

Fragmentation of Brazilian Food System: Between Global Markets and Food Security

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Abstract The main purpose of this paper is to show the disconnection within Brazilian food system between the agro-industrial sector, mostly plugged in the global markets and the strategies of domestic food security. The methodological procedures adopted for this analysis are oriented by a critical view, mostly inspired in the notion of food regime, of how Brazilian food system has evolved, mainly by a dialogue with a relevant literature, both conceptual and empirical. By doing so, information related to foreign investment, food trade and consumption were referred to as to depict the disconnection between the most dynamic agro-industrial segments and the strategies of food security taking place in Brazil. Whereas the exploitation of the most fertile resources responds to the global capillarity of large corporations, significant proportions of food distribution are in the hands of small family farms by means of alternative trade mechanisms and State food policies. Even though agricultural exports have been very supportive for macroeconomic policies, there emerges a lack of cohesion within Brazilian food system given the loosen links between local food supply and the most dynamic agricultural segments. This contrast is analysed in the light the main features of the world food system, the ways food security is pursued, and also the pattern of food consumption in Brazil.

Keywords: *Brazilian food system, food regime, agribusiness, food security, food consumption*

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1. Introduction

The evolution of Brazilian agro-food system has been shaped by a puzzling contrast between the country's position in the world's markets and domestic food supply and consumption. As usually heard among ordinary people, how come a country endowed with a gigantic extension of fertile farming land still faces problems of food insecurity? The main purpose of this paper is to discuss the disconnection within Brazilian food system between an increasingly competitive agro-industrial sector in global markets and the strategies of domestic food security. In recent years, the most robust segments reaffirmed its competitiveness and a high profile in Brazilian GDP, being also responsible for more than one third of export revenues, mostly concentrated in few commodities like soybean, maize, sugar and ethanol, and meat. In order to analyse this evidence we trace back the path treaded by Brazilian agriculture especially after the mid-1960s when it was transformed into a large export platform. After the wave of green revolution hit most of its farming lands, Brazil became a strong player in the global agriculture when a complex agro-industrial structure, well connected with global commodity networks, was consolidated by a wide range of policies of technological dissemination, credit supply, favourable exchange rates, logistic infrastructure, and so on. At the

same time, though converging to international pattern of consumption, food supply to domestic market has largely hinged on small farming and traditional structures of production.

Overall, such a decoupling taking place in Brazil is inherent to the dynamics prevailing in the world food system, as such a manifestation of the corporate food regime, as defined by McMichael (2000), used here as a conceptual reference. Although very complex, from different aspects, agriculture and its related segments have its best resources exploited with large scale production utterly linked to foreign trade, under the control of large corporations, whose operations by no means have spread towards market structure and consumption patterns. From this perspective we argue that the notion of food system is more appropriate when applied to the world dimension, in which local activities are brought together into one dynamics by global agents. Consequently, the lack of cohesion within a country, as shown by the Brazilian food system reflects the evolution of the global food markets, making strategies of food security very challenging to government and to society as a whole. Therefore, as stressed in this analysis, the loosen links between local food supply and the most dynamic agricultural segments, requires a more active role by State to compensate the consequences of growing disparities in food system. In order to do so, we firstly picture the main features of the world food system based on the concept of food regime. Secondly, attention is given to the position of agro-food

sector in the world markets in the last decades. Thirdly, we discuss relevant aspects of food consumption in Brazil and some actions taken by government towards food security. Concluding remarks close this analysis.

2. Structural Features of the World Food System

The world economy has in recent times been depicted by a higher integration coupled with a growing deregulation of markets and capital flows, with deep impact on national economies. As in [6] social and economic relationships are uprooted from their local dimension and displaced into worldwide networks. Consequently capital internationalization, both through Foreign Direct Investment (FDI) and footloose investments, and trade relations have attracted national societies to a complex mesh formed in a global scale. As an encompassing ingredient of such a process, liberalization has pushed national governments to a less important role while free markets have taken a central position in the global governance. In fact, the role of state as a regulator has been replaced by that of serving the market, vindicating Strange's remarks that *"where states were once the masters of markets, now it is the markets which, on many crucial issues, are the masters over the governments of states"* [19]. In other words, rather than facing an arm wrestling with market, state has taken in global trends, though in tortuous ways, opening up national economies to trade and investment, to some extent juggling between local demands and the free market receipts concocted by multilateral organizations. As put in [10], *"Whereas development implied a national public sector to regulate the market and its outcomes, globalism seeks to discard or weaken the public welfare function in order to elevate the logic of the market"*.

