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## The geopolitics of Brazilian soybeans

Gustavo de L. T. Oliveira

Soybean plays a major role in the development of Brazilian agribusiness, and in turn in Brazilian geopolitical power as well. It is a pillar of Brazil's insertion into a 'new multi-polar world order' as basis for much Brazilian land ownership in neighboring countries, for the extension of political influence in Africa, and it is especially important for balancing trade with Brazil's new primary commercial partner, China. Yet the US dollar and North Atlantic transnational companies still control global soybean markets and production technologies. In a context marked by booming but volatile commodity prices, food crises, riots and revolutions in food-importing countries, a global rush for farmland, and severe droughts and climate change, the soybean agribusiness in Brazil takes on new and crucial geopolitical significance. I trace the geopolitical role it has served in consolidating the 'green revolution' in Brazil, and raise questions about the intersection between agroindustrial markets and currencies: could agricultural commodities serve geopolitical functions (and thus contestation) similar to those 'petro-dollars' have served since the 1970s? These considerations show how the political ecology of soybean shapes and is shaped by inter-regional and global-scale processes, and reveals new directions for research on the emerging geopolitical landscape of our century.

**Keywords:** globalization; multipolarity; agribusiness; flex-crops; commodity markets; reserve currencies

### Introduction

Soybean production, processing and trade have played a major role in the recent development of Brazilian agribusiness. Agribusiness as a whole is responsible for about 20 percent of Brazil's gross domestic product (GDP; CNA 2014a), and although Brazil is also the world's top exporter of sugar, coffee, orange juice and poultry meat, and the world's second biggest exporter of beef and maize, soybeans are the most economically important and strategically significant agroindustrial commodity produced and exported. Supplying 40 percent of the international market, Brazil has matched the United States to share global leadership in soybean exports. Soybean and its products (meal, oil and their derivatives) accounted for 12.9 percent of all Brazilian exports in 2013, second only to iron ore (13.4 percent), and significantly more than the next main export products, such as petroleum (7.2 percent), meat products (6.1 percent), land vehicles (5.8 percent), machinery (5.3 percent) and sugar and its derivatives (5.0 percent) (UN–Comtrade 2014). Soybean agribusiness is an illustrative case of broader changes in how Brazil is situated in the global political economy, but as a 'flex crop' that serves as the nexus of a new grain–live-stock–fuel complex, there is also something distinctive about soybean that draws special attention to its geopolitical significance (Oliveira and Schneider forthcoming). In this

contribution, I demonstrate how the development of the soybean agroindustrial complex has become a pillar of Brazil's insertion into a 'new multi-polar world order' (BRICS 2009).

Soybean cultivation is the basis for much Brazilian land ownership in neighboring countries, particularly Paraguay and Bolivia (Borras et al 2012; Galeano 2012; Urioste 2012). It is instrumental for the extension of political and economic influence in Africa (Cabral and Shankland 2013; Chichava et al 2013; Clements and Fernandes 2013). And it is especially important for balancing the growth of imports from Brazil's new primary commercial partner, China (Acioly, Pinto, and Cintra 2011; Jenkins and Barbosa 2012; Oliveira 2010). Yet the US dollar and North Atlantic transnational companies still control global soybean markets and production technologies: the three largest transnational seed companies (Monsanto, DuPont and Syngenta) control 55 percent of the global soy seed market, and, along with the three other leading agro-chemical companies (Bayer, Basf and Dow Chemical), they control 76 percent of global pesticide and herbicide markets (EcoNexus and Berne Declaration 2013; Silva and Costa 2012). Moreover, four transnational trading companies (ADM, Bunge, Cargill and Luis Dreyfus) control about 80 percent of international soybean trade, and in South America they control 50 percent of installed crushing capacity and 85 percent of soybean exports (Wesz Jr. 2014). The Chicago Board of Trade (CBOT) remains the main forum in which international soybean prices are set, hosting as well the largest share of soybean future market trading and hedging. These are familiar markers of the current 'corporate food regime', structured by the well-documented and widely discussed economic power and political influence of transnational agribusiness corporations (McMichael 2012; Murphy, Burch, and Clapp 2012; Patel 2008; Wilkinson 2009). Although this 'corporate food regime' is correctly associated with neoliberalization, many are apt to discount the persistent and intimate relations between the state and agribusiness development:<sup>1</sup> 'National borders are losing ground to a corporate-driven model of territorial organization', suggests Mariano Turzi (2011, 59). 'The new model is dictating production conditions and infrastructural developments; rearranging the geoeconomic space throughout Argentina, Bolivia, Brazil, Uruguay, and Paraguay into a single, unified "Soybean Republic"' (Turzi 2011, 59).

Even though soybean production technology and international trade remain largely controlled by North Atlantic transnational corporations, the diplomatic–military implications of extensive Brazilian-owned soybean farms in neighboring countries in South America cannot be ignored. Moreover, tax collection, international balance of payments and currency exchange rates are of utmost importance to the governance of the soybean sector in Brazil (as elsewhere), and for its *geopolitics* as well. Ultimately, this paper links the well-known history of the soybean sector in Brazil with new and understudied questions arising out of the political ecology of agribusiness and the contested terms of globalization in this new century. In this context marked by booming but volatile commodity prices, food crisis, riots and revolutions in food-importing countries, a global rush for farmland, severe droughts and climate change, the soybean complex in Brazil takes on new and crucial geopolitical significance – a significance that we are only beginning to understand.

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<sup>1</sup>There are notable exceptions, of course, especially within the recent 'land grab' literature (e.g. Wolford et al. 2013). Yet as I argue in my contribution to that special issue (Oliveira 2013), the 'land grab' framework is insufficient (and often inadequate) to capture the agroindustrial dynamics and geopolitical significance of these developments, especially in places such as Brazil and China, where domestic agribusinesses are becoming increasingly more powerful (cf. Oliveira and Schneider forthcoming; Sommerville, Essex, and Le Billon 2014; Wilkinson 2009).

But first, a brief note on the theorization of geopolitics. Although I call attention to the role and interests of the Brazilian state in the soybean complex, my purpose is nevertheless to contribute to a *critical* geopolitics that situates power not in the hands of sovereign states alone, but in more relational ways that traverse a spectrum of scales and struggles. Thus, by focusing on a globally interconnected agroindustrial sector and its relations within the interstate system, this analysis avoids the ‘territorial trap’, i.e. the geographical assumptions of traditional geopolitics and international relations that naturalized ‘the exercise of state power through a set of central political institutions’ and homogenized ‘the clear spatial demarcation of the territory within which the state exercises its power’ (Agnew 1994, 53). Investigating the soy complex in Brazil accordingly reveals how the geopolitical imperatives of the Brazilian state operate through private actors at home and abroad, and underscores their alliances and frictions with foreign states as well as transnational companies. This study therefore considers these multiple relations simultaneously in terms of conflicts between states, competition between companies and struggles between classes within Brazil and across the globe.

Still, the global soy complex (characterized by extensive transnational corporate control in inputs and trade) appears to serve as a textbook representation of the ‘growth of modes of exercising power that do not depend on imperative coordination by a territorialized state apparatus and that are independent of its borders on whatever scale they exist’ (Jessop 2002, 352; cf. Turzi 2011). Nevertheless, I suggest that the distinct and sometimes contradictory ‘logic of state’ and ‘logic of capital’ driving the Brazilian soybean complex are increasingly assembled into a relatively coherent project through which Brazilian agribusinesses and state defy policies and practices that favor EU- and US-based agroindustries and trading corporations, the predominance of the US dollar in international markets, and US state hegemony. Soybeans, in other words, are a key instrument with which Brazilian state and corporate interests cultivate political and economic power, seeking to establish themselves as leaders in a ‘new multipolar world order’.

### **Immigrant seeds and roots in the Green Revolution (1900–1970)**

Soybeans were first brought to Brazil in 1882 for agricultural research purposes, but it was only after 1908 that Japanese migrants began cultivating them consistently for their own consumption in southeastern Brazil (Shurtleff and Aoyagi 2009). This fact appears to carry little geopolitical importance, but it literally planted the seeds for a major transformation of the global agroindustrial regime and the role of Brazil in the contemporary interstate system. Even as an immigrant subsistence crop, soybean was already implicated in processes that recur in its geopolitical history. First of all, the incipient transcontinental cultivation of this nutritious legume helped the emigration of poor peasants from Japan (much akin to contemporaneous emigration from Europe), which reduced political pressures for land and wealth redistribution in their places of origin, and established human connections that would later prove instrumental to the global explosion of soybean production. This dynamic would then be replicated internally within Brazil by southern soybean farmers – with Japanese funding – who ‘occupied’ the central highlands of Brazil during the second half of the twentieth century and now generate the bulk of Brazilian soybean production and exports (more on which below).

