

NO POVERTY

CONTRIBUTIONS OF EMBRAPA

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Technical Editors



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



Sustainable Development Goal 1

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Chapter 2

Challenges for a country without poverty

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Introduction

Brazil is the fifth most populous country in the world, with 209 million inhabitants (World..., 2017). Only 1.0% of this population has a monthly average household income per capita of more than US\$ 4,689.34¹, while 25.4% of the population lives on poverty line, with a per capita income below US\$ 5.5 per day in terms of purchasing power parity (PPP) (Síntese..., 2015). Even though Brazil has advanced in the last decade, with a significant decrease in the inequality indexes for personal income distribution in the worldwide ranking, the country is still among the top ten with high population income inequality (Síntese..., 2015).

Social inequalities in Brazil are expressed through the concentration of income, unemployment, hunger, malnutrition, infant mortality, low schooling, and violence (Camargo, 2017). The facts that imply poverty are the lack of necessary means that guarantee the maintenance of life, human dignity, and well-being, all of which depend on the life standard and culture of each community. Thus, poverty is relative to several temporal and spatial parameters. This way, one can designate as poor a person whose deficiency places them at the brink of death or the individual whose nutrition, housing, and clothing, although sufficient to survive, have a lower quality than that of the population in general (Mello, 2017).

The North and Northeast, which have the lowest human development index (HDI), are the regions of the country that concentrates the most significant number of people in extreme poverty. The North is home to the largest biological diversity in the world, which, together with other Brazilian biomes, places the country as the holder of the greatest biodiversity in the world, i.e., one-fifth of all biological diversity in the planet.

The Brazilian semiarid region is home to a population of more than 22 million people, one of the most populous rural environments on the planet; 91.45% of

¹ US\$ 1.00 was equivalent to R\$ 3.98 on November 1, 2019.

the cities located in this biome present extremely high values of socioeconomic and ecological vulnerability (Silva et al., 2014). The population of this environment depends on subsistence farming to survive and faces severe problems of lack of water supply and basic sanitation. Traditional production systems, which are the basis for generating employment and income for these populations, are highly vulnerable to climate change. Northeast semiarid region is the most vulnerable place to extreme weather events in Brazil, especially droughts. Drought is a natural phenomenon in arid and semiarid environments. The last droughts in Brazil caused losses of more than 26 billion dollars for the states in the Northeast region, affecting more heavily the rural population that inhabits this environment (Pereira, 2017). The *Caatinga* is the biome with livestock production in this environment, where high resilience patterns contrast with the fragility of the animal and anthropic components due to extended dry periods in the region. Government policies have been trying to provide the necessary minimum resources for the population of this region, but efforts are still insufficient to promote significant changes in the quality of life of Brazilian poorest and most marginalized population living in the semiarid region.

Despite the reduction of extreme poverty in Brazil, inequality persists in the country (Campello; Gentili, 2017). Hunger has been overcome as an endemic problem but there are still populations that experience food shortages and need increased schooling, said former Minister Tereza Campello during an interview with the UNDP (Nações Unidas, 2016). The level of inequality in Brazil can and must be changed, and for that, it is necessary to widen access not only to goods but also to public services that ensure population dignity. For Campello and Gentili (2017, our translation):

[...] access (or lack of access) to water, sanitation, energy, education, health, housing, and consumer goods such as refrigerators, telephones, among others, are not peripheral dimensions of inequality. The urgency and priority of access to these rights for the poorest can occur concurrently with structural changes that take time.

The promotion of policies to reduce social injustice and structural inequalities is the primary strategy to reduce poverty (Calixtre; Fagnani, 2017; Campello; Gentili, 2017). Understanding the gaps, failures, limits, and new challenges of this process of equality and justice are fundamental to reconstruct effective strategies to reduce and end poverty in Brazil.

In order to operationalize sustainable development, government actions, through public policies, need to consider the entire human population, the ecosystems, and their relationships. Thus, policies must be universal and have a social inclusion character.

In order to combat it, poverty must not be considered as a natural phenomenon and it should be analyzed in its various dimensions; however, the denaturalization of inequality requires understanding that it is a set of injustices. Social inequality is always a political relationship, in which State actions must combat it and collective struggles for rights must affirm, nevertheless, the democratic effect that can destabilize privileges historically reproduced by the elites.

According to the head of the Sustainable Development Center of the University of Brasília (UnB), Marcel Bursztyn, in an UNDP interview (Nações Unidas, 2016, our translation): "Poverty is associated with inequalities and, in order to reach a sustainable level of development, it is essential to work with these two concepts in an integrated way."

The winner of the 1998 Nobel Prize in Economics, Amartya Sen, sees development as a process of expanding substantive freedoms that people enjoy and, for that to happen, it is necessary to remove deprivations that limit the ability of individuals to choose. Thus, there is an appreciation of the agent subject, making him responsible for his choices. However, responsibility requires freedom. These freedoms, according to Sen (2000), will be obtained through effective public policies that improve the quality of life of the population by sharing the fruits of economic growth. However, despite the fact that world food production is greater than ever before, markets are increasingly improved, human and civil rights are part of most political leaders' discourse, and democracy has become a dominant government regime, people still die of collective hunger, chronic hunger, and there is still suppression of fundamental freedoms, such as political and economic freedoms (Sen, 2000).