Besides the relevance of the aspects shaping the global economy related to liberalization and the opposition between national states and markets, attention must be paid to the differences among countries, according to their position in the world economy as well as in geopolitics. Powerful nation-states exert greater influence on the world economy setting the agenda behind the global regulation, while less powerful ones are bound to play by the rules and adapt national strategies to the conditions produced in the global arena. The differences between nations will, thus, be determinant to the process of globalization, regarding both their power and interests and also the effectiveness of social movements to oppose to liberal regulations. Those in a better position to successfully compete in such a competitive environment are more likely to be unharmed by market vicissitudes. On the contrary, those adopting liberal guidelines, but even so subject to social vulnerability like food scarcity, tend to experience an opposition brewing within society through social movements aiming to mitigate the negative impacts of liberalization [16].

Global food markets evolved since mid-1970s amid trends of oversupply, mainly in the countries of Organization Economic Co-operation and Development (OECD), a cut-throat competition, government strategies to support farming activities and dumping stocks, while many poor countries were driven to a state of food scarcity,

increasingly relying on imports and foreign food aid programs. These conditions only aggravated with the persistent volatility of agricultural prices and trade disputes within the General Agreement Tariffs and Trade (GATT) and World Trade Organization (WTO). Hence, an agenda of market liberalization sponsored by multilateral institutions pushed the food system to the realm of an institutional and market globalization inspired by neo-liberal principles [21]. Also, national governments, despite implementing protectionist measures through export subsidies, price support and import tariffs, as well as expanding bilateral and regional trade relations, have adopted a friendly approach towards free market.

Having the concept of food regime as a reference, the world food system, submerged in such a process of deregulation, can be described through some key aspects. Firstly, the international trade of commodities, to a large extent replaced the North/South relation based on specialization and converted local food systems and markets as segments of a global structure. Besides responding to oscillations of supply and demand, agricultural trade has been deeply absorbed into the financial system in which commodities have been priced and traded as derivatives, disconnected from the real domains of production and consumption. Not only did different countries start to compete in the same markets, but exporting became top priority, particularly of the so called New Agricultural Countries [3], such as Brazil, which emerged as competitive players in the world food system in the 1970s. Simultaneously, food trade has gone beyond a flow of bulky commodities pipelined from large scale monoculture farming to processing plants abroad. Resulting from a heavy agro-industrialization process anchored in the world expansion of Transnational Corporations (TNCs), the scope of exports, especially of countries with competitive farming sectors, has included an increasing share of processed products ([7,17]).

Secondly, TNCs have connected local production into global networks by means of foreign direct investment and trade, reframing the food system across national boundaries. These companies have grown, for more than a century, into the most powerful agents of food system, not just as traders but operating in backward and forward activities of food chain, owning farming and processing capacity, developing infrastructure, marketing operations, etc. In short, they have historically crafted an integrated global system and also profited from it as its integration grows, by involving themselves in production, processing and trade of agricultural products. Moreover, their operations have strongly influenced the food system as a whole and also the particular forms by which food is produced and consumed all over the world.

