internet (A) and from the cover of the [Company's Social Accounting](#) (B).

The pertinence of the alignment of internal and external communication strategies in the representation of gender, race and ethnicity was evidenced, as well as the need to redouble our efforts so that Embrapa could contribute effectively to the defense and strengthening of women and black people, groups attentive to the violation of their rights in and by the vehicles of communication.

Booklet of Guidelines for the representation of gender, race and diversity in the media of Embrapa

The production of an instrument guiding the practices of inclusive communication was suggested by workshop participants and resulted in the preparation of the booklet [Guidelines for the representation of gender, race and diversity in the media of Embrapa](#): support to the process of construction of internal and external communication strategies (visual, oral and written languages) (Figure 2). The publication, authored by the corporate coordination of Embrapa's Gender, Race and Diversity Pro-Equality Program, in partnership with its Communication Division, was based on recommendations made during the workshop.

The *Color Self-Declaration Campaign*, also aimed at the internal public, sought to measure the diversity of employees of the Institution, an action that follows the growing demand for the mapping of diversity in companies and public institutions



Figure 2. Cover of the booklet Guidelines for representation of gender, race and diversity in the media of Embrapa.

Source: Somos... (2015).

for the purpose of implementing specific policies. The lack of statistics involving minority segments keeps inequalities hidden and consequently also their impact. Hence Embrapa's investment in the production of statistics that dimension the inequalities of gender, race and ethnicity within the Company. In 2013, the *Color Self-Declaration Campaign* (Figure 3) was conceived by professionals from the then Embrapa Secretariat of Communication and was supported by the institutional coordination of Embrapa's Gender, Race and Diversity Pro-Equality Program. Posters produced with the staff and associated with Brazilian biodiversity portrayed the diversity of race, gender, career, age and regions of Brazil within the Company's staff.



Figure 3. Poster reproduction of the Color Self-Declaration Campaign.

Source: Somos... (2015).

The action can be pointed out as responsible for the significant increase in the percentage of self-declared black women and men in the functional group, which was 3,103 (without self-declaration of color) in 2014, to 3,947 (40.5% with self-declaration of color) in the following year, according to figures in the social report of 2015. The document showed a total of 9,733 employees, of which 2,948 (30.3%) were women, which shows that these two groups (black people and women) are still minority at Embrapa. It should also be noted that, in that same year, black people and women had occupancy rates in managerial positions of 33.4% and 30.2%, respectively. Although the percentage of women in command positions is equivalent to their percentage in the Company, as the positions approach the top management the presence decreases, as shown by data from the Human

Resources System (HRIS) of July 2015, released in an [institutional folder](#) produced by Embrapa Gender, Race and Diversity Pro-Equality Program (Table 1).

Table 1. Occupation of management positions by gender at Embrapa, in 2015.

Position in committee/position of trust	Quantity of management positions	Positions held by women at each management level (%)	Positions held by men at each management level (%)
Supervision	802	33	67
Coordination / Advisory / Internal Consulting / Executive Secretariat	76	38	62
Deputy Management	134	26	74
General-Management/ Ombudsman's Office	78	14	86
Presidency/Board of Directors	4	25	75
Total	1.094	31	69

Source: Somos... (2015).

Audio program *Nossas Vozes – sintonia entre mulheres e homens*

The audio podcast [Nossas Vozes – sintonia entre mulheres e homens](#) [Our Voices – synchrony between women and men], a podcast made available on Embrapa's website (Figure 4) (Costa, 2008), was a communication initiative specifically aimed at promoting gender equality and included in the Gender, Race and Diversity Pro-Equality Program action plan, having been produced between 2008 and 2011 to face the challenge of changes in the institutional culture through qualified information and thought from the socio-cultural perspective. At the same time, the program reached the internal and external audiences, training them for a relationship respectful for diversity.

In its 15 minutes, in addition to good practice and cultural tips, the program provided interviews with specialists on moral and sexual harassment; woman and science; innovation and creativity; trade union organizations; women in charge; equality policies at work; and the balance between professional, personal and family life; among others.



Figure 4. Logo of the podcast Nossas Vozes.

Source: Somos... (2015).

Dia de Campo na TV – changes pro-diversity

Embrapa's television program, [Dia de Campo na TV](#) (Field Day on TV – DCTV) (Figure 5), is 20 years old and is currently broadcast by three national broadcasters – Canal Rural, NBR and TV Câmara – and other regional broadcasters. By satellite, in 2013, the DCTV reached 5.74 million viewers or 3% of the national population, according to research conducted at the time. A weekly program is that covers all areas in which Embrapa operates and is produced by journalists from the research centers and the staff in Brasília, DF. As of early January 2018, there were 30,044 people subscribed to the program channel on YouTube.

