

REDUCED INEQUALITIES

CONTRIBUTIONS OF EMBRAPA

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Chapter 1

General aspects of inequality and sustainability and Embrapa's role

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Introduction

Reducing inequality within and between countries is a major challenge to be overcome in the context of global commitments to sustainable development. This chapter presents general aspects of inequality and its contextualization in Brazil, as well as the role of agricultural research, especially Embrapa, in its reduction. Broadly, it dialogues directly with the following targets of the Sustainable Development Goals 10 (SDG 10),

10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average

10.2 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

10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard (United Nations, 2018).

It is also related to SDG 1, 2, 3, 5, 8, 11, 12, 16, among others.

General aspects of inequality

The United Nations (UN) Member States, at the UN Summit on Sustainable Development 2015, have established and committed to a new sustainable development agenda in defining the "Future we want." The 2030 Agenda is a new pact to face the great challenges of planetary sustainability and institute sustainable development in its three dimensions: social, economic and environmental. The Agenda defined 17 Sustainable Development Goals (SDG), among which is to reduce inequalities within and between countries.

Inequality and sustainability are key challenges of our time and are embedded in such a way that it is impossible to address one theme without considering the other, as stated in the World Social Science Report (Relatório..., 2016). The report points to seven levels of inequality:

- Economic inequality – differences between levels of income, resources, wealth and capital, living standards and employment.
- Social inequality – differences between the social status of different population groups and imbalance in the functioning of education, health, justice and social protection systems.
- Cultural inequality – discrimination based on gender, ethnicity and race, religion, disability and other groups identities.
- Political inequality – the differentiated capacity of individuals and groups to influence political decision-making processes, to benefit from these decisions, and to participate in political action.
- Spatial inequality – spatial and regional disparities between centers and peripheries, urban and rural areas, and regions with more or less diversified resources.
- Environmental inequality – irregular access to natural resources and the benefits of their exploitation; exposure to pollution and risks; and differences in the agency's ability to adapt to such threats.
- Knowledge-based inequality – differences in access to and contribution to different sources and species of knowledge, as well as the consequences of such disparities.

In order to face these inequalities, it is necessary to know the challenge of unsustainability. It consists of finding means of production, distribution and consumption of existing resources in a more cohesive, economically efficient and ecologically viable way. Sustainability, according to the Brundtland Report (Nosso..., 1991), can be understood as a process of transformation in which the exploitation of resources, the direction of investments, the direction of technological development and institutional change harmonize and reinforce the potential present and future, in order to meet human needs and aspirations. The report points out that the inequalities and discrimination push the poorest and marginalized into unsustainable practices, while powerful elites can continue with these practices without fear of recrimination. In this context, poverty can be

considered as a problem of unsustainability of the environment, a key topic for the pursuit of sustainability.

Studies (Zanden et al., 2014) with information of almost 2 centuries on data on income, education, life expectancy, height of the population, political institutions, environmental quality and gender inequality, among others indicated that inequality between countries increased considerably. The Reward Work, Not Wealth Report (Compensem..., 2018) states that 82% of all wealth generated in 2017 was in the hands of the richest 1% of the population. Meanwhile, the poorest half of the population (3.7 billion people) was left with nothing. The report indicates that over the last 25 years, while the richest 1% captured 27% of overall income growth, more than half of the world's poorest people accounted for 13% of every dollar in the economy.

If it maintains the same level of inequality, the global economy would need to grow 175 times to allow everyone to earn more than US\$ 5 a day. The gap between rich and poor continues to widen. Growth benefited disproportionately the higher income groups, while lower income families were left behind. This long-term increase in income inequality not only raises social and political concerns, but also economic ones. Low-income people have been prevented from expressing their human potential, which is bad for development, given the sustainability and future of the poorest nations. There are several practical consequences of inequality, such as different opportunities for access to land, markets, technology and public policies. These factors contribute to the intensification of inequality between and within countries.