According to [13] those companies have evolved through a process of wide diversification both economically and geographically, as their operations are no longer restricted to trading bulky commodities among a few countries. Their activities have also expanded into input supplying, food processing and distribution in a global scale, decisively influencing the integration of world food system through the internationalization of technologies, trade of processed products and consumption habits. As a significant aspect of this surge, food retailers have played a leading role along the food chain. As we can in [13] *"Supermarkets now reach down*

right to the fields where crops are grown, sometimes halfway around the world from where the crops are eventually sold. Supermarkets have truly penetrated every continent, though their presence is least well established in sub-Saharan Africa". Conversely, while the share of intermediate and processed products have increased in the global food trade, as compared to non-processed ones, traditional firms under the Anglo-Dutch-Swiss Food Cartel, like Cargill, Continental, Louis Dreyfus, Bunge & Born, André, e Archer Daniels Midland/Töpfer have expanded their operations within the agro-food chain, although stepping deeper in the trade of soybean, maize and wheat, and more recently engaging in activities connected to the production of biofuels. Overall, "...As a consequence, they continue to exert a great deal of influence over global food systems and over the lives and consumption patterns of farmers and consumers throughout the world" [13].

As a consequence, food trade has become more complex, and has gradually moved from local trade relations to a broader market environment under the rules of capital centralization and trade liberalization. A more deeply integrated world economy has thus favoured large scale operations carried out by TNCs as the driving forces of a global food industry setting the terms for competition and for the survival of local firms. Hence, food trade has taken place within global supply chains according to the strategies and decisions of those companies, after which intra-industry and intra-firm transactions have superseded traditional supply and demand based on factor endowments and comparative advantages.

As a direct outcome of the aspects depicted above and as a third feature of the world food system, food consumption has undergone a widespread change concerning both food preparation and eating habits. Resulting from massive urbanization, dissemination of kitchen white-goods, growing participation of women in the labour market and a new family structure, not only have processed, pre-prepared and half made meals invaded households, but eating out has also become a common feature of people's routine [5]. Alongside these movements fast food became a prominent aspect of urban life, as the role of domestic kitchen has been transferred to restaurants, snack bars, malls, and even the streets. Besides, the concept of one-handed food has comprised more than just sandwiches, chocolate bars, and the like, including take-away cooked meals eaten regardless where people are (street, bus, tube, workplace, etc) and what they are doing (reading, walking, working, etc) [9].

Such behaviour clearly reflects the internationalization of food industry and fast food networks, due to which a standard of food consumption is set worldwide and food itself has become global, detached from local seasons and environment. Also, attention must be given to the power of food industry to influence national policies and consumption habits through marketing strategies as well as national nutrition and food policies [14]. Thus, food industry, hitherto acting only in the product physical transformation, became global, spurred by a process of product diversification and a closer connection with neighbouring industries like pharmaceutical and chemical, besides food service networks supplying ready-to-eat and snack food [20]. Overall, processed food, by different forms, has been the bandwagon of a complex industry and

fast food network investing in every corner of the globe, disseminating consumption habits and integrating consumers into a global food system. These trends are clear manifestations of the present food order, branded as corporate food regime [11] or neoliberal food regime [16] which can be depicted, among other features, by power of TNCs, particularly the supermarkets, a liberal regulatory framework, global sourcing, *financialization* of food market, etc. [18]. Therefore, food system becomes global as transnational corporations extend the capillarity of their operations, and as a liberal agenda, sponsored by multilateral institutions, establishes the terms of trade, finance and food security agenda worldwide. Also, prices are set globally, as a compass to national agribusinesses, determining the positions of countries in global markets and in food system [12]. A global food system is thus formed by factors and agents bringing scattered countries and agricultural activities into a single environment, according to the process of capital accumulation set out globally.

In the light of these trends, whereas developed countries, at first food importers, became strong exporters, to a certain extent stimulated by mounting subsidies, dumping practices and food aid programs, many poor countries became dependent on foreign supply. The incapability of their agricultures to compete in domestic and foreign markets has jeopardized a national agenda for food security, just as global markets emerged as the ultimate source of food supply. In short, the vulnerability of farming and food processing structures in the underdeveloped world exposed many countries to the twists and turns of the global markets. However, of particular relevance for this analysis, developing countries such as Brazil emerged in the early 1970s as important players in global food markets, propelled on the one hand by a large scale and technologically developed farming and by a government strategy to increase exports and hard currency inflow in the context of an industrialization process based on import substitution.