DCTV was the target of a master's degree research, done with support from Embrapa, which investigated whether and how the invisibility of rural women gained expression within the Company's communication (Costa, 2014). The study guided the restructuring of DCTV, which resulted in the creation of blocks that expanded the number of themes broadcast, giving more space to the diversity



Figure 5. Logo of the Embrapa television program.

of voices in the rural world. A way of contextualizing the environment in which Embrapa operates, providing the audience with a certain autonomy in the construction of meanings before the information provided.

[Science & Technology in Debate](#) is one of the blocks in which the program inaugurated the promotion of the debate on scientific activities within the agricultural sector, from its diverse implications. There, Embrapa experts discuss with male and female guests from related institutions and the productive sector, mediated by the host. The space has taken advantage of the International Women's Day to address the issue of the segment, already having discussed [Health of women in the field](#) and [Women and science](#). But March 8 is not the only time that the female protagonist gains prominence in DCTV.

The women were represented in almost all the editions of the block produced between 2016 and 2017. It is worth mentioning the debate on [The importance of science](#) and [Youth and rural succession](#) – in the occasion, the young *quilombola* Maria Helena Serafim represented the women of the Calunga community beside the Embrapa researcher Herbert Lima and anthropologist Elisa Guaraná, from the Federal Rural University of Rio de Janeiro.

Highlighting the work of the Company's female researchers with women from the countryside, DCTV presented the efforts to build the e-book *Women in coffee in Brazil* ([Chapter 7](#)) and the documentary produced from interviews with rural women in this agroindustrial system. The work of Embrapa's research team work with the [Female Mangaba collectors](#) ([Chapter 4](#)) traditional community was also DCTV's main theme in March 2017.

In a testimonial format, the Who wants To Be A Scientist block seeks to give body and soul to the male/female scientist – most of the times perceived only in the male. It is a space that has been used to make the role of women visible in agricultural research and to stimulate other young women to enter the career. Researchers [Mariângela Hungria](#), [Terezinha Dias](#) and [Rose Monnerat](#) participated in the block; they were invited to talk about childhood, going through school life, until becoming scientists, reporting the challenges of reconciling work and family life, sharing dilemmas and career achievements.

Final considerations

In view of the initiatives presented herein – among the list of those carried out by and with communication professionals – we consider that the path is already

underway. The allocation of spaces dedicated to the strengthening of gender issues in institutional communication vehicles, such as Field Day on TV, is an initiative that needs to be replicated. However, a guide for journalists should be drawn up to facilitate the identification of researchers and techniques as sources for the press. Another desirable initiative when signing contracts of any order would be to indicate the minimum parameters of respect for diversity within the partnership. The historical contextualization of the period in which Embrapa was created helps to visualize the obstacles that the organizational culture to the present imposes to the task of valuing the diversity of voices and places of speech that compose a public institution of agricultural research, distributed by a continental and plural country. In addition, organizational culture does not move without the support of communicators.

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Chapter 7

Cocreation, validation and feedback: innovation in the e-book *Women in coffee in Brazil*¹

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Helena Maria Ramos Alves

Introduction

This chapter presents actions of Embrapa that contribute especially to two targets: “5.1 End all forms of discrimination against all women and girls everywhere [...] 5.B) Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women” (United Nations, 2020).

During the *International Conference of Coffea Canephora*, in June 2012, in the municipality of Vitória, in the state of Espírito Santo, members of the International Women’s Coffee Alliance (IWCA Brazil) and researchers from Embrapa met to discuss the availability of information on women in coffee in Brazil. Historically, women have always been present in all different sectors of the country’s coffee agroindustrial system, but there was little information about their participation and this contribution was usually invisible.

In 2014, Embrapa Coffee and IWCA Brazil signed a letter of intent to work in partnership, and in April 2016, the first face-to-face meeting was held in Brasília, DF, involving other partner institutions, to begin the collaborative construction of a digital publication, with the aim of taking the first step in the characterization of the reality of women in the agroindustrial system of coffee in Brazil. The following institutions, in addition to the IWCA Brazil and Embrapa, attended the meeting: Instituto Agronômico de Campinas (Agronomic Institute of Campinas – IAC),

¹ We thank Dr. Paulo Sérgio Vilches Fresneda for the important support offered to reach the results through the project Identification, Elaboration and Validation of Instruments to Support the Creation, Sharing and Use of Knowledge in Innovation Networks (I3CRI/CNPq).