Human Development Report (HDR), released by the United Nations Development Programme (UNDP) (Human..., 2016), showed that some groups have been left out of this development. Women, ethnic and racial groups and rural populations have not been able to benefit from global progress. UNDP also points to the national and global policies and strategies needed to reach these excluded populations. The report highlights four axes:

a) Social protection – universal policies of health and education; of social assistance, such as Bolsa Família (Family Allowance) and Benefício de Prestação Continuada (Continuous Cash Benefit); social security benefits for vulnerable groups and financial inclusion.

b) Affirmative action policies – for women, blacks, indigenous people, people with disabilities among other vulnerable groups.

c) Sustainable human development – so that shocks, such as economic recessions, epidemics, natural disasters, do not bring people back into poverty.

d) Participation and autonomy of the excluded – implement human rights treaties, guarantee access to justice, promote inclusion and the right to information.

The development process generates a large number of people excluded from citizenship. Studies by the Economic Commission for Latin America and the Caribbean (ECLAC) indicated that 37% of indigenous people and 34% of blacks are among the poorest 20% excluded from participation (Reunión de la Mesa Directiva de La Conferencia Regional sobre Desarrollo Social de América Latina y el Caribe, 2016). These inequalities are derived from a heterogeneous productive matrix that generates high inequality with effects on the socioeconomic level, gender, ethnic-racial condition, age and territory.

Reduced inequalities in Brazil

The Gini index (which measures the inequality from 0 to 100) pointed out that in Brazil there was an increase in inequality of income distribution, going from 47 in 1820 to 61 in 2000 (OECD, 2012). Brazil leads the countries with the highest concentration of wealth, which is in the hands of the richest 1% of the population, according to the [Social Panorama of Latin America 2017](#) report, released by ECLAC (Panorama..., 2018). ECLAC cited in the report data from the international network of researchers [World Wealth](#) and Income Database, which gathers tax information to estimate income inequality in countries. According to information from this network, the richest 1% of the Brazilian population accounts for 27.8% of the country's total income, in the data for 2015. The Human Development Index (HDI) indicate that social and gender inequality has intensified in Brazil, according to 2015 data released in 2016 by the [United Nations Development Programme](#) (Human..., 2016).

In a country of continental dimensions such as Brazil, there are many differences between regions or localities, whether cultural, historical or economical (Fernandes, 2001). The Pesquisa Nacional por Amostra de Domicílios (National Household Sample Survey) (IBGE, 2016) indicated that, in terms of monthly real income inequality (measured by the Gini index), the Northeast and North regions had higher rates than other Brazilian regions (IBGE, 2016). The levels of regional poverty, according to the Síntese de Indicadores Sociais (Synthesis of Social

Indicators – SIS) (IBGE, 2017), are higher in the North and Northeast regions. The most significant numbers of poverty are in the Brazilian states of: Maranhão (52.4% of the population), Amazonas (49.2%) and Alagoas (47.4%). The study shows that, in general, poverty occurs more frequently in rural households of the interior of Brazil than in the urban peripheries of the capitals.

On the other hand, in the context of inequalities, those related to gender and race are structuring of Brazilian social inequality. The document *Retrato das Desigualdades de Gênero e Raça* (Portrait of Gender and Race Inequalities) (Retrato..., 2011) points out that for decades, policies have been developed based on homogeneous groups of human beings, without sex and without race, which should, from this conceptual framework, have similar conditions to access public policies and benefit from them. Studies show that inequalities remain and that the reversal of this picture demands new actions.

Organized civil society, especially feminist movements, those of blacks, indigenous peoples and traditional communities, has for decades been showing and denouncing the worst living conditions in this part of the Brazilian society. They point out the barriers to equal participation in various fields of social life. They point out to the consequences that these inequalities and discriminations produce not only for these specific groups, but also for society as a whole.

Since 1990, the Institute for Applied Economic Research (Ipea) shows data and makes reflections related to inequalities of gender and race in the country. They are subsidies for stakeholders and diverse fields, such as academics, government managers and members of organized social movements. According to Ipea, these factual evidences were not alone able to give government agencies a new paradigm for the construction of interventions that reduce inequalities and poverty (Retrato..., 2011).

