

REDUCED INEQUALITIES

CONTRIBUTIONS OF EMBRAPA

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Chapter 2

Research agenda focused on reduced inequalities and social inclusion

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Introduction

Target 10.1 of the Sustainable Development Goal 10 (SDG 10), to reduce inequalities by 2030, seeks to achieve and sustain the income growth of the poorest 40% of the population at a higher rate than the national one. Target 10.2 is about empowering and promoting the social, economic and political inclusion of all, regardless of age, gender, disability, race, ethnicity, origin, region, economic conditions. Target 10.3 seeks to ensure equal opportunities and reduce inequalities in outcomes, including through the promotion of appropriate legislation, policies and actions in this regard. They are challenging goals in the context of national agricultural research, technical assistance and innovation in rural areas.

The contribution of agricultural research to sustaining this process of social inclusion and reduced inequalities, as targets 1, 2 and 3 of SDG 10, was a priority in the last 20 years, manifested in social policies of inclusion and income distribution. The strong presence of the State in sustainable rural development and family farming is notorious. The Política Nacional de Agricultura Familiar (National Policy on Family Farming – PNAF) – Law 11,326/2007 (Brasil, 2007) – was fundamental to support all other public policies and programs aimed at reduced inequalities and increasing income.

Research and innovation agenda

Scientific and technological development and innovation have contributed significantly to reduced inequalities and social inclusion, especially in rural areas. The government effort was reflected in the increase of income, by the adoption of technologies; improvement of production systems; the organization of production and marketing and access to new markets and institutional markets. Developing the country is not an easy goal to achieve because of the extensive and diversified agricultural area and its continental dimensions. However, with

the institution and implementation of assertive policies in the last 2 decades, Brazil broke with the rural poverty circuit and left the Hunger Map. In 2014, the Food and Agriculture Organization of the United Nations (FAO) instituted the International Year of Family Farming, an important step in valorizing the work of family farmers (Brasil, 2014a).

Among the public policies focused on productive inclusion in rural areas, we highlight food security in agroecology because they have been translated into research programs and projects at Embrapa. The Política Nacional de Segurança Alimentar e Nutricional (National Policy on Food and Nutrition Security – PNSAN), Decree 7,794/2012 (Brasil, 2012), aims to promote food and nutritional security, as well as ensuring the human right to adequate food throughout the Brazilian territory (DHAA). It has as one of the guidelines the promotion of universal access to adequate and healthy food, with priority for families and people in situations of food and nutritional insecurity. It is aimed at promoting the supply and structuring of sustainable, decentralized, agroecological-based systems of production, extraction, processing and distribution of food.

The Política Nacional de Agroecologia e Produção Orgânica (National Policy on Agroecology and Organic Production – Pnapo), Decree 7,794/2012 (Brasil, 2012), acts in the strengthening and structuring of short agro-food chains and promotes the increase of income generation in the field, based on general principles of sustainability, involving agroecology and organic production. Also worthy of note is the Política Nacional de Desenvolvimento e Sustentabilidade de Povos e Comunidades Tradicionais (National Policy for the Sustainable Development of Traditional Peoples and Communities) (Brasil, 2007). It promotes the sustainable development of traditional peoples and communities, with an emphasis on recognizing, strengthening and guaranteeing their territorial, social, environmental, economic and cultural rights, with respect and appreciation for their identity, their forms of organization and their institutions. This policy guides the sustainability and mitigation of inequalities, directly promoting the social inclusion of race and ethnicity, provided for in target 2 of SDG 10, by advocating that: by 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status. The policy also contributes to the achievement of the targets of SDG 2, target 2.1, which provides for the elimination of hunger by 2030 and guarantee access to safe, nutritious and sufficient food throughout the year. It is also concerns target 2.2, which aims to eliminate all forms of malnutrition by 2030.

Embrapa contributes heavily to the extent that it develops and implements technologies and services in regions with a historical record of poverty in the countryside, especially in the Northeast and North (Amazon) regions. The focus in these territories is the family farmers and traditional peoples and communities, according to what was identified in research survey and later reported by more than 200 researchers in the *Coleção Povos e Comunidades Tradicionais* (Traditional Peoples and Communities Collection), which is presented in a synthesis too: research, technologies and innovations for social inclusion of indigenous peoples and traditional communities (Dias et al., 2016).

With regard to rural poverty in Brazil, the majority of vulnerable farmers occupy the Semiarid region of the Northeast. Public social inclusion policies were prioritized for this region and for regions with the lowest human development index (HDI) and the highest concentration of poverty. One policy of great importance in this regard was the Programa Brasil Sem Miséria (Brazil without Misery Program), which has been in operation since 2012, which has contributed greatly to reduced inequalities with differentiated public policies and programs for the distribution of income.