Federal University of Viçosa (UFV), Instituto Federal Sudeste de Minas (Southeast Federal Institute of Minas Gerais), Solidaridad Network and Coffee Museum (through videoconference). Other face-to-face and virtual meetings followed, involving at last 21 institutions, which resulted in the collective work *Women in coffee in Brazil* (Arzabe et al., 2017, 2018).

Internally, a partnership was made between Embrapa Coffee and Embrapa Technological Information, taking advantage of the joint efforts of the group that was part of the project Identificação, Elaboração e Validação de Instrumentos de Apoio à Criação, Compartilhamento e Uso de Conhecimentos em Redes de Inovação (Identification, Elaboration and Validation of Instruments to Support the Creation, Sharing and Use of Knowledge in Innovation Networks) (I3CRI/CNPq). The project started in 2014 and had as some of its specific goals: identify, obtain and analyze instruments to support the creation processes, knowledge sharing and use to generate network innovation.

Cooperative e-book

An e-book is an electronic book, a digital media, which can be presented in various formats such as: PDF, Mobi or TXT, among others, but whose standard format adopted by the worldwide publishing market is ePub. ePub is an open format that has as main characteristic the flexibility in the layout, facilitating the reading in different screen sizes, from big monitors to small smartphones. It is the most recent Information and Communication Technology (ICT) used in the Embrapa Publishing House, which started in 2011 to adapt the existing publishing process used to produce printed works to launch this new electronic product. However, as a new product, the editorial process needed a better understanding of what this new technology was and how to use it.

Initially all Embrapa e-books were produced only after the publication of printed material. In 2014, Embrapa began publishing some works only in the ePub electronic format, among them foreign language titles and some collections. With the publication of the digital e-books of the Coleção 500 Perguntas 500 Respostas (500 Questions 500 Answers Collection), in 2014, the first test of interaction with readers was performed. A space was inserted at the end of the e-book for interaction with the readers. In this space the readers could communicate if there were still any doubts about the subject, through Embrapa Citizen Service's (SAC) link (Figure 1).

Any other questions?

If you have any further questions, please contact the Citizen Service at: www.embrapa.br/fale-conosco/sac/

Figure 1. Link in the e-books of Embrapa's 500 Questions 500 Answers Collection.

Thus, the first step was taken to foster the interaction between readers and Embrapa, in the expectation that from this feedback the Company could make future improvements in the products to be launched.

The partnership with IWCA Brazil and several other institutions mobilized the team responsible for testing a new editorial proposal, involving interactions between authors and collaborators before (for co-creation) and after (for verification and feedback) the digital publication release. In the last phase readers were also involved. The process is described as follows.

Cocreation, verification and feedback

The fundamental principle of co-creation, which is to engage people together to create valuable experiences (Ramaswamy; Gouillart, 2010), was put into practice by the team responsible for different tools that were used alternately in face-to-face and virtual meetings involving authors, editorial staff, employees and potential funders.

Planning and Management from the Macro-education (PGMacro) (Hammes; Arzabe, 2016) was the tool used during the face-to-face meetings aimed at co-governing the entire process by the management group, which involved representatives of government agencies and civil society. The method prioritizes heuristic learning, facilitated by visual artifacts that inform systemically and immediately. Visual artifacts, images or prototypes built during in-person interaction processes, such as drawings, maps and diagrams, bridge the gap between people and their ideas and create materiality for joint analysis, one of the distinguishing features of PGMacro, allowing it to be used successfully when there is a large amount of information to be worked on by the team.

For the distance communication between the partners, an online tool was created using the Embrapa Portal infrastructure: Mulheres do Café Network.

Created in 2016 to centralize the exchange of information and files, Mulheres do Café Network offered a blog (for the communication of announcements), forum (for the dialogue between authors on the construction of the book), space for the storage of files (to centralize the exchange of files) and a knowledge base (instrument for the collective construction, proposed for writing the contents of the e-book).

Based on the decisions made in the face-to-face meetings, as well as the material made available in the Mulheres do Café Network, the collective construction of the work *Women in coffee in Brazil* (Arzabe et al., 2017) was carried out, consisting of 17 chapters written by 41 authors from 16 institutions, describing the reality of women involved in the coffee sector in the states of Paraná, Minas Gerais, Espírito Santo, Bahia and Rondônia (Figure 2).

