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Food production chains and sustainability: interfaces between global and local

Cadeias produtivas de alimentos e sustentabilidade: interfaces entre global e local

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ABSTRACT
This research is about the relationship between the global food crisis, sustainable development and the (in) efficiency of broad food production chains. In order to increase the supply of food worldwide, governments and producers began to adopt agricultural industrialization practices, with a view to developing a culture of export and import of food products. However, such practices can damage the environment and, even so, are not enough in relation to the desire to cure world hunger. In this way, the present research seeks to analyze the problematic relations between the high agriculture and livestock industrialization, especially in relation to countries where there is a high incidence of hunger and malnutrition, and the reflexes of such practices in the environment, evidenced by harmful consequences such as burning, deforestation, river pollution, death of pollinating species and global warming. Based on the hypothetical-deductive method, the objective is to highlight some of the problems generated by the production of groceries on a large scale, aiming at exports, without valuing local needs and sustainability. In addition, we will seek to point out in an analytical way some beneficial aspects in relation to short production chains and their relationship with environmental and social sustainability.

Keywords: Agribusiness, Crisis of foods, Sustainable production, Local power.

1 FOOD PRODUCTION CHAINS AND THE USE OF NEW TECHNOLOGIES IN THE FIELD

According to a UN report, in 2019, 113 million people were starving in the world, a figure that should have multiplied exponentially in 2020, in view of the proportion of the crisis caused by the Covid-19 pandemic (Sars-cov-2). Therefore, assessing a situation that combines a

production chain capable of growing food in order to supply the entire population and, in addition, to bring income to the country from the export of commodities, without this mass production affecting the environment, becomes an even greater challenge for governments and societies all over the planet. How to combine a food production that is able to fight hunger in the world with the need to preserve the environment as a whole?

As a solution, the prevailing discourse is that, in order to overcome hunger, a regression in environmental policies would be necessary. In other words, in order to cope with the world population growth, governments and producers would need to adopt strategies of industrialization of agribusiness and a culture of export and import of food products, in long production chains. To achieve this mass production, transgenic seeds, pesticides, and unnatural fertilizers would be used, the so-called new agribusiness technologies, which despite increasing production and profitability in the field, are harmful to the environment.

Josué de Castro, reports that the issue of confronting hunger in Brazil arose from analyses of malnutrition caused by drought in the Northeast, when, in the early 1960s, policies to combat extreme poverty were adopted from the expansion of the industrialization of agriculture, leaving only manufacturing agriculture to small producers. Thus, productive practices were massified in an unrestrained way, even in regions where hunger was not so present, as in Rio Grande do Sul, without concern for environmental and public health issues. Thus, what can be seen is that, although the objective was to increase the volume of production to face the hunger and malnutrition of individuals, in truth, the objective of individual profit for producers was put ahead of the interests of the population, directing agricultural production for export. This occurred in Brazil and in several countries of the South, producers and exporters of commodities worldwide.

To obtain a harvest capable of generating an extensive production aimed at exportation, it was necessary to change the traditional forms of production. From the so-called Green Revolution, producers adopted transgenic seeds, accompanied by an increase in the use of agrotoxic substances in their production chains. In a report developed by ABRASCO (Brazilian Association of Collective Health), it was pointed out that Brazil was the largest consumer of pesticides in the world in 2008. This position should be seen with great concern by all, in view of the consequences to the environment caused by an agriculture that applies increasingly industrialized techniques, but does not expand with the same speed the control over sustainability in the handling of such techniques.

This agriculture aimed at the overproduction of certain products is defined by Gliessmann under the following aspects: monoculture, degradation of the production field, fertilizers from the

chemical industry, irrigation, transgenics, and pesticides. These forms of cultivation, even though they generate large harvests in the present, are harmful to the crops to come, besides causing serious environmental problems in the long term, such as the devastation of the fauna and flora, the pollution of rivers, springs, tributaries, and water sources, tributaries and aquifers Rachel Carson points out that all individuals are likely to be in immediate or immediate contact with pesticides, which is a risk not only to the environment, but also in relation to the well-being of human life, since pesticides "destroy the very enzymes whose function is to protect the body from damage; they impede the oxidation processes from which the body gets its energy; they oppose obstacles to prevent the normal functioning of various organisms." They can trigger anything from minor illnesses, such as allergies, to major pathologies such as cancer, which can lead to death.

However, despite all these risks, some countries, such as Brazil, maintain this way of production in order to export to first world countries, contaminating their own environment. In doing so, they damage their domestic market, which suffers from stock problems and dependence on external production chains. Although they have an extensive chain of agricultural production to meet the demands of the external market with monoculture, they need to import basic products for their population, which are not within the list of specialties of the national agro-industry.

From this perspective of globalization of production chains and international markets, apparently contradictory paradigms coexist in parallel: to reconcile favorable trade balance and economic growth arising from the export of primary products with the nutritional needs of its domestic market and the preservation of the environment For this, Altieri advocates the adoption of four production cycles: "progressive elimination of inputs, effective use of inputs, replacement of inputs and finally replanning of the system." A major change and adaptation in the Brazilian primary sector in order to use more sustainable production techniques. This is what will be seen below.

2 SHORT PRODUCTIVE CHAINS, FAMILY AGRICULTURE AND TRADITIONAL PEOPLES

Even with several issues involving hunger and devastation of natural environments, agribusiness is still one of the strongest sectors in Brazil, with strong governmental programs for financing and facilitating planting. However, paradoxically, the issue of hunger is still subject to high statistics both in the country and worldwide.