In the field of action of Embrapa, the partnership in the implementation of the Política Nacional de Assistência Técnica e Extensão Rural (National Policy on Technical Assistance and Rural Extension – Pnater) – with the technical assistance program focused on the training and transfer of knowledge and technologies for family farming– allowed to meet the demand of farmers with local and regional specificities. Pnater has contributed to overcome one of the greatest challenges faced by family farmers: low-income subsistence. The program enabled farmers to access institutional and local markets, as demonstrated by Chapter 5 of this report.

Apparently simplistic, the generation of jobs and income hides paradoxes provoked by modernization. Agricultural mechanization raises productivity in the field, but it has dramatic consequences on the human labor force. The reality of large agricultural farms shifts a large contingent of labor to unemployment. The intensive use of state-of-the-art chemical inputs has eliminated the capineiros, roceiros and applicators of products.

Family farmers turn to more labor-intensive activities, which pose difficulties in mechanization and therefore constitute an opportunity for these farmers. In this context, workers in vegetables and fruit, the so-called extractivists, are another set of activities in which agricultural research needs to focus attention. Low productivity and lack of ownership of technologies by family farmers are one of

the main barriers to income growth in small and medium-scale farms across the country. The importance of agricultural research to reduce rural income inequalities is direct and indispensable. Whether by the implementation of public policies directed to family farming, or in what is Embrapa's institutional responsibility, as a public corporation. In an indirect or ancillary way, research can contribute to the generation of employment and income in the countryside, installation of processing industries, creation of agricultural cooperatives, increase of tax collection and improvement of education, health, transportation, among others.

Increased agricultural production and productivity can reduce food prices and thus increase the purchasing power of the poorest populations and thus contribute to reduced inequalities. The research on family budgets, despite being out of date (2008), indicates that, in the ranges below two minimum wages, food consumes (24.96%) of the income twice as much as spent by the range over 25 minimum wages (11.55%), in relative terms (Homma, 2017; IBGE, 2017).

Thus, there is a strong economic, social and environmental inequality in the country that can be deepened if there is an institutional political change of rupture in policies and programs of income distribution and promotion of sustainable rural development. There is a tendency of governments to value public policies aimed at the expansion of export agribusiness, given the unique opportunity of generating foreign exchange for the country. The model is based on large-scale, high-productivity production with state-of-the-art technologies and concentrator of land and especially income. In territorial extensions, the production of soybean-corn and livestock from the South/Southeast to the Midwest, the occupation of the Cerrado and part of the Amazon, and recently in the transition region of Cerrado and Semiarid in a large area called Matopiba (formed by the states of Maranhão, Tocantins, Piauí and Bahia).

In the areas of agricultural expansion, the pace of land occupation is accelerated with high concentration of capital, land and insertion in the global food and commodities market. The model, on the one hand, strengthens economic development and integration into the world food market, by the continued and consistent expansion of commodity exports. On the other hand, it intensifies internal inequalities, putting pressure on sustainable rural development, focusing on the strengthening of small producers, multifunctionality, regional and local economies and job and income generation.

In the specific case of Brazil, the multiplicity of conditions of family farming could appear to threaten productivity and competitiveness. However, in practice,

this segment responds to food security and may represent an opportunity for establishing new models focused on the conservationist management of natural resources. That is to say, family farming contribute significantly to the conservation and sustainable use of water and can collaborate to achieve the targets of SDG 6. The great challenges or difficulties to be overcome are to keep the population of family farmers in the rural area with income generation and added value, through the strengthening of agroindustries and, in this regard, numerous contributions from Embrapa can be mentioned.

The strengthening of local production and consumption systems, prioritizing local and regional markets, also addresses one of the objectives of sustainable development, which consists of changes in the pattern of production and consumption, strengthening local and regional markets, thus enabling social inclusion, increase of income and reduced inequalities.

Despite the holding of the *United Nations Conference on Sustainable Development* in Rio de Janeiro in 1992, which mobilized the *Peoples' Summit* event, the sustainable rural development agenda came to be prioritized only at the beginning of the 21st century, with public policies aimed at reducing hunger, poverty, and inequality since 2003. Government programs have been implemented, such as Fome Zero (Zero Hunger), Bolsa Família (Family Allowance) (Campello; Neri, 2013) and Brazil without Misery (Plano..., 2013), which have as a structuring axis the strengthening of family farming. The basis was the National Policy on Family Farming (PNAF) in 2006 (Brasil, 2006) and the Programa Nacional de Fortalecimento da Agricultura Familiar (National Family Farming Development Program – Pronaf) (Brasil, 1996), which was the basis for this policy. There were numerous plans, programs and projects to reduce inequalities, such as: Programa de Aquisição de Alimentos (Food Acquisition Program – PAA); Programa Nacional do Biodiesel (National Biodiesel Program – PNB); National Policy on Technical Assistance and Rural Extension (Pnater); Seguro da Agricultura Familiar (Family Agriculture Insurance – Seaf); Lei Orgânica de Segurança Alimentar (Organic Food Security Act); Programa de Garantia de Preços para a Agricultura Familiar (Price Guarantee Program for Family Agriculture – PGPAF); Programa Nacional de Desenvolvimento Sustentável de Territórios Rurais (National Program for Sustainable Development of Rural Territories – Pronat); Programa Mais Alimentos (More Food Program); Programa Nacional de Alimentação Escolar (National School Feeding Program – Pnae); Programa de Garantia de Preços Mínimos (Minimum Price Guarantee Program – PGPM-Bio); Política Nacional sobre Mudança de Clima (National Policy on Climate Change – PNMC); National Policy on Agroecology and Organic Production

(Pnapo); Plano Nacional de Segurança Alimentar e Nutricional (National Plan for Food and Nutrition Security); Plano Nacional de Agroecologia e Produção Orgânica (National Plan for Agroecology and Organic Production – Planapo).