The feedback system for e-books is an online tool that was created in 2017 at Embrapa to assist in the task of verification the e-book *Women in coffee in Brazil*. This verification is done via a link published at the end of the e-book that allows readers to respond to a questionnaire written by authors with questions whose answers can assist in the construction of the second and revised edition of the book.



Figure 2. Cover of the e-book *Women in coffee in Brazil*.

Source: Arzabe et al. (2017).

Thus, the three stages of the collaborative e-book elaboration process of *Women in coffee in Brazil* involved co-creation (with the participation of all partners in defining the content and structure of the book, in face-to-face workshops and participation in an on-line network), the editing of the work and its verification by readers, through an online feedback system (Figure 3).



Figure 3. Stages of the process of elaboration of the collaborative e-book *Women in coffee in Brazil*.

Extending the adoption of strategies for the development of crowd science or citizen science, to value and incorporate external knowledge about processes and phenomena analyzed and/or to validate results and products obtained by research projects, is a factor of importance defined in the document *Visão da Embrapa (Embrapa Vision)* (Embrapa, 2018).

In addition, users are an interesting source of innovation for products and services and can help companies gain competitive advantage by knowing what they are looking for and how products and/or services can be changed to deliver new values (Prahalad; Ramaswamy, 2000; Lee et al., 2012). Thus, the feedback system in the e-book becomes a connecting tool between readers, Embrapa and IWCA Brasil (Figure 4).

The information can be collected in workshops where the e-book is used or readers interested in collaborating can give it spontaneously. The production of a new edition that considers the contributions sent by readers, besides increasing the work, allows a return to those who were interested in participating, closing a virtuous circle. In addition to managing the questions, the system allows the management of users and generates a responsive page (which adapts to small screens) with the book questionnaire.

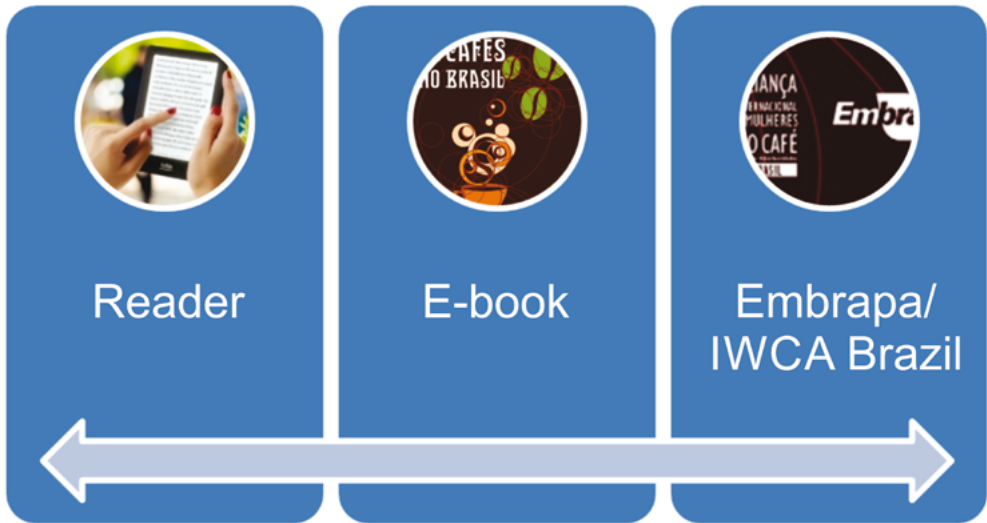


Figure 4. Interrelation between readers and partner institutions through feedback system accessed via e-books.

Final considerations

This experience of constructing a collaborative digital publication that deals with gender allowed involving a large number of women, representing different institutions in the initial phase of the work. The content of the book, which involves the experiences of women who plant, harvest and market coffee in different regions of Brazil, published in the e-book format, free and available on the Internet, increases women's access to information and knowledge, giving visibility to the work and demands of rural women, strengthening them and helping to end all forms of discrimination against women and girls (target 5.1). The feedback system at the end of the e-book opens up an online communication channel that allows readers to contribute new information that will not only improve future editions but can signal new projects that respond more effectively to the demands mentioned. This will increase the use of base technologies, in particular information and communication technologies, to promote the empowerment of women (target 5.B). It is imperative to encourage more and more the development of practices focused on the use of information and communication technology for greater interaction between the urban and the rural spheres, aiming at the strengthening of rural women and gender equality.