Poverty and inequality have a distinct nature, although poverty is determined by inequality. One of the great consequences of inequality is hunger. In 2013, when the last survey of the Escala Brasileira de Insegurança Alimentar (Brazilian Food Insecurity Scale – Ebia) was carried out, the [food insecurity index](#) was severe and showed a vulnerability to hunger of 3.2% of the population (Escala..., 2014). It is believed that hunger is not a problem of insufficient food supply. It turns out that one important layer of the population does not have access to land or the support to produce, and another, which is in the cities, does not have the income to have the guaranteed access to the food. It is therefore a question of distribution, which implies in State management.

Driven by the strong political engagement of organized civil society, in the last decades, Brazil has been implementing several policies of income transfer, promotion of equity and support to small-scale producers. In relation to the transfer of income, the Family Allowance Program stands out. Since 2003, the program has supported thousands of families and has kept children and young people in school. In 2011, the federal government launched Plano Brasil Sem Miséria (Brazil without Misery Plan), an expansion of Family Allowance, with the objective of promoting the social and productive inclusion of the extremely poor population. Public policies for rural development, especially for small-scale producers, were created, such as Programa Nacional de Alimentação Escolar (National School Feeding Program – Pnae), Programa de Aquisição de Alimentos (Food Acquisition Program – PAA), Programa Nacional de Fortalecimento da Agricultura Familiar (National Family Farming Development Program – Pronaf) and the measures and adjustments presented annually in Plano Safra da Agricultura Familiar (Family Farming Safra Plan).

In other words, a set of public policies were created and activated to stimulate the production of family farmers, their associations and cooperatives, allowing access to credit, differentiated markets and the solidary drive of local economies. Social movements were decisive in the implementation of several advanced policies, such as Política Nacional de Agroecologia e Produção Orgânica (National Policy on Agroecology and Organic Production), Decree 7,794/2012 (Brasil, 2012b). These policies have been strengthening income generation in the countryside based on agroecological principles, sustainability and ethnic and generational equity.

The Política Nacional de Desenvolvimento Sustentável dos Povos e Comunidades Tradicionais (National Policy for the Sustainable Development of Traditional Peoples and Communities – PNPCT) (Brasil, 2007) aims to promote the sustainable development of traditional peoples and communities with an emphasis on the recognition, strengthening and guarantee of territorial, social, environmental, economic and cultural rights, with respect and appreciation for their identities, their forms of organization and their institutions. This policy signals to government institutions the need to guarantee these social groups access to their services and products in order to promote sustainability and mitigate inequalities.

Indigenous peoples, whose territories represent almost 12% of Brazil, articulated with sectors of the federal government, have built the Política Nacional de Gestão Ambiental e Territorial Indígena (National Policy on Indigenous Environmental and Territorial Management – PNGATI), approved in 2012 – Decree 7,747/2012 (Brasil, 2012a). It aims to guarantee and promote the protection, recovery, conservation

and sustainable use of the natural resources of indigenous lands and territories, ensuring the integrity of indigenous heritage, improving the quality of life and the full conditions of physical and cultural reproduction of the present and future generations of indigenous peoples, respecting their socio-cultural autonomy.

Embrapa's insertion

Among the targets of SDG 10 to reduce inequalities by 2030, target 10.1 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. They are challenging goals in the context of national agricultural research, technical assistance and innovation in rural areas.

The agricultural census data shows that the Brazilian reality is not different from that observed in most of the countries in the world that are at the same pace of development. Data from the Brazilian Institute of Geography and Statistics (IBGE) of 1996 showed that, in a universe of 5,175,489, the typical properties of family farming amounted to 4,367,902, while the non-family reached 807,587. In this context, 91.6% have less than 100 hectares and 68% have less than 20 hectares (IBGE, 2009).

Thus, there is a profound inequality, since, although family farm accounts for 84.4% of the total number of establishments, it occupies only 24.3% of the country's agricultural land (or 80.25 million hectares). It is interesting to note that, even occupying only a quarter of the area occupied for agricultural production, family farming employs seven out of ten people employed in the field.