Policies have been filling the gaps and opportunities to expand social inclusion and reduce inequalities, favoring redistribution of income towards more balanced rural development. However, it is worth reflecting on the future of these policies and programs, a consistent agenda of State, committed to the inclusion and reduced inequalities and misery. These are government policies that have not yet been transformed into state policies and are subject to relegation due to new priorities established by institutional political changes that are taking place in the country as of 2016. For example, the resources of Plano Safra da Agricultura Familiar 2018/2019 (Family Agriculture Safra Plan 2018/2019) were frozen. They rose from approximately 1,3 billion dollars¹ annually in the early 2000s to approximately 9,2 billion dollars in 2016/2017, remaining unchanged in 2018/2019. In addition, there was a 37% reduction in rural credit from Pronaf (Mattos, 2017).

Embrapa, in the programming of research and technology transfer, has an active and consistent participation in these policies and programs. It has a research network with more than 40 Units, and can expand and maintain a research agenda aimed at meeting the demands of family farming. Institutional capillarity is present in all Brazilian biomes. The Amazonian biomes, predominant in the North, and Caatinga in the Northeast, due to their edaphoclimatic peculiarities, demand a great contribution of knowledge and technologies. The first case refers to the management of forest biodiversity and the second to coping with drought, as will be presented in the following chapters.

Embrapa's portfolio of multi-institutional and interdisciplinary projects aimed at strengthening the sustainable development initiatives of family farming and traditional communities with a view to aggregating values has, as a priority, a territorial approach. The project arrangements and the portfolios, within the logic of Embrapa's knowledge production, are connected with the actions carried out by its Research Units in the different Brazilian regions.

However, research is also affected by institutional contingency. The resources for Research, Development and Innovation were reduced in the public budgeted 2018/2019. This fact has a direct impact on the research agenda and there will be compromise of projects in progress and future projects. Embrapa's

¹ Values related to December 30, 2016: US\$ 1.00 corresponded to R\$ 3.2585. (Taxa..., 2016).

Macroprogram 6, which includes projects aimed at strengthening the family farming initiatives, was closed at the end of 2017. These events compromised the development of a series of activities that supported, with technologies, family farmers in the context of the generation of income, productivity and inclusion. Other programs and projects on the research agenda aimed at inclusion or income generation continue, among them Produção Orgânica de Base Ecológica (Ecological Based Organic Production), Rota do Cordeiro (Route of the Lamb) and Balde Cheio (Full Bucket), among many, which are strategic in this context. The problem lies in the continuity and expansion of this agenda for sustainable rural development in line with public policies. Lately, reduced government investment in research entail a readjustment of the PDTI agenda at Embrapa, aiming at re-adapting it to the national reality.

Another central issue for sustainable rural development and to promote equity in the field is access to technologies developed by research institutions, the technical assistance system and rural extension. The creation of Agência Nacional de Assistência Técnica e Extensão Rural (National Agency for Technical Assistance and Rural Extension – Anater) (Brasil, 2014b), with the participation of Embrapa in management, poses the challenge of integrating the agricultural research system into the system of technical assistance and rural extension, fostering the improvement of new social technologies that support reduced social inequalities in the field. Among Anater's competences are to promote, encourage and coordinate programs of technical assistance and rural extension, with a view to technological innovation and appropriation of scientific knowledge of a technical, economic, environmental and social nature; support the use of social technologies and traditional knowledge by rural producers; promote programs and actions of a continuing nature for the qualification of technical assistance and rural extension professionals that contribute to sustainable rural development; promote the generation of new technologies and their adoption by producers. The basis for this is the strengthening of the Ater system by the permanent and continuous training of rural development agents linked to this institution, in its role of articulation with Embrapa to enable the construction of an agenda of inclusion, with a territorial approach.

Final considerations

In recent years, Embrapa's participation in various inclusive social policies related to sustainable rural development has been expanded, which has allowed the expansion of research and generation of technologies and innovations to

increase income of family farmers related to SDG 10 in its targets 10.1, 10.2 and 10.3. New advances in meeting the demands of family farming depend on the strengthening of interactions between research actions and technical assistance and rural extension. Embrapa has contributed by developing and implementing technologies and training farmers in territories with a historical record of poverty, especially in the North and Northeast. These actions are also related to SDG 1 (End poverty in all its forms and everywhere), SDG 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture).

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