This early role of soybeans in (immigrant peasant) agriculture in Brazil also permitted the ‘pacification’ and commercial integration of the hinterlands, i.e. the establishment of ‘legible’ state subjects and production processes over spaces hitherto contested by indigenous peoples and other ‘unruly’ *sertanejos* or country folk (Estevam 2004; Scott 1998). This

process began over the São Paulo and Paraná plateaus in southeastern Brazil from the 1900s to 1940s, where Japanese and European immigrants settled and established a commercially oriented production system distinct from the regimes of ranching *latifúndia* and sugar or coffee plantations that had dominated Brazilian agriculture since colonial times. Prior to their colonization, these regions were actively contested frontier zones, the stage of major revolts and land struggles, whether these were domestic struggles between different classes, like the ‘war of *contestado*’, or international struggles against neighboring countries, such as the Triple Alliance war against Paraguay (Fausto 1994; Foweraker 1981). These joint state-making and capitalist imperatives – the reduction of popular pressures for land and wealth redistribution in densely populated places, and the ‘pacification’ and integration of Brazil’s hinterlands through the settlement of a commercially oriented ‘farmer’ class – undergirded the colonization practice that became known as the ‘March Towards the West’ and enabled the domestic harnessing of technologies and techniques of the global phenomenon that was dubbed the ‘green revolution’.

The ‘March Towards the West’ was a state policy established under president Getúlio Vargas (1930–1945, 1951–1954) whereby the federal government and its state-government interveners promoted commercial agriculture as a means towards internal stability by providing an outlet for landless and land-poor peasant migrants, increasing the supply of cheap food for the growing industrial proletariat in southeastern Brazil, and increasing foreign exchange to finance import-substitution industrialization. Moreover, these imperatives linked the occupation of the ‘empty’ *sertão* (hinterlands) with fortifying external security, as nineteenth-century border conflicts with Bolivia, Argentina and the ‘stop-gap’ countries of Paraguay and Uruguay still weighed heavily in the politico-military concerns of the Brazilian elite. These geopolitical imperatives for the expansion of commercial agriculture onto the central highlands were explicitly projected by the leading strategists of the Brazilian military who served under Vargas’s administrations and who then assumed direct control of the Brazilian state through a military coup in 1964 (Freitas 2004). Most prominent among this military intelligentsia was certainly General Golbery do Couto e Silva, who promoted the expansion of commercial agriculture for the territorial occupation of central and northern Brazil against threats of neighboring state incursions and rural communist uprisings (Couto e Silva 1957).

During the early and middle decades of the twentieth century, however, soybean was not yet a prominent commercial crop in Brazil. With the exception of Japanese migrants, soybeans simply did not feature in Brazilian diets, and there was little commercial demand for them in the emergent oilseed industry of the country (Sousa and Vieira 2008). But soybean is a nitrogen-fixing legume, so commercial farmers began planting it in Rio Grande do Sul during the 1940s as green fertilizer to restore soils degraded by wheat and maize production, as these were reaching limits of productivity and pushing the agricultural frontier into uncultivated lands of the Cerrado ecosystem (Foweraker 1981; Hasse and Bueno 1996; Shurtleff and Aoyagi 2009). This crisis of productivity had become widespread across all areas of the world where extensive grain monocultures had been established, and it became disastrous when conjoined with severe droughts and soil erosion, as was the case in the US with the infamous ‘dust bowl’ of the 1930s (Mazoyer and Roudart 2006; Worster 2004). This crisis triggered processes of state reconfiguration, capitalist accumulation, transnational agricultural investment and technological innovation, dubbed the ‘green revolution’. Most narratives of this process, particularly those that regard it positively, limit themselves to technical aspects (development and extension of fertilizer, irrigation, improved hybrid seeds, state support and credit), but we must underscore its geopolitical dimensions as well in the context of the so-called ‘Cold War’.

The term ‘green revolution’ itself was coined in order to contrast with the ‘red revolution’ that communists were leading all around the world, and the geopolitical intent of orchestrating massive technical transformations to grain production in places like Mexico, India and the Philippines were explicit (Patel 2013). After all, communists were winning because landless peasants and poor workers were rising up against absentee or oppressive landlords and poverty wages, so unless agricultural productivity could be rapidly boosted and capitalist/state rule could be assured over the countryside, the international capitalist system – and the role of the US in leading it – were under grave threat of annihilation. This was particularly true in places where peasant-led revolutions had recently taken place (e.g. Mexico), and where peasant uprisings were growing in the proximity of the recently victorious communists in China (e.g. India and the Philippines), so it was not due to technical or philanthropic considerations that these were the places where the joint efforts of the US government, the Rockefeller Foundation and a series of agribusiness corporations came together with full strength to make a ‘green revolution’ (Patel 2013).

Between the 1940s and 1954, soy production grew 10-fold in Brazil, from around 10,000 to 100,000 metric tons per year (Shurtleff and Aoyagi 2009), and the country entered a period of rapid economic growth and massive social upheaval. The ‘March Towards the West’ was culminating with the construction of a new capital from the ground up in the center of the country, while new tractors, fertilizers and hybrid-seed technologies were allowing grain monocultures to expand vertiginously, displacing peasants and spewing workers from the countryside even faster than import-substitution industrialization created employment opportunities in the cities, which began to mushroom with slums. Agricultural workers, who had not benefited from the extension of labor rights to industrial workers during the Vargas era, began organizing themselves into semi-legal Peasant Leagues, often with support from the Communist Party of Brazil. They organized massive and widespread strikes for better wages and working conditions in sugarcane plantation zones, they also resisted displacement – sometimes violently – against land grabs by agrarian elites and sometimes they even launched occupations demanding land redistribution (Bastos 1984; Motta and Zarth 2008). Merely 18 days after the democratically elected president João Goulart declared the government would undertake agrarian reform (13 March 1964), the military overthrew him in a coup and installed a dictatorship that repressed the Peasant Leagues, outlawed the Communist Party and secured the continuation of the technical transformations of the ‘green revolution’ in the Brazilian countryside. As was explicitly advocated by the military intelligentsia and most sectors of the domestic capitalist class, Brazil had to remain the bulwark against communism in South America (Ianni 1979).

The geo-politician General Golbery do Couto e Silva was instrumental not only to the conceptual vision and justification for this coup and the consolidation of the ‘green revolution’ in Brazil, but also in its practical development through the Brazilian state *and agroindustrial corporations*. While still a colonel in 1954, Couto e Silva was the lead author of an influential ‘colonel’s manifesto’ that critiqued the Vargas administration – particularly João Goulart, who was then Minister of Labor – for raising the minimum wage and extending labor rights. This manifesto sparked a ‘national security’ debate that contributed to the destabilization of the Vargas administration and forced the resignation of Goulart (Freitas 2004). Five years later, upon the resignation of president Jânio Quadros, Couto e Silva again led the military in an attempt to prevent João Goulart (then vice president) from assuming the presidency. Interestingly, Goulart was in China at that moment negotiating the reestablishment of diplomatic relations with Brazil, something which Couto e Silva claimed was an indication of Goulart’s ‘communist sympathies’, but which ironically

became key for the contemporary boom of capitalist agroindustry in Brazil (enabled in great part by the growing Chinese demand for soybeans). Once the top military brass succeeded in overthrowing Goulart in 1964, Couto e Silva created and directed the National Information Services, which coordinated efforts to suppress communist propaganda and popular uprisings. Consequently, his influential ‘doctrine of national security’ began to shift from international defense of the borderlands against (implausible) neighboring incursions to focus upon the ‘pacification’ of landless peasants and poor rural workers who were being recruited into an endogenous communist movement (Couto e Silva and Franco 1967). Finally and very significantly for our current discussion, Couto e Silva took leave from the federal government to assume the presidency of Dow Chemical’s subsidiary in Latin America from 1972 to 1974, one of the main companies that provided fertilizers and pesticides for commercial agriculture in Latin America, thus illustrating the intimate connections between the geopolitical and economic interests of the ‘green revolution’ in Brazil, and the alliance of (mainly US) foreign capital with the Brazilian state in the context of the ‘Cold War’ (Evans 1979; Freitas 2004). The geopolitical and economic interests of Dow Chemical extended beyond Brazil as well, as Couto e Silva explained that Brazil is ‘a territorially satisfied nation’, but with diplomatic–military responsibilities to lead the ‘Latin, Catholic, and underdeveloped world’ into alliance with the United States and the rest of ‘Western civilization’ (Couto e Silva 1981).