For Rafael Osório, from the Institute for Applied Economic Research (Ipea) in the partnership with International Policy Center for Inclusive Growth (IPC), in an interview with UNDP, poverty eradication requires national planning in which environmental, social, and economic aspects must be integrated (Nações Unidas, 2016).

Poverty makes individuals, families, and communities fragile. Only public power can solve this situation through multi-sectorial public policies, such as universal access to health services and basic education, encouragement to create solidary economy organizations, community production groups, solidary funds, and the development of social technologies. However, the effectiveness of these policies

presupposes access to social life. Thus, to end or reduce extreme poverty, it is essential to socially include an expressive population contingent, recognizing its right to economic and cultural autonomy. Overcoming this situation requires the active participation of these men, women, and youths, strengthening existing social and community ties. This action must be universal and involve multiple actors and public institutions, non-governmental organizations, and social movements that already participate in actions of this nature.

Innovation in family farming

Innovation in family farming is essential to ensure, in the long term, global food security, according to the Food and Agriculture Organization of the United Nations (FAO), in *The State of Food and Agriculture: innovations in family farming* (The State..., 2014). In that document, FAO lists necessary contributions to strengthen and enable family agriculture: farmers' organizations that can encourage and support innovation among their members; public investment in agricultural research and development (R&D); extended education and consulting services; environment conducive to innovation, such as good governance, stable macroeconomic conditions, transparent legal and regulatory regimes, secure property rights, risk management tools, and a structured market.

According to FAO, feeding the world in the coming decades will depend on the more than 500 million family farmers who form the backbone of agriculture in most countries (Figure 1). At the same time, family farming will have to take a leadership role in the continuous struggle, not only against hunger and poverty but also in preserving the environment against degradation (Figure 2).

Family farming represents an opportunity to boost local economies, especially when combined with specific policies designed to promote the social protection and well-being of communities.

In 2013, Embrapa held an event called *Agricultura Familiar: Construindo uma Agenda com Visão de Futuro* (Family Farming: Developing a Forward-Looking Agenda). It aimed at promoting debate and subsidizing the construction of a future agenda that contemplates the development of social technologies and subsidies to public policies for family farmers.

In this scenario, Embrapa develops numerous studies and technologies aimed at serving this relevant public (Figure 3). The goal is to strengthen family farming



Photos: Felipe Santos da Rosa

Figure 1. The contribution of family farming to food supply.



Photo: Henrique de Oliveira

Figure 2. Family farming area: interplanting of beans, rice, sunflower, and corn in Pirenópolis, GO.



Photos: Secom-PR

Figure 3. Training and transfer of technologies for vegetable production in family farming in the Northeast of Brazil.

through the introduction of technologies based on social, economic, and environmental sustainability.

Innovation in agribusiness

Gross domestic product (GDP) data indicated that the accumulated growth of agriculture and livestock production in the year of 2017 was 14.5%, with industry and services showing a negative contribution to GDP formation, with cumulative rates of -0.9% and -0.2%, respectively (Brasil, 2017).

According to Lopes (2013), the president of Embrapa, the modernization of agriculture showed that, with the intensive use of knowledge, it is possible to improve the quality of decisions and generate the desired benefits. After 4 decades using this model, it is possible to notice that knowledge is a powerful tool for equating the conflicts of economic and social development and reducing poverty. The production of knowledge, which enabled intensification of agriculture and reduction of its risks, also created biological nitrogen fixation, no-tillage farming (Figure 4), biological pest control, conventional and genetically modified soybean

Photo: Pedro Luiz de Freitas



Figure 4. No-tillage farming of soybeans in sugarcane straw, Observation Unit of Usina Guaíra, SP. Embrapa projects: Rotcana e Cana.

varieties, integrated crop-livestock-forest systems (ICLFS) (Figure 5), tropical wheat, among others, as well as optimized climate risk zoning in support of the agricultural insurance program, financing of agricultural mechanization, and public safety actions (Lopes, 2013).

The introduction of the concept of innovation as a management tool is a strategic positioning by Embrapa that contributed to the provision of information and technologies that allow, among other actions, the production of high quantity and quality foods.



Photo: Gabriel Rezende Faria

Figure 5. Beef cattle in an integrated crop-livestock-forest system (ICLFS), Fazenda Gamada, in Nova Canaã do Norte, MT. ICLFS Technological Reference Unit accompanied by Embrapa Agrossilvopastoral.

Final considerations

Actions to reduce poverty are essential in order to achieve sustainable development. The present and the future require the recognition of rights and the fulfillment of duties.

For the operationalization of the development that we aim for, policies that cover the social, economic, and environmental pillars are necessary.

Innovation in both family farming and agribusiness is strategically inserted in the management of Embrapa to deliver technological solutions and expertise to

continue transforming the different Brazilian realities and contribute to the end of poverty.

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