Freitas cites that "any and all development that becomes, in the long run, a negation of the dignity of living beings in general, even if it pays high taxes, will be considered unsustainable.

From this perspective, the question of the search for solutions that balance a production capable of solving the malnutrition issue and, at the same time, excel in socio-environmental sustainability is highlighted. In this context, the return to the origins is necessary, starting with the promotion of "self-sustainable agricultural systems. Junges reports that, within the biocentric study, there is the definition of obligations regarding the environment, bringing this system as a subject of rights.

And if the world scenario was already one of great poverty, hunger, misery, and inequality, there was a significant increase in these problems due to the Covid-19 crisis. A study published by IICA (Inter-American Institute for Cooperation on Agriculture) reveals that in order to contain food scarcity issues in Latin America in a post-pandemic scenario, investments in short production chains will be necessary. Such chains, besides guaranteeing the supply of the countries internally, can heat up the internal economy, reduce aggression to human health and, mainly, preserve the ecosystems.

One of the ways to achieve sustainable food consumption is the expansion of family farming, aimed at the demands of the domestic market. In this productive mode "management, ownership, and most of the work, come from individuals who maintain blood or marriage ties among themselves." It is a form of production that is not totally colonial, but also not based on large profit production, which operates under small cultivated areas, aiming to produce groceries for their own sustenance or for commercial supply.

In Brazil, there are several examples of open fairs promoted by small rural producers, which bring to the population food rich in nutritional content and with a negligible percentage of aggression to the environment, because they are organic productions, which do not use synthetic pesticides for production. Thus, the most vulnerable populations have access to a food with high nutritional value and free of pesticides, which can prevent the occurrence of many diseases, besides not polluting the environment. Another emblematic and noteworthy case is the scenario of Cuba, which, after the Cold War period, began to face an economic embargo imposed by the capitalist countries. This problem was aggravated with the extinction of the Soviet Union and, as a solution, Cuba started to seek internal solutions so that its population would not face an even greater crisis. The country had to adapt its production methods, reinventing itself, applying its own cultivation techniques based on the planting of basic foodstuffs all over the national territory, even in public squares and streets. This is an example of sustainable production, as Cubans use natural products manufactured by their own universities, in order to generate a large domestic production. It is a form of organic agriculture, which is based on not applying "synthetic fertilizers and pesticides." And to contain pests and strengthen crops, the Cubans have conducted research so that, from basic

raw materials and natural knowledge, they can foster their domestic market for food products. Thus, with subsistence foods aimed only at internal consumption, issues such as hunger have been alleviated in the country. Moreover, the production focused on family farming and under the aegis of traditional knowledge inhibits the use of pesticides and genetically modified seeds, which, in addition to environmental issues, can cause mutations to the human body.

Research indicates that, especially in countries considered subordinate, the implementation of organic agriculture is beneficial to the population for several factors. One of them is the non-industrialization and the correct absorption of nutrients by individuals, since in productions destined for agro-industry, the processes to make food ready for consumption end up removing essential substances for the proper functioning of the human body, replacing them with materials of low nutritional content, which have saturated fats and are harmful to health as a whole.

In turn, within the perspective of sustainable production we can identify the bio-economy, or "economy based on biological resources". This approach brings to the fore the insertion of traditional peoples as a reference of knowledge and cultivation of sustainable practices in food production. Valuing the knowledge of traditional peoples is a possible solution both to the loss of biodiversity caused by monoculture and the use of agrochemicals, as well as to the fight against hunger. Moreira states that traditional peoples, in essence and through their culture, have their lives in connection with nature, with a vast identification of techniques and the capacity to form sustainable production scenarios.

In Brazil, despite the historical problem of society's valorization of these subjects, in 1992 it ratified the Convention on Biological Diversity, aiming to protect biodiversity and the traditional knowledge arising from the secular relationship between traditional populations and nature. Among its objectives is a fair distribution of profits between the exploiters and the peoples who hold traditional knowledge. However, in practice, the patenting of the ancient knowledge of traditional peoples brings a big problem, because it ends up guaranteeing to the representatives of companies the intellectual property for that knowledge, now of exclusive use of its owner. In turn, in practice the sharing of profits with traditional peoples either does not occur, due to the difficulty of singularizing the ownership of this knowledge, or is insufficient. This dissimilarity can be identified by the low and derisory participation in the profits of traditional peoples in relation to some contracts for the exploitation of patents for traditional knowledge. Thus, it is possible to identify that this exploitation of traditional knowledge by industry, especially the pharmaceutical industry, requires extensive inspection by the public authorities, since, in some cases, it enters

circuits that were previously linked strictly to the domain of traditional peoples, based on a connection between man and nature.

It is noteworthy that these peoples have an extensive and historical use of sustainable food cultivation practices, since they use so-called "creole" seeds and natural pesticides. In this sense, it is necessary the adoption of actions regarding the "recognition of the value of the traditions and sustainable practices of traditional peoples goes hand in hand with the conservation of the natural resources that give rise to them."

Moreira believes that it is necessary to adopt a "bioeconomy of life," where economic growth and the maximization of production cannot neglect the lives of citizens, regardless of their social position. The environment and human existence are everyone's responsibility, and practices capable of combining the reduction of poverty without harming the rights of nature must be adopted.

The next decade will hold even greater challenges for production and sustainable development. One of them will be to implement practices that raise, encourage, and prioritize the cultivation of food from the adoption of local solutions, focused on the social problems of each country. For this, it is necessary that there is planning capable of increasingly including and valuing short production chains, through family farmers, as well as encouraging the use of organic agroecology techniques and, especially, by valuing culture, knowledge, and the relationship of traditional peoples with nature.

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