Between 1954 and 1969, soy production grew 10-fold again in Brazil, crossing the threshold of 1 million metric tons (mmt) (Shurtleff and Aoyagi 2009). This growth came from curtailed losses of productivity in the south, and the early expansion to Paraná and the Cerrado on the central highlands. Soybeans were not yet the crown jewel of Brazilian agribusiness, but the roots of this sector had already been planted as part of a fundamentally geopolitical project of state and agrarian capitalist alliance, under the hegemony of the US and its agribusiness companies (Evans 1979; Morgan 2000), serving moreover as a military and agroindustrial platform for sub-imperialist control over the rest of South America (Marini 1972; Flynn 2007). Starting in the 1970s, however, a series of agroindustrial and geopolitical transformations converted soybean in Brazil from a useful green fertilizer and oilseed of secondary importance into one of the most important globally traded commodities, creating new diplomatic and economic opportunities for corporations and state agents from emergent economies, especially Brazil.

### **Agroindustrial and geopolitical restructuring (1970–2000)**

Soybeans have rapidly become the nexus of a new grain–livestock–fuel agroindustrial complex that has its origins in the United States, yet the growth dynamics of this agroindustrial complex also reveal the diminishing political and economic clout of the United States in the face of competition from net-agricultural-importing countries (such as Japan and China) and agroindustrial exporters among the major emergent economies, particularly Brazil (Oliveira and Schneider *forthcoming*). This transformation expresses the uneven development of capital, flagging the 1970s as a key turning point for familiar reasons: competition between US industries and the reconstructed Japanese and western European economies led to stagflation in the global North, which combined with an energy crisis (arranged by the Organization of the Petroleum Exporting Countries – OPEC) to transform international patterns of capital investment and circulation; consequently, global North financiers began tightening capital flows to ‘developing countries’, which triggered massive foreign debt crises (especially in Brazil) that forced a shift from import-substitution national development to ‘neoliberalism’, i.e. privatization of state industries and services, and de-

regulation of foreign investments and trade for export-oriented commodity production (Harvey 2005). But to understand why a focus on soybeans is especially useful to analyze this restructuring, we must first comprehend the history of its use as livestock feed.<sup>2</sup>

During the 1920s, US researchers discovered that adding vitamins A and D to livestock feed would allow year-round confinement, and by the 1940s, antibiotics began to be added as well to limit high mortality in these nascent concentrated animal feeding operations (CAFOs). Although soybean had been used primarily as a green fertilizer and occasionally as input for the production of edible oil in the US, wartime shortages during the 1940s expanded its use for edible oil and encouraged its use for the production of livestock feed as well. This oilseed, high in digestible protein and low in fiber, was then recognized as ‘a virtual protein pill’ for concentrated livestock, perfect in combination with maize on the farm level (where soybeans helped replenish the nitrogen taken up by maize) and also in CAFOs as cheap high-energy *and* high-protein livestock feed (Boyd 2001; Mason and Singer 1980). As agricultural and processing capacity in Europe and Japan were destroyed due to the war, the US became a major exporter of soybean oil *and* CAFO technologies during the 1950s. Then, as edible oil production recovered in Europe and Japan (along with the rest of their economies and per capita incomes), the strong demand for soybean oil was replaced by a strong demand for soybean meal for the new Japanese and European CAFOs. Consequently, soybean steadily displaced wheat and matched maize as one of the main agricultural products and exports of the US by the 1960s.<sup>3</sup> During this time, US soybean production and subsidized exports served the combined political and economic interests of Midwestern farmers and the US government in relieving a ‘peacetime’ surplus that would have drastically deflated prices, satisfying a growing middle class in the global North with more and ‘cheaper’<sup>4</sup> meat in their diets, and provided a valuable ‘carrot’ for the US government to coax non-aligned countries (eager for ‘cheap’ food imports to facilitate their industrialization/urbanization) into the US sphere of influence. This geopolitical role of US agroindustrial exports, or ‘food power’, has been extensively studied (e.g. Friedmann 1982; McMichael 2012; Morgan 2000; Patel 2013), so now I turn to the specific (and prominent) role of soybean as a key instrument for Brazil’s emergent agribusiness and state interests to challenge US hegemony.

The beginning of the crisis of US hegemony in the agribusiness sector may be marked by an apparent geopolitical victory over the Soviet Union that shifted the ‘Cold War’ from tension to *détente*: namely, the spectacular and unprecedented US grain exports to the USSR that began in 1973. Proximate causal factors were major droughts in the Soviet Union that reduced grain stocks, but the major long-term factor has been the great expansion of livestock feed demand for CAFOs in the Soviet Union, Europe and Japan. With the

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<sup>2</sup>The expansion and industrialization of grain and oilseed production and the expansion and industrialization of livestock production have been mutually reinforcing: ... increasing livestock populations were not only about increasing value-added opportunities in animal flesh, milk, and eggs, but were also about transforming structural grain and oilseed surpluses from a deflationary millstone into a steadily growing source of low margin earnings for large-scale farmers, processors and traders’ (Weis 2013, 73).

<sup>3</sup>Between 1941 and 1966, soybean acreage in the US increased by more than 500 percent, while production increased almost 800 percent, providing soybean meal for livestock feed much more cheaply and at a larger scale than ever before (Boyd 2001).

<sup>4</sup>The ‘cheapness’ of this meat production is in fact very deceiving, resting on an illusion of efficiency that ignores enormous state subsidies in the US and western Europe, and obfuscates even more dramatic social and environmental costs that are ‘externalized’ (Cavalett and Ortega 2010; Steinfeld et al. 2006; Weis 2013).



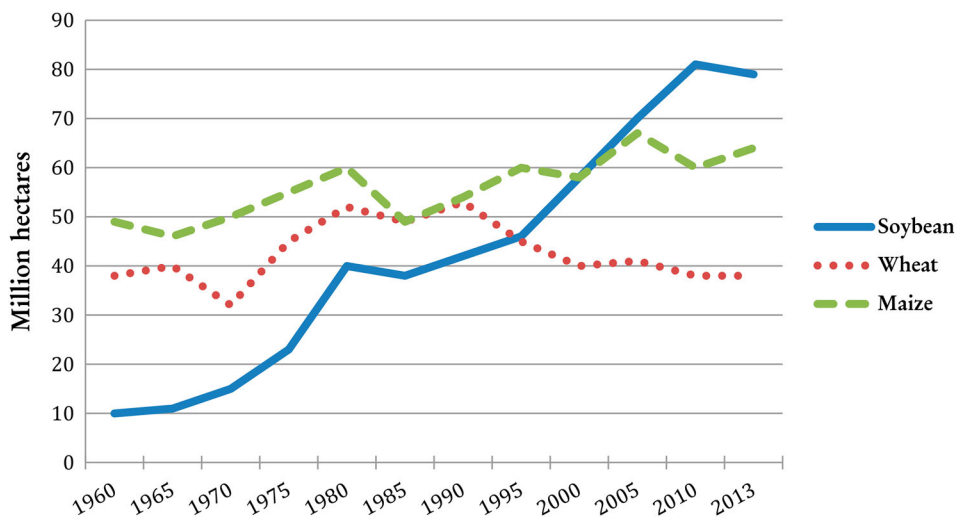


Figure 1. Area harvested in the western hemisphere, 1960–2012.