Low productivity and the lack of technologies by family farmers are one of the main obstacles to increasing income for small and medium-scale farms. Agricultural research plays a fundamental role in reduced inequalities, since it acts directly on production and rural productivity. This action has a direct impact on the availability and price of food products, increasing (or not) the purchasing power of the poorest. Agricultural research contributes to the increase of income and employment of the entire social network involved with the activities in the field. It can also collaborate in the strengthening of cooperatives, associations, agroindustries, improvement of tax collection with repercussions in education, health, welfare and is projected in the conditions of life and permanence of the

farmers in the rural area. Increasing rural producers' incomes weakens possible rural-urban migration waves, avoiding human accumulation on the outskirts of cities, where large contingents are concentrated in conditions of extreme poverty.

Brazil stands out as one of the countries that have one of the most structured systems of agricultural research. With national and international partners, Embrapa develops leading research, generating and making available high-impact technologies for a significant portion of the poorest rural producers. Its international activities have strengthened South-South cooperation since 2007. On the African continent, several actions and partnerships have provided the availability of technologies and institutional capacities aimed at supporting national development initiatives and their impact on poverty reduction.

In Brazil, adjusted to national policies to promote family farming and agroecological basis, among others, Embrapa faced positively the reflections on social, environmental and economic sustainability in its research projects. These actions are reflected in the biomes, where the environmental challenge is very great and diversified, as in the Amazon and the Northeast. Embrapa develops and adapts technologies of wide impact to the existing social inequalities, especially regarding the sustainable use of the forest and the cope with the drought.

Embrapa, through its internal management mechanisms, currently has a diversified portfolio of projects organized in 23 portfolios and 84 thematic arrays, many with a close interface with the general sustainability challenges, in particular, targets 10.1 and 10.2. In the institutional perspective of Embrapa, an array is an instrument of organization of related projects, according to a thematic vision with the objective of finding solutions to regional demands, biomes and productive chains, according to Embrapa's Sixth Master Plan (PDE). The arrays deal with the contribution of the Research Units to the strategic planning of Embrapa. The portfolio is an instrument according to a thematic vision that originates from the corporate perspective, with the purpose of finding solutions to national, institutional, or governmental demands, as described in Embrapa's Sixth Master Plan. Among the research portfolios are:

- Forestry
- Coping with Droughts
- Integrated Crop-Livestock-Forestry Systems
- Ecologically-Based Production Systems

Among the arrays are:

- Strategies to Increase the Efficiency and Sustainability of Dairy Cattle in Brazil (More Milk).
- Restoration of Degraded Pastures in the Amazon (Repasto).
- Restoration and Environmental Adequacy of the Rural Landscape in the Atlantic Forest of the South and Southeast Regions (Sustrural).
- Family Farming without Fires in the Amazon (ASQ).
- Conservation and Sustainable Use of Bee Genetic Resources in Agroecosystems and Impacts on Brazilian Agribusiness (Abelha).
- Development of Technologies for the Sustainable Cultivation of Fruit Species Native to the Amazon (Sisnativa).
- Agroecological Innovation: construction and knowledge exchange with family farming in the Northeast region of Brazil (Agroeco-NE).
- Agroecological Systems as an Alternative for the Development of Family Farming in the Midwest Region (AgroE-CO).
- Building and Exchanging Knowledge for the Sustainable Development of Traditional Peoples and Communities (ConPCT).

Embrapa's commitments in SDG 10 provide a set of reflections on: the challenges of its research and innovation agenda; its technologies to reduce inequalities; broad coverage and social impact; research, technology transfer and innovation for the social inclusion of indigenous peoples and traditional communities; its participation in the impacts of policies to promote equal socioeconomic opportunities in rural areas and the perspectives and challenges of integrative actions focused on reduced inequalities and promoting income generation.

Final considerations

The pursuit of economic, social and environmental sustainability has a deep relationship with actions to reduce inequalities. Combating poverty is a key topic for sustainability. Poverty is present in specific categories of the national peasantry, especially in small-scale family farmers and certain ethnic and racial groups that have historically been abandoned from public policies that are more inclusive. Embrapa's greater institutional involvement with these categories will determine

the broadening of the institutional contribution to reduced inequalities, especially in targets 10.1, 10.2 and 10.3.

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