3. Brazilian Food System and the World Markets

Having in mind that the notion of system implies a sense of connection and interaction, in which its elements exert some influence on each other, it becomes hard to use it as a simple description of different activities, agents, regions and communities in a country. More than this, however, a system suggests converging movements of its parts towards a certain dynamics. Even so, by referring to the Brazilian food system we intend to stress its fragmentation, or lack of cohesion, due to its multiple interfaces with the global arena, in which emerges a somehow chaotic environment in domestic food markets raising new challenges to the agenda of food security. Based on this caveat this item covers the evolution of agriculture towards competitiveness *vis a vis* the position of small family farming as a relevant mainstay of food supply.

In the last decades, Brazil became a competitive player in the world agricultural markets, when its share in world agricultural production more than doubled after 1960 reaching more than 6% in 2009, according to database

provided by the Food and Agriculture Organization (FAO) [2]. In the spur of green revolution in the 1960s, not only was the countryside transformed into an export platform of global commodities like soybean and meat, but a widespread process of technological innovation, known as agricultural conservative modernization, introduced farmers to new practices and inputs, such as seeds, pesticides, herbicides, fertilizers, etc. Simultaneously, landownership concentration continued, high scale production increased, small farmers were pushed off the countryside to the fringes of agriculture and to urban labour market, and movements for land reform receded.

As a side effect of such a strategy to transform agriculture, large areas of the *Cerrado*, in the Central-West region, were occupied by soybean plantations, through holdings of tens of thousands hectares or even larger. In the end, the most dynamic and competitive segments of Brazilian agriculture were connected to the mainstream of world food system, in line with the prevailing consumption pattern based on animal protein. Hence, a handful of politically influential landowners, together with land-grabbers, foreign investors, agro-industrial companies, have driven most of Brazilian farming land into the domain of global food system, mainly through the large scale cultivation of soybean and cattle ranching, a large part of which concentrated in Central-West and the Northern regions. Overall, landownership concentration has been a central mark of Brazilian agriculture up to the present days as shown by a Gini Index of 0,856 according to Brazilian Institute of Geography and Statistics (IBGE) data for 2006. On the same path, the average size of large holdings in 2003 was 1,910 ha, increasing 28% to 2,443 ha in 2010, whereas the figures for the small ones were 65 ha and 66 ha accordingly. As a different way of measuring it, holdings larger than one thousand hectares cover more than 43% of total agricultural land, whereas those of less than 10 ha occupy only 2.7%.

Two aspects must be taken into account for a broad view of such an evolution of Brazilian agriculture and agroindustry. Firstly, attention must be drawn to the prevailing conditions in the foreign market, particularly after China ascended in the world stage as the main importer of commodities, including soybean and other agricultural products. Secondly, agriculture became a key element for Brazilian government to deal with macroeconomic problems, under different circumstances, particularly those of foreign debts and an unbalanced current account. From the early 1980s until 1993, trade surplus of primary sector was vital for increasing the inflow of hard currency. Instead, until the late 1990s, local currency was overvalued under the Real Plan, and trade deficits were renewed under a surge of liberalization both abroad and internal management of economic policies. During this period, under the orientation of a neoliberal agenda, multinationals were ushered in to develop agricultural research, transport infrastructure to the shore were improved, regulations of land market become more flexible, and so on [1]. Finally, from the year 2000 onwards, as Brazilian industry consistently lost competitiveness, agribusiness came again to the fore, reinforcing the strategy by which commodities became the main exporting items, thus becoming the solution to foreign constraints. To illustrate this U-turn process to a

commodity based economy, the share of unprocessed commodities exports increased significantly from 23% in 1995 to 51% in 2014, whereas that of processed products reduced from 56.3 to 34.5% in 2014 [8]. Despite incentives by government coupled with China's preference for unprocessed agricultural commodities¹, the operations of a large agro-industrial park already built in the country kept the exports of semi processed ones (Figure 1). As already pointed out, many aspects have exerted deep influence on this evolution, not only from within the technological process of farming modernization but also those dwelling in the foreign markets, especially after China became a big importer and prices went higher, and in the government's economic policies.