Source: Brown (2012), from the United States Department of Agriculture (USDA).

post-war US surpluses drained and global-scale restructuring of agroindustrial markets due to the ‘Cold War’ *détente*, the US government imposed embargos on soybean exports. This further destabilized international grain markets and encouraged major soybean and grain importers – particularly Japan and western Europe – to join with emergent soybean and grain exporters – especially Brazil and Argentina – to expand production for international markets (Morgan 2000; Patel 2013). Globally, between 1961 and 2009, soybean production area increased by 400 percent, and, combined with increases in yield per hectare, soybean output grew more than 800 percent. Only 6 percent of all soybean produced globally is consumed directly as human food, while 98 percent of the remainder is crushed for livestock feed production (HighQuest Partners and Soyatech 2011; WWF 2014). Figures 1 and 2 illustrate the fast increase of soybean production in the western hemisphere (mainly the US, Brazil, Argentina, Canada and Paraguay), and the growing share of the Brazilian contribution to international markets.

This expansion of soybean agribusiness in Brazil reflects and reinforces a state-making logic of capital accumulation and geopolitical maneuvering. In order to expand soybean production in Brazil, for example, branches of the federal government’s National Company of Agricultural Research (EMBRAPA) were created for the development of commercial agriculture in the Cerrado region (Embrapa-Cerrados, est. 1971) and for soybean research and development in particular (Embrapa-Soja, est. 1975), devising significant interventions in the pH and nutrient availability of the soils that rendered it profitable for the intensive production of soybean varieties adapted to the Brazilian climate (CPAC 1975).<sup>5</sup> Given the Japanese state’s intention to increase the availability of grain and oilseeds on international markets, their interests came together with the Brazilian state’s to expand

<sup>5</sup>Funding for Embrapa-Cerrados (CPAC) came from the federal government’s Development Program for the Cerrado (POLOCENTRO), which also financed road improvement, rural electrification, grain storage units, land clearing, production, commercialization, capital goods acquisition and harvest expenses in the Cerrado (Jepson, Brannstrom, and Filippi 2010).

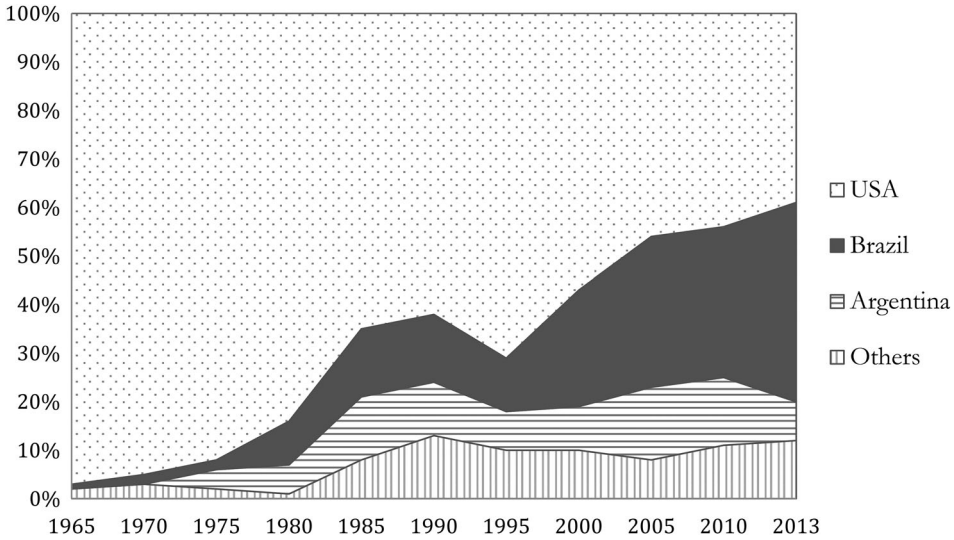


Figure 2. Share of global soybean exports (1965–2013).  
Source: USDA (1965–1970; 1975–1995; 2000–2013).

agribusiness in the central highlands. The Program of Directed Settlement of the Alto Paranaíba (PADAP), for example, granted public land for the establishment of four agricultural settlements in the Cerrado region of Minas Gerais state in 1973. The Japanese International Cooperation Agency (JICA) provided credit and technical support for soybean and other grain production under PADAP, which also included the construction of transportation, energy and communication infrastructure (Hollerman 1988; Yoshioka 1992). The beneficiaries were small-scale market-oriented farmers from the southeast of the country, among whom 80 percent were Japanese immigrants or their descendants (Pires 2000). This was not coincidental, as JICA was building upon personal connections that reached back to the early days of Japanese migration to Brazil.

The success of PADAP encouraged further negotiations between JICA and the Brazilian state in 1975, which resulted in the expansion of the PADAP model into a region-wide Japanese–Brazilian Cooperation Program for the Development of the Cerrado (PRODECER) (Martins and Pellegrini 1984).<sup>6</sup> Moreover, this program had impacts far beyond the directly benefited farmers, since its infrastructure improvements dovetailed with other public policies (especially production credit by the Bank of Brazil) and, in effect, subsidized private investments by southern Brazilian soybean farmers, whose migration into the Cerrado established a tendency towards farmland concentration and agroindustrial integration across the soybean sector in Brazil (Jepson, Brannstrom, and Filippi 2010; Hecht

<sup>6</sup>Three stages have since been implemented in Cerrado regions, which have benefited 758 farmers, settled in 21 projects across seven states, producing mostly grains over a total area of 353,748 hectares (MAPA 2002). Currently, negotiations are stalled over a projected fourth stage that would expand the program into the Cerrado–Amazon transition zones of Maranhão, northern Mato Grosso, Rondônia and Pará, establishing an additional 60 settlement projects over an additional 41,000 hectares (Jepson, Brannstrom, and Filippi 2010), most likely because the focus of Japanese–Brazilian agroindustrial cooperation has shifted to Mozambique, with the ProSAVANA program discussed below.

2005). In the first 5 years of the 1970s, Brazilian soybean production grew 10-fold yet again, reaching 10 mmt (Shurtleff and Aoyagi 2009).

Thus, Brazilian and Japanese geopolitical interests coincided in expanding production, processing (especially by crushers in Japan) and consumption of soybeans (by CAFOs in Japan and Brazil) through new trade and investment circuits that explicitly sought to sidestep US corporate and state control. Furthermore, these efforts to diversify commercial partners in the soybean complex are not limited to a bilateral relation between Brazil and Japan, but characterize a global trend that increased during the 1990s with the devaluation of South American currencies and reduction of commodity export taxes in Brazil and Argentina, and then accelerated further with China's reduction of import tariffs and entry into the World Trade Organization (WTO) in 2001. Between 1990 and 2014, the US share of world soybean production declined from 50 percent to 31 percent as Brazil's share increased from 18 percent to 31 percent, and the US share of world soybean crush declined from 37 percent to 19 percent, while Brazil's share increased from 15 percent to 16 percent and China's share jumped from 4 percent to 29 percent (Oliveira and Schneider *forthcoming*). China is now the largest and fastest growing market for soy and its products, particularly due to rising demand for pork and poultry CAFOs (Peine 2013; Schneider 2011). Brazilian agribusinesses – and their partners in the Brazilian state – are increasingly drawing upon strategic partnerships with companies and government agencies beyond the US and EU to consolidate their joint economic and *political* interests in weakening the economic power of the global North, and increasing their influence over the construction of the emerging global food and agroindustrial order (Hecht and Mann 2008; Wilkinson 2009). These are increasingly reflected in the sub-imperialist role of Brazilian soybean agribusiness in South America, its influence through 'South–South cooperation' for the expansion of commercial agriculture in Africa, and its relations with China and other countries of the global South through bilateral agreements and multilateral forums of international governance such as the WTO.

### **Sub-imperialism and South–South cooperation (1970–present)**

The notion that Brazil plays a 'sub-imperialist' role in South America harkens back at least to the conflicts with Argentina that resulted in the creation of Uruguay as an independent 'stop-gap' state (1811–1828), the Triple Alliance war against Paraguay (1864–1870) and the conflict with Bolivia over Acre state (1899–1903), but it gained new traction during the military dictatorship period and context of the 'Cold War' as discussed above (Marini 1972).<sup>7</sup> Paraguay not only suffered the most violent Brazilian military incursion ever, but it also remains the main site of Brazilian sub-imperialist expansion, as soybean production constitutes the predominant economic activity of *Brasiguaios*, the Brazilian term for its migrants who dominate eastern Paraguay. This process began with the introduction of commercial soybean plantations during the 1970s, which was facilitated by the close geopolitical ties between the military dictatorships in both countries. These ties were institutionalized in the 'Friendship and Cooperation Treaty' of 1975, which protected the presence of Brazilian soybean farmers in eastern Paraguay (Galeano 2012; Zibechi 2009).