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Chapter 8

Challenges and perspectives

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Introduction

Women have a fundamental role in maintaining life and productive activities that promote social equality, environmental justice and sustainable development. Among the challenges faced by them are the invisibility of their work, violence and discrimination in the countryside and institutions, the restriction of access to land and credit, and the difficulty of accessing public policies.

There are numerous initiatives of the Brazilian government to promote gender equality and women's autonomy, culminating in various public policies. However, the cultural and paradigm shift needed to value, recognize and empower women in the countryside, in forests and in cities, requires that these policies be transformed into state policies, so that they continue regardless of those in power.

One issue that deserves to be highlighted in relation to public policies is that often the insertion of this theme occurs in the logic of transversality. This logic allows women to permeate all spheres and initiatives, but in many cases what happens is the inexistence of specific actions that value their protagonism. Thus, it is essential to implement specific public policies, programs and projects for women, which can effectively guarantee their participation in decision-making, strengthening their autonomy and their insertion in productive activities.

Challenges

The feminization of the countryside in Latin America and the Caribbean, as reported by the Food and Agriculture Organization of the United Nations (FAO, 2012), and the increasing importance of rural women's segments for sustainable development indicate the urgency in the preparation of the staff of the Brazilian Agricultural Research Corporation (Embrapa) to act in this new reality. Although there are some research experiences directly with women, recognizing and valuing

their knowledge and their role in productive activities, most of the time women benefit only indirectly. Therefore, institutional strategies that promote research, development and innovation with and for women are necessary, involving the inclusion of this theme in its Master Plan and in other guidance documents.

In order for the gender approach to be incorporated into the institution, it is also necessary to promote changes in the organizational culture. This is a challenge that will hardly be overcome without the involvement of the communication and people management sectors. Awareness strategies and continuous training of Embrapa's professionals in this area will allow them to incorporate this approach in their projects and their actions. These awareness and/or training actions should address the concepts, principles and guidelines already consolidated internationally, in addition to presenting some methods and tools used in work with this specific audience. It is important to promote the exchange of experiences and reflection on the practice and role of women in research, development and innovation (RD&I) activities and productive activities. In this sense, involving the important partners conquered throughout Embrapa's trajectory is fundamental to the achievement of this type of strategy, as well as the integration of Embrapa into forums, networks and media that contemplate the theme.

The creation and structuring of permanent spaces for dialogue between the institution, rural women, their organizations and feminist movements is an essential initiative for the joint elaboration of strategies aimed at strengthening and broadening Embrapa's work with rural women. Creating lines of research on gender, feminist economics, autonomy and productive insertion of women in the public notices and stimulating the articulation of project arrangements focusing on the productive activities of rural women will allow the Embrapa to increase its contribution to the Sustainable Development Goal 5 (SDG 5).

Research and technology transfer actions should be designed with the objective of promoting the economic autonomy of women, as well as strengthening their organization and productive inclusion, giving visibility to the contribution of women to the generation of income of families. To insert this approach in the projects, it is necessary that rural women (indigenous, *quilombolas*, extractivists, farmers, settlers, among others) and their organizations participate effectively in the construction of these projects, so that their demands can be addressed. They also need to be involved in their implementation so that they can contribute to the construction of knowledge and technologies suited to their realities.

Perspectives

In relation to communication actions, the challenge is to give visibility to projects developed with rural women and also those in which female researchers are protagonists. In this case, it is suggested the institutional elaboration of a Guide to Sources with a gender/ethnic cut that can facilitate the diversification of sources to be indicated to the media. The joint effort with the RD&I area can result in facilitating the search for projects aimed at the rural and forest women. To do so, it is necessary to encourage male and female researchers so that project titles or keywords show that activities that directly benefit women or surveys of women's performance are being carried out in their projects, when appropriate.

At the same time, it is necessary to create and/or strengthen the mechanisms to measure aspects related to the opportunities offered to women and men within Embrapa. To ensure a good management of gender equality, opportunities for training, job placement leadership and management, and academic production, among others, should be used to mediate and disseminate progress towards achieving gender equality.

The creation and implementation of various government policies and programs have made many advances in achieving the economic and social autonomy of women. However, there is a need to ensure support budgeting for strategies to maintain, strengthen and complement these initiatives in order to overcome gender inequality and ensure the effective participation of women in the economy and sustainable rural development. Embrapa has a fundamental role in the implementation of these policies, carrying out actions that contribute to the appreciation, recognition and strengthening of the role of women in agricultural production activities.

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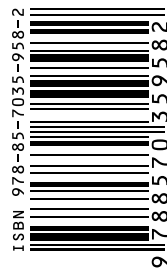
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