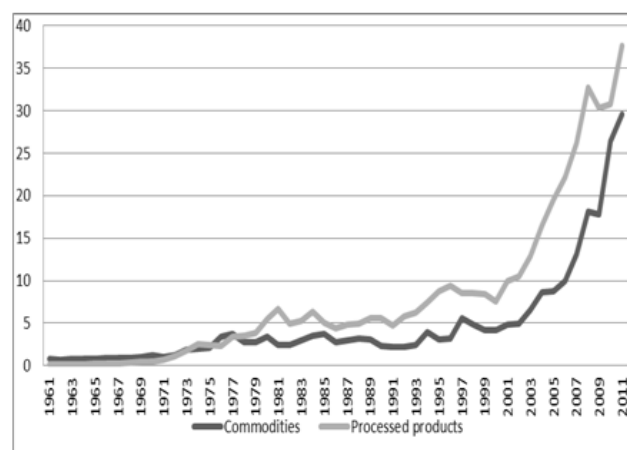


Figure 1. Brazil food exports according to processing level – US\$ bi

Source: Food and Agriculture Organization Database, 2014.

Since the early 1990s, when Brazilian government pursued monetary stabilization and adopted neoliberal policies in line with a wider exposition to the world economy, agribusiness became crucial for the economy and the leading economic sector in foreign trade relations. Such an approach, however, was kept after President Lula took office, when, though giving high priority to social programmes and income distribution, agribusiness still remained politically powerful and economically relevant. By doing so, government ratified the existing ambiguity of Brazilian food system, to the point of creating two ministries related to agricultural matters. While the Ministry of Agriculture deals with large scale farming segment, the Ministry of Agrarian Development covers a broad range of actions of social inclusion and food security, supporting traditional local communities and implementing programmes towards small family farming, food production and distribution, preservation of social, economic and cultural diversity, environmental sustainability, etc.

A first measure was then to expand the existing National Program of Family Farming (PRONAF), created in 1996, focusing on small holdings and food production. Another initiative was the creation in 2003 of Food Acquisition Program (PAA) by which incentives were given to a closer connection between small farmers and consumers through local market arrangements. Also,

¹ Soybean cake and oil accounted for 87% of the soybean complex exports in 1981, reducing to 27% in 2013, while the proportion of grain increased from 13% to 73%, as a result of the fiscal incentive granted by government.

National Program for School Food Supply (PNAE), though existing for decades was reinforced as a measure to lessen the magnitude of hunger and malnutrition of 42.2 million children, as for 2014. These programmes were implemented under the umbrella of Zero Hunger (*Fome Zero*), established as an inter-ministerial arrangement, a flagship of Lula's governmental policies. Even so, on the whole the actions of Brazilian government towards food system have kept the role of agribusiness as the main source of foreign reserves, while issues related to food security are dealt with through policies largely focused on complementary relations between supply and consumption. Furthermore, a myriad of initiatives taken by different organizations from civil society such as fair trade, local markets of organic food, groups of food purchase, and so on. Given the limits of scale to compete with large holdings, these have consisted of market niches for small farmers, based on which local family run agro-industries for food processing have been built.

Throughout this period competitiveness became a prominent expression in the analysis of Brazilian agribusiness. Largely oriented by the principles of comparative advantages, a broad range of assessment, by both officials and mainstream academics, has for decades regarded Brazilian agriculture as the food basket of the world. Based on this, conditions favouring exports, especially infrastructure, have been of great concern, due to the need to reduce costs to compete in global markets. Despite the growing complexity of domestic market, the export-is-what-matters emphasis of the seventies, given the strain of hard currency scarcity, growing foreign debt, and the deindustrialization process underway, is still a dominant trace of government policies towards agriculture. Likewise, export corridors became a high priority in the country, basically through motorways to the shore, an important item of the so called Brazil Cost, has been of great concern for the performance of agribusiness in foreign markets².