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<sup>7</sup>Like Marini (1972), I use the term 'sub-imperialism' to designate a state practice of extending political and economic power beyond its borders, while remaining relatively subordinate to a greater imperialist power in the broader political and economic context.

The recent democratization process in both Brazil and Paraguay did little to alter the geopolitical terms of this cross-border soybean complex. In 2008, for example, the center-left democratically elected president Lula enacted Decree 6.592, which regulates the National Mobilization System dedicated to confronting ‘foreign aggression’. The decree defines foreign aggression as ‘threats or injurious acts that harm national sovereignty, territorial integrity, the Brazilian people, or national institutions, *even when they do not constitute an invasion of national territory*’ (Brazil 2008, emphasis added). The broader context of this decree was the Bolivian nationalization of the Brazilian-owned oil and gas industry in 2006, but the more proximate incentives were increasingly militant agitation by landless peasants and indigenous peoples in Paraguay for redistribution of Brazilian-owned soybean farms. The aftermath of this decree aptly characterizes the ambiguous and sometimes contradictory geopolitical imperatives of Brazilian agribusiness and state agents. On the one hand, the Brazilian state sent a strong signal that expropriation of Brazilian-owned soybean farms in Paraguay would produce strong diplomatic and economic (if not military) reactions. But, on the other hand, when Paraguayan and *Brasiguayan* agribusiness leaders joined conservative politicians in Paraguay to depose Fernando Lugo in 2012 (a center-left president in Paraguay who proposed agrarian reform), the Brazilian government condemned the coup and temporarily suspended Paraguay from Mercosul (The Economist 2012). This allowed the entrance of Venezuela into the trade bloc, which had been obstructed by the Paraguayan legislature.

Despite this ambiguity and some contradictions, Brazilian soybean agribusiness and state interests coincide in a broader process of ‘South–South cooperation’ that has South American integration as its main pillar (Ribeiro and Ramos 2009). Brazil leads ‘South–South cooperation’ to assemble political, infrastructural and economic measures for integration that unsurprisingly benefits most directly the state-owned Petrobras oil company and a few major Brazilian construction conglomerates, the majority of their projects financed by the Brazilian National Bank for Economic and Social Development (BNDES; Flynn 2007; Robinson 2008). This also facilitated the expansion and consolidation of Brazilian agribusiness interests – especially soybean production – in Paraguay, Bolivia and Uruguay (Borras et al 2012; Galeano 2012; Urioste 2012). Brazilian soybean agribusiness is even taking advantage of reforms in Cuba to make inroads there, where Lula recently brought Senator – and biggest soybean producer of the country – Blairo Maggi to promote Brazilian agribusiness technology and production relations. Lula’s own words are very informative about ‘South–South cooperation’ as a geopolitical alliance between Brazilian state and private agribusiness interests with (sub-imperial) ambitions across Latin America and Africa:

I find that now we begin a new form of cooperation, beyond the desire of the Cuban comrades for the [Brazilian] EMBRAPA technicians to stay longer, which I think the Brazilian government will allow. Senator Maggi told the ministers of Agriculture *and Defense* that we are disposed to receive as many Cuban technicians as you desire to accompany the production cycle [in Mato Grosso], to increase the productivity of maize and soy . . . . It was very important to bring this businessman here, he [Blairo Maggi] is the biggest producer of soy in Brazil, he has all the technologies needed to help you. In addition to EMBRAPA, which is a very high quality scientific institution, the Brazilian *private* sector also has important scientific institutions, and we want to do everything possible to help not only Cuba, but also other Latin American and African countries to develop. And the best way to help is to take knowledge, make it so that people have access to modern technology, that’s it! (Instituto Lula 2014, emphases added)

Thus, Brazilian presence and influence in these countries must be considered beyond the territorial control of Brazilian soybean farmers alone, as prominent in Paraguay and

Bolivia. In fact, even in these countries, the extension of Brazilian agroindustrial technologies and expertise through EMBRAPA and private institutions plays a fundamental role (Mackey 2011; The Economist 2010), as well as the extension and pavement of highways by Brazilian construction companies (financed by the BNDES) to facilitate exports of soybeans and other agricultural and mineral commodities through Brazil (Arellano-Lopez 2012).

Shifting focus to Africa, the literature reveals growing attention to Brazilian agribusiness and state interests under the rubric of ‘South–South cooperation’ (Amanor 2013; Cabral and Shankland 2013; Cesarino 2013), as was also evident in Lula’s quote above. During the last decade, the Brazilian state has made considerable efforts to increase diplomatic and economic collaboration with various African states: it increased official visits by the head of state from zero-to-two per administration to 12 during Lula’s two terms (2003–2011), increased its embassies in the continent from 18 to 37 (of 54 African states), and expanded trade from USD 5 billion in 2002 to over USD 56 billion in 2010. Brazilian investments by private and state-owned enterprises have also grown significantly, crossing the USD 10 billion threshold in 2009, but these remain largely concentrated in petroleum, mining and infrastructure sectors (Barbosa, Narciso, and Biancalana 2009).

An important characteristic of growing Brazilian economic and political influence in the global South, especially Africa, has been its articulation through a new discourse that replaces the global North’s ‘development aid’ with ‘South–South cooperation’ or ‘horizontal collaboration’. Celso Amorin, Brazilian Minister of Foreign Affairs from 2003 to 2011, said: ‘South–south cooperation is a diplomatic strategy that originates from an authentic desire to exercise solidarity toward poorer countries. At the same time, it helps expand Brazil’s participation in world affairs’ (quoted in Dauvergne and Farias 2012, 909).<sup>8</sup> Indeed, national interests are evident in Brazilian agroindustrial cooperation and investments in Africa, most notably in the sugarcane sector in Angola, in cotton production and processing in Benin, Burkina Faso, Chad and Mali, and in the grain–livestock–fuel complex in Mozambique (Cabral and Shankland 2013; Cesarino 2013; Inoue and Vaz 2012). The project in Mozambique in particular has justifiably received the most attention, as it appears to be larger than all other Brazilian agroindustrial investments or ‘collaboration’ in Africa.

Formally called ‘Triangular Cooperation for Agricultural Development of the Tropical Savannah in Mozambique’, the program is more commonly known as ProSAVANA, and involves a three-way cooperation agreement between Mozambique, Brazil and Japan. The trilateral collaboration involving Japan follows directly upon the Japanese–Brazilian PRODECER program discussed above, with the Brazilian Cooperation Agency (ABC) channeling the Ministry of Agriculture to recreate the commercial success of PRODECER in the ‘Nacala Corridor’ of Mozambique (Chichava et al 2013; Clements and Fernandes 2013). Assembling Japanese capital, Brazilian agroindustrial technology and Mozambican land and labor, the project serves primarily the combined interests of the net-grain importing Japanese state and its general trading companies (*sogo shosha*), which will be able to

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<sup>8</sup>‘Brazilian governments have consistently emphasized that Brazil’s foreign assistance is an alternative to traditional donor relations, with their hierarchical treatment of the recipient. Brazil has instead sought to go beyond hierarchy and national interests by emphasizing the language of “partnership” and “collaboration” . . . . At the same time, Brazil’s provision for technical cooperation has been related, though often indirectly, to its broader foreign policy objectives [such as] opening and consolidating markets for Brazilian goods and services’ (Inoue and Vaz 2012, 530).

control and profit much more from Mozambican soybean and grain exports than they can now from Brazilian or other exports. ProSAVANA attends as well the combined interests of the Brazilian state and agribusinesses, which expand their influence and profits while literally externalizing the negative social and ecological costs generated by PRODECER. Mozambicans themselves are not passive in this process, as domestic elites play a crucial mediating role in this trilateral collaboration, while peasants and landless workers actively resist the implementation of the project (Fairbairn 2013). Popular criticism in Mozambique increased especially after a leaked program master plan showed no measures to avoid the replication of the negative social and ecological consequences of PRODECER (Justiça Ambiental et al. 2013).

Despite the attention to Brazilian state engagements with the development of agribusiness in Africa, the role of *private* Brazilian agribusinesses and actors in Africa remains largely understudied, unlike the situation in South America discussed above. A major challenge to undertaking this research is that private Brazilian agribusiness actors in Africa are not usually landed proprietors engaged directly in production, as is the case in Paraguay or Bolivia, but rather technical consultants ‘piggybacking’ on the institutional connections established by Brazilian state agencies, especially the state-owned agricultural research company EMBRAPA (cf. Mackey 2011; Cesarino 2013). In my interviews with soybean agribusiness professionals in Brazil, I often encountered reports from my interviewees that they themselves or their colleagues are increasingly taking on private consultancies in Africa (especially in Angola, Mozambique, Ghana and Sudan); yet most evidence of this private ‘South–South cooperation’ remains anecdotal. Whether and how these private agribusiness collaborations in Africa articulate with Brazilian state interests remains to be investigated more carefully.

It becomes increasingly clear that Brazilian agribusiness leaders – and those in the soybean sector prominent among them – are new protagonists of global agroindustrial production networks and multilateral governance institutions. This follows upon a transformation of the very character of soybean farmers in Brazil (and Argentina). Unlike the entrepreneurial soybean family farmers from the Midwest of the US, the largest and most politically powerful Brazilian soybean farmers have expanded to the scale and organizational structure of veritable agribusiness enterprises: ‘The classic image of poor farmers and rich ranchers is replaced by one of rural managers, most of them with university-level education, living in cities and specialized in business management. The MBAs [Master of Business Administration] are replacing farmers’ (Gudynas 2008, 515). A highly integrated agroindustrial sector like soybean in Brazil, therefore, has produced a new class of Brazilian agribusiness professionals that increasingly operate in and through the Brazilian state to engage multilateral governance institutions such as the WTO. Sugarcane-ethanol producers and cotton producers (who always rotate their cotton fields with large amounts of soybean and maize) successfully won WTO arbitrations during the 2000s against US-government subsidized agribusinesses. Thereby, they developed such diplomatic savvy and technical expertise at the WTO that they were able to define the G20<sup>9</sup> position during the Doha Round, portraying their particular commercial interests (as competitors against the US and EU in agroindustrial export markets) as a generalized interest of the global South (Hopewell 2013; Margulis 2014).

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<sup>9</sup>The Group of 20 developing countries established at the WTO in 2003 under the leadership of Brazil, South Africa, and India; not to be confused with the Group of 20 major economies.

This growing expression of Brazilian geopolitical power, largely through the soybean sector and other agribusinesses, might not be in the interest of several small and less industrialized countries in Latin America, Africa and Asia, but it does find decisive resonance with China's growing political and economic interests, as evidenced by the progressively closer ties between the Brazilian and Chinese governments and the mushrooming trade between these countries. About 48 percent of all Brazilian exports to China are constituted of soybeans and soy oil, and Brazil supplies half of all Chinese soybean imports (UN–Comtrade 2014). In order to administer this growing trade, the Brazilian and Chinese central governments have been holding increasingly more frequent government talks at all levels, including yearly presidential BRICS<sup>10</sup> summits since 2009, and establishing multiple bilateral agreements under the umbrella of a Joint Action Plan to coordinate economic, cultural and political exchange in the future decade. Yet the Brazilian manufacturing sector has been stridently opposed to the continuation of the sharply asymmetric trade between Brazil and China, whereby Brazil exports almost exclusively raw commodities but imports an extensive array of manufactured products. They and many economists warn about overvaluing the Brazilian currency and the 'threat of de-industrialization' in Brazil, leading to the loss of manufacturing competitiveness and market access domestically, as well as in Latin America and Africa (Jenkins and Barbosa 2012; Powell 2011). Others, however, point out that the Brazilian state could harness foreign reserves and infrastructure investments from China to upgrade its industrial capacity (shifting from crude oil, iron ore and soybean exports to the expansion of its petrochemical, steel, food processing and meat processing industries) and thereby also finance the extension and improvement of social services (Acioly, Pinto, and Cintra 2011; Oliveira 2010). Although the number of actual Chinese partnerships accomplishing this 'upgrading' remains relatively small, especially in agribusiness sectors (CEBC 2012, 2013), Brazil's massive exports to China have indeed strengthened the Real and built up foreign currency reserves, which in turn have allowed the Brazilian state to pay down its foreign debt and significantly improve its international credit rating (Inoue and Vaz 2012). The geopolitical implications of these financial and monetary effects of Brazilian soybean exports to China are discussed in the following section.

### **Soy-dollars in an age of 'scarcity' (1995–present)**

Given the increasingly significant intersections of climate change, agroindustrialization and volatile commodity prices (Borras et al. 2014; Moreira 2013), the geopolitical implications of Brazilian soybean agribusiness extrapolate the direct territorial and politico-economic considerations raised above, and find their greatest expression as an instrument for the Brazilian state and agribusinesses to expand their power in the intersecting volatility of climate change and currency markets.

Consider the growing trope that climate change is inaugurating an 'age of scarcity' in which control over unstable food production and dwindling water resources becomes the cornerstone of any state's national security interests. This vision, which had some traction during the 1970s due to the (OPEC-organized) energy crisis and ensuing high food prices, regained popularity after the 1990s due to greater effects and awareness of climate change, and became widespread during the late 2000s when a conjunction of financial, energy and environmental crises hurled agricultural commodity and food prices to record highs:

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<sup>10</sup>Brazil, Russia, India, China and South Africa

With anxious markets sustaining one shock after another, food has quickly become the hidden driver of world politics. And crises like these are going to become increasingly common. The new geopolitics of food looks a whole lot more volatile – and a whole lot more contentious – than it used to. Scarcity is the new norm. (Brown 2012, 23)

Consequently, control over (and profit from) soybeans in Brazil and neighboring countries in South America, which have the greatest potential for agroindustrial expansion, takes on new and crucial geopolitical significance:

The strategic importance of the Soybean Republic [sic] is that it contains a ‘vital space’ that secures access to food and water resources. In the coming decades, demographic and climate trends will determine the rise of these resources to a higher degree of importance than oil, as importing countries intensify their quest for food resources. (Turzi 2011, 66)

We must be careful, however, with this discourse that naturalizes scarcity as a given condition of our times. Scarcity cannot be merely viewed as a ‘natural’ phenomenon; it is embedded in social relations with particular historical geographies. Above all, the current ‘scarcity’ results from particularly inefficient forms of resource use, as has been repeatedly shown to be the case of soybean production for biodiesel and livestock feed, that largely benefits powerful state and corporate actors (Cavalett and Ortega 2010; Steinfield et al. 2006; Weis 2013). This is not to deny that climate change and environmental degradation are negatively affecting agricultural production around the world, and that domestic and transnational capital flows into the Brazilian soybean complex (and other farmland and agroindustrial investments around the world) amount in large part to water-seeking land grabs (Franco, Mehta, and Veldwisch 2013).<sup>11</sup> But rather than seeing this as a neo-Malthusian ‘fact’ due to climate change, we must analyze this ‘scarcity’ in terms of anthropogenic, political and economic struggles taking place simultaneously as conflicts between states, competition between companies and struggles between classes all around the world (Sommerville, Essex, and Le Billon 2014).

Therefore, it is more accurate to regard the problems associated with climate change in terms of price volatility and uneven access to food and resources across *class* divisions rather than naturalized scarcity ramping up simple Westphalian state competition. Doing so reveals more than coincidental similarities between climate-induced uncertainties and financial speculation on volatile commodity and currency markets. After all, the commodity price spike of 2007–2008 occurred primarily because of the massive inflow of speculative capital that was divesting from the real estate bubble in the US and finding no safe haven in the insolvent financial institutions of Wall Street, London or in US dollar reserves. This financial restructuring triggered in turn a sudden rush for farmland and agroindustrial investments that seeks to diversify production factors of agroindustrial commodities, thereby transforming both financial *and* ecological volatility from structural vulnerabilities to opportunities for windfall profits (Grain 2008; HLPE 2011). In other words, expanding and broadening one’s portfolio with transnational operations enables an agribusiness company (and financial institutions lending to or owning stocks in agribusiness companies) to make extra profits from its operations in Brazil, for example, when there are major droughts or financial crises in the US, and vice versa. In addition, large-scale commodity

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<sup>11</sup>‘Water grabs’ and their articulation with agroindustrial and geopolitical interests must also consider the dredging of rivers and waterway infrastructure construction for agribusiness exports (e.g. Mamone 2007).



trading companies and agroindustrial input providers (who profit largely as well from the provision of credit and future market contracts with agricultural producers) are able to speculate in the CBOT and regional boards elsewhere through hedging and future markets to generate scandalous profits precisely due to this record volatility in commodity markets (Murphy, Burch, and Clapp 2012).