The position of Brazilian agribusiness as an export platform of bulky natural and semi-processed commodities sets the path of its becoming part of the world food system, largely deriving from the pattern of rural development in Brazil, through high level of technological performance and large scale production. Conversely, the fact that exports of processed products account for only 21% of Brazilian food industry revenues, while 79% derives from domestic sales, reflects its incapacity to compete in foreign markets ruled by TNCs, whose operations go beyond the boundaries of local markets. Despite the high weight of processed food in world trade, as stressed above, the position of Brazilian agribusiness in the global food system has been hinged on the dynamics of farming activities, given the share of unprocessed and semi-processed commodities in exports [15]. Thus, food production has largely become the source of raw material to a global industry, rather than boosting the competitiveness of local food industry. On the opposite way, the value of natural and processed food imports Brazil has increased, more noticeably in the years 2000, (Figure 2). At first sight this evolution indicates the process of integration between local and global food

systems by means of intra-trade transactions and trade flows within supply chains controlled by large corporations. Even so, it's remarkable, somehow, that food supply from abroad started to grow along the process by which agribusiness became more competitive and technologically developed.

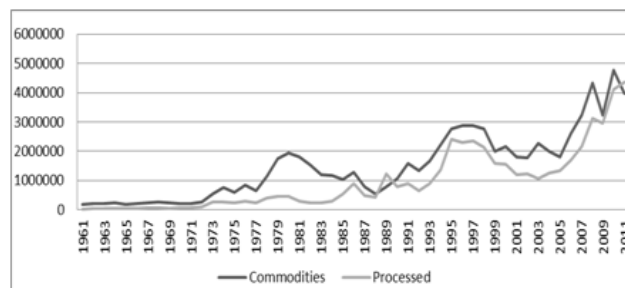


Figure 2. Brazil natural and processed food imports – US\$bi

Source: Food and Agriculture Organization Database, 2014.

During this process, and apparently contradictory to the above, domestic food supply, regarding agriculture, has mostly relied on small family farming, which, despite using only about 20% of the productive land is responsible for more than 70% of foodstuff production. That is, even though economically enfeebled and squeezed by a long lasting process of landownership concentration, as depicted above, this social segment has been strategic for the stability and diversity of domestic food market. Such conditions do not prevent, however, this segment from being lured into those more affluent markets, by either producing global commodities, like soybean in certain regions, or engaging in supply chains controlled by large retailers and food industry. As such, family farming is also brought to the interface between the Brazilian and the global food systems based on large scale farming and processing activities. That is, although Brazilian food system can be described by two dynamics, the dividing line between them can become blurred in the light of how food market has evolved, without major implications for food security. In other words, the system as a whole doesn't necessarily become more cohesive by the fact that family farms move to commodity production or engage in global value chains.

4. Conclusions

The main argument of this paper is that Brazilian food system has shown an unbalanced evolution throughout the years since the early 1960s. The wide range of transformations in the countryside as well as in urban areas, have made food market more complex, after which new connections, mostly with the global sphere, and new identities have been forged within the present system of food production, processing and consumption. Since purchase power became a dominant precondition for human beings to survive, the further trade expands the more diverse the source and the destination of food, particularly if markets are more closely integrated. Therefore, if from the viewpoint of the agroindustrial structure competitiveness in global markets is the driving force, from that of domestic food security three dynamics are combined. Firstly, food supply depends on small plots of family farming, although this doesn't mean they shun

² The fact that products move predominantly by roads together with a limited railway network and an almost untouched waterway system has negative impact on the cost of transportation and storage.

from certain commodities, in particular soybean, as noticed in the Southern regions of the country. A second dynamic can be spotted in the production of foodstuff, under the incentives of government policies and alternative arrangements by local communities and national organizations, mostly aiming agroecologically sustainable farming. Thirdly, food consumption has strongly converged to the prevailing international patterns, causing an increase of processed food consumption by both urban and rural population. To a large extent, this lack of cohesion mirrors the process by which Brazilian is gradually becoming fully integrated into the global food system. This, however, will depend on the effectiveness of countervailing actions disseminating more sustainable farming practices, transmitting reliable information on how important the consumption of natural and non processed food is, and organizing an efficient networking of local markets. Most of all, however, food system, as a whole is more likely to produce an environment of food insecurity, only reversible by means of State actions, which will depend on a political orientation towards social issues without leaving them in the care of market forces.

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