So far, these transformations seem to reinforce the notion that transnational agroindustrial corporation interests are the ultimate force shaping the current corporate food regime over and above states' geopolitical concerns (McMichael 2012; Turzi 2011), yet these studies have largely neglected the significance of currency markets and their intimate relations with agroindustrial commodities. Perhaps economists have largely insulated themselves from these debates as well, but not without warning about the growing importance of international monetary politics:

International relations, political as well as economic, are being dramatically reshaped by the increasing interpenetration of national monetary spaces. Market-driven currency competition alters the distribution of resources and power around the globe. It generates mounting tensions and insecurities – potential threats to global stability as well as promising opportunities for cooperation. (Cohen 1998, 3)

An incipient effort at combining these insights is taking place in the 'land-use change' literature (Arcand, Guillaumont, and Jeanneney 2008; Richards et al. 2012). Considering Brazilian soybeans, for example, it is abundantly clear to anyone working in or observing the sector that the currency exchange rate between the US dollar and the Brazilian Real is of utmost importance: after all, a major part of soybean production costs in Brazil are in dollar-denominated inputs such as imported seeds, pesticides and fertilizers, while prices in the international markets to which half of all Brazilian soybean production is devoted are set in US dollars at the CBOT.<sup>12</sup> Consequently, the soybean complex in Brazil not only moves billions between US-dollar and Brazilian-Real currency markets each year, but it also significantly influences the Brazilian state's financial and monetary policy, helping to generate a positive balance of trade and foreign reserves as long as dollar-denominated soybean exports outpace dollar-denominated input imports. By the same token, Brazilian monetary policy also affects the ability of US and other soybean exporters to obtain favorable terms in international markets, as evidenced by the linkages between the devaluation of the Brazilian Real and a contraction of US soybean exports (Andino, Mulik, and Koo 2005; Richards et al. 2012). Thus, even though agroindustrial producers, processors and traders have strong incentives to operate transnationally, doing so ultimately requires favorable monetary policies (in addition to favorable fiscal policies, labor and environmental regulations, etc.), which enables states to exercise great control over agroindustrial development for their own geopolitical purposes.

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<sup>12</sup>A major obstacle to agricultural expansion in recent years has been the rise in the local currency, the Real. Although a stronger Real results in cheaper inputs such as imported fertilizer, chemicals and machinery, it makes Brazilian farmers less competitive on the international market and cuts into already-tight profit margins. Soybeans provide a clear example of the impact of currency variations on competitiveness. When the Real was devalued at the end of the 1990s, making Brazilian products more competitive on the global market, the area planted to soybeans expanded rapidly, peaking in 2004. When the Real started to strengthen in 2003, the expansion of soybean acreage halted. (There is a lag between the decision to plant, which is influenced, among other things, by currency expectations, and the actual planting. Since 2007, acreage has increased again despite the strong Real as a result of factors such as vibrant demand from China and low corn prices) (EIU 2010, 12).

There is an extensive literature on the international political economy of money and ‘commodity currencies’ that is very useful for deeper and more nuanced considerations of the geopolitics of soybeans in Brazil (and agroindustries more generally). ‘Commodity currencies’ are currencies of countries where agricultural and/or mineral commodities constitute an important share of exports, and thus their exchange rates are largely dependent on commodity prices (Cashin, Céspedes, and Sahay 2004; Chen and Rogoff 2003; Clements and Fry 2008). Predictably, the greater share that exports represent for a country’s overall economy, the more pronounced will be this effect. Brazil’s economy is large and quite heterogeneous, yet agroindustrial and mineral commodities are still its main exports, and the dynamics of ‘commodity currencies’ certainly apply to the Brazilian Real (Frischtak 2012). But there is far more than meets the (economist’s) eye regarding the geopolitical implications of this relationship between commodities and currency markets. After all, disparity in currency exchange rates ultimately signifies differential terms of trade, which amounts to a transfer of wealth from commodity-importing to commodity-exporting countries in times of high commodity prices, and a reversal of this transfer of wealth in times of low commodity prices. These transfers of wealth operate far beyond the particular sectors engaged in international trade, affecting the operations of all companies and the basic cost of living for people in all but the most protectionist countries. Yet these effects are contradictory across classes, as local currency devaluation and interest rate hikes sustain competitive exports but also slash real wages and (especially when combined with tax increases and cuts in welfare spending) in effect transfer wealth from workers to domestic and transnational elites, especially financial and corporate elites in the United States operating through US-dollar-dominated commodity markets (Cohen 1998; Kirshner 2008; Spiro 1999).

This effect becomes even more pronounced when considering the role of international reserve currencies. These are currencies commonly used in international transactions and consequently held in significant quantities by state governments and institutions operating in international markets as part of their foreign exchange reserves. Corporations and individuals living in a country that issues a reserve currency gain major benefits from this arrangement, since they are able to gain greater profits from their exports, purchase imports more cheaply than those from other states and elude balance-of-payment crises since they pay for imports with their own currency. These benefits ultimately allow a country like the US to extract over USD 100 billion per year through this ‘exorbitant privilege’ of issuing the current international reserve currency (Eichengreen 2010; Gourinchas and Rey 2007). Even beyond the direct profits made by US-based transnational trading companies from controlling Brazilian soybean exports to China, therefore, the US government and US-based corporate and consumer interests benefit enormously from the maintenance of the US dollar as the default currency for the international soybean trade – especially now that Brazil has surpassed the US as the largest soybean exporter in the world. This bears striking resemblance to the political power and economic rents the US extracts from ‘petro-dollars’ that flow from oil exporting states through Wall Street, a process that gained much attention during the 1970s when the US ceased being the world’s leading petroleum exporter but maintained economic profits and geopolitical control over the oil flow by issuing the international reserve currency *and assuring that Middle Eastern oil would be sold in US dollars* (Magdoff and Sweezy 1981; Kirshner 2008; Spiro 1999). We might ask, therefore, how agroindustrial commodity production and trade might serve geopolitical functions (and thus contestation) similar to those that ‘petro-dollars’ are known to have served since the 1970s. We should research, therefore,

the politics of ‘soy-dollars’ between the US and its major competitors, i.e. Brazil and Argentina, and the major consumers of these exports, i.e. Europe and China.<sup>13</sup>

Brazilian soybean production increased from 10 mmt in 1975 to 25 mmt in 1994, and then more than tripled to 82 mmt in 2013 (Shurtleff and Aoyagi 2009). During this same period, CBOT prices for soybeans spiked from around USD 250 to 1000/bushel during the crises of the 1970s, then gradually plateaued around USD 500/bushel during the 1990s. After 2003, however, volatility increased again, and since 2012 prices have averaged USD 1500/bushel (Trading Economics 2014). It might be expected that, despite US ‘exorbitant privilege’, the recent commodity ‘super cycle’ has been very positive for Brazil. Yet the geopolitical implications of holding a ‘commodity currency’ are not so straightforward for a country that also hosts a broad industrial and manufacturing sector and an enormous domestic market, such as Brazil. High commodity prices and the strengthening of the Brazilian Real in relation to the US dollar might benefit the soybean sector and other commodity exporters, yet they also render Brazilian industrial and manufactured exports far less competitive in international markets and increase the tendency towards domestic inflation (Frischtak 2012; Jenkins and Barbosa 2012). Therefore, there is a constant battle in Brazilian corporate and policy circles over whether to loosen or tighten monetary policy at any given moment, with labor unions and representatives of the manufacturing sector pitted against the agribusiness, mining and petrochemical sectors. As long as Brazil remains dependent upon a foreign currency for its international exchanges, there is no way to escape this tension and, consequently, the expansion of regional trade blocs like Mercosul and currency swaps with major trade partners (such as Argentina and China) has become an increasingly attractive strategy for the Brazilian state to reduce this pressure (Carvalho 2008; Leahy 2013).

The most interesting and understudied geopolitical implication of Brazilian soybean arises precisely through the manner in which it serves as an instrument for Brazil to honor currency swaps with its new primary commercial partner and largest soybean importer, i.e. China, as this is seen as the harbinger of a shift of international reserve currencies. After all, these are relatively stable over many decades, but they do shift along with broader political and economic transformations (Arrighi and Silver 1999). It took several decades from the late nineteenth century until the end of World War II for the US dollar to displace the British pound as the main global reserve currency, and there is growing evidence that the US dollar is steadily losing its hegemony in international currency markets (Carbaugh and Hedrick 2009; Eichengreen 2010). Despite its current crisis, the most likely contender that could replace the US dollar as the main international reserve currency in the near future is the euro (Chinn and Frankel 2007), yet the Chinese yuan is also displaying signs that it could ‘internationalize’ along with the Chinese economy and become one of the main reserve currencies by 2030 (Chen and Cheung 2011; Jaeger 2010). At such a point, the US dollar, the euro and the yuan might share the status of reserve currencies, globally or in regional blocs, for an indeterminate and perhaps transitional period (Eichengreen 2010; Fischer 2011). The primary mechanisms for this transformation are bilateral currency swap agreements, which China has been pursuing aggressively with its neighbors and commercial partners in the global South (Zhang Jianhua, Chief Executive Officer of Bank of

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<sup>13</sup>It is more accurate to address the politics of ‘grain-dollars’ rather than ‘soy-dollars’ alone, since all soybean producers also rotate their production with other crops such as maize, cotton and wheat, and the major transnational input and trading companies that control soybean technologies and trade also deal in maize, wheat and other grains.

China Brazil, quoted in Frischtak and Soares 2012; cf. Liao and McDowell *Forthcoming*). In March 2013, for example, Brazil and China established a currency swap fund between their central banks equivalent to USD 30 billion:

Though the agreement is expected to be of little use in day-to-day trade, the deal will guarantee the flow of Brazil's growing soy, iron ore and other exports to China and China's imports of manufactured goods to Brazil regardless of global financial conditions. 'The purpose of this swap is that, independent of the conditions prevailing in the international financial market, we will have \$30bn available which would represent eight months of exports from Brazil to China and 10 months of imports to Brazil from China', said Alexandre Tombini, president of Brazil's central bank in a press conference on the sidelines of the BRICS summit in South Africa. (Leahy 2013)

As long as the Chinese yuan is not a floating currency and the volume of soybeans flowing through the boards of trade in Brazil or China remains significantly lower than the CBOT, these swap agreements are merely preventive measures in case another financial crisis in the global North freezes US dollar markets, as in late 2008. But over the long term, as more trade and investments take place between Brazil, China and other countries in the global South, such agreements may indeed enable these states to pursue more independent politico-economic policies that challenge more directly the hegemony of the US dollar and the US government in the inter-state system (Kirshner 2008; Spiro 1999). For example, Russian prohibition on agricultural imports from the US, EU, Canada, Australia and Norway were enthusiastically welcomed by Brazilian (and Latin American) state and agribusiness interests. Brazilian agricultural export growth to Russia will be constituted primarily of meat products, the main 'aggregated value' industry that drives soy production upstream (CNA 2014b). Thus, by expanding soybean production and controlling its processing and trade within Brazil, its neighboring South American countries and even in distant African states, the Brazilian state and agribusinesses, along with other emergent powers, are cultivating political and economic power to establish themselves as leaders in a 'new multipolar world order'. In this way, the CBOT may lose its hegemonic control over soybean international trade to the boards of Dalian in China, Rosario in Argentina and São Paulo in Brazil (Treviño 2005).

## Conclusion

In this contribution, I demonstrated the manner in which soybean cultivation has played important geopolitical roles, from its origins in Brazil at the hands of Japanese migrants and through its early use as green fertilizer, to facilitate the expansion of commercial agriculture and consolidate the 'green revolution' in Brazil. I then described the interrelated processes of agroindustrial and geopolitical restructuring that transformed soybean into one of the most important commodities traded in international markets, and began to undermine US hegemony in global agroindustrial assemblages and the inter-state system. I then reviewed the sub-imperialist role that Brazilian soybean production (as well as technology and expertise) plays in Latin America and Africa, alongside new dynamics of 'South-South cooperation' in international trade and governance. Finally, I raised several hitherto underexplored questions about the intersections between global agroindustrial production and currency exchange rates and reserves. I suggest that studying the politics of 'soy-dollars' might raise several new questions and important insights that remain unnoticed in current geopolitical studies of Brazil, as well as most critical agrarian studies of global agroindustrial assemblages or food regimes. Of course, in order to properly develop the

concepts of ‘soy-dollars’ or ‘grain-dollars’, it would be necessary to undertake a much more extensive analysis in a separate paper of its own.

Although I have argued that the soybean complex in Brazil is particularly strategic and significant for contemporary geopolitics, the phenomenon analyzed – agroindustrial development as part of state-making and power projection – is not unique to soybeans in Brazil. Instead, this paper contributes to a broader study of the interrelations between states and ‘global assemblages of agro-power’ (Sommerville, Essex, and Le Billon 2014), which may be further developed for other key agroindustrial sectors of Brazil and for a larger set of countries as well. Ultimately, these geopolitical considerations must be overlaid on traditional agrarian questions in Brazil and beyond: how are we to analyze and evaluate the contradictory process whereby the power and influence of emergent agribusiness and state actors begin to successfully challenge US hegemony and obtain political and economic gains for national development, but do so through the domestic consolidation and sub-imperialist expansion of an agroindustrial production system that produces such serious social and ecological injustices? Will Brazil and other emerging economies succeed in establishing a ‘new multipolar world order’, and how will this new order be any more just and democratic if it also rests upon the concentration of power and wealth in the hands of a ‘multipolar’ elite? These and other questions must be further explored in order to deepen the study of the geopolitics of Brazilian soybean as not only an instrument of contestation between states or competition between companies, but also as a terrain of struggle between different classes and class fractions in Brazil and around the world.

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### References

- Acioly, L., E. Pinto, and M. Cintra. 2011. China e Brasil: oportunidades e desafios [China and Brazil: opportunities and challenges]. In *A China na nova configuração global: impactos políticos e econômicos*, ed. R. Leão, E. Pinto and L. Acioly, [China in the new global configuration: political and economic impacts], 307–50. Brasília: IPEA.
- Agnew, J. 1994. The territorial trap: The geographical assumptions of international relations theory. *Review of international political economy* 1, no. 1: 53–80.
- Amanor, K. 2013. South–South cooperation in context: Perspectives from Africa. *FAC Working Paper No. 54*. Brighton: Future Agricultures Consortium.
- Andino, J., K. Mulik, and W. Koo. 2005. The impact of Brazil and Argentina’s currency devaluation US soybean trade. *Agribusiness & Applied Economics Report No. 574*. Fargo, ND: Center for Agricultural Policy and Trade Studies, North Dakota State University.
- Arcand, J.-L., P. Guillaumont, and S. Jeanneney. 2008. Deforestation and the real exchange rate. *Journal of Development Economics* 75: 242–62.
- Arellano-Lopez, F. 2012. Conflicting land use agendas: Environment, indigenous land rights and development in central Bolivia. The case of the Isiboro-Sécure Indigenous Territory and National Park. Paper presented at the LDPI International Conference on Land Grabs II, Cornell University, 17–19 October. <http://www.cornell-landproject.org/download/landgrab2012papers/arellano.pdf>
- Arrighi, G., and B. Silver. 1999. *Chaos and governance in the modern world system*. Minneapolis: University of Minnesota Press.
- Barbosa, A., T. Narciso, and M. Biancalana. 2009. Brazil in Africa: Another emerging power in the continent? *Politikon* 36, no. 1: 59–86.
- Bastos, E. 1984. *As ligas camponesas* [The peasant leagues]. Petropolis, RJ: Editora Vozes.

- Borras, S.M., Jr, J.C. Franco, S. Gómez, C. Kay, and M. Spoor. 2012. Land grabbing in Latin America and the Caribbean. *Journal of Peasant Studies* 39, no. 3–4: 845–72.
- Borras, S., J. Franco, R. Isakson, L. Levidow, and P. Vervest. 2014. Towards understanding the politics of flex crops and commodities: Implications for research and policy advocacy. *Think Piece Series on Flex Crops and Commodities, No.1*. Amsterdam: Transnational Institute (TNI).
- Boyd, W. 2001. Making meat: Science, technology, and American poultry production. *Technology and Culture* 42, no. 4: 631–64.
- Brazil. 2008. Decree number 6.592. Brasília: Presidency of the Republic, 2 October.
- Brazil-China Business Council (CEBC). 2012. The commercial relation between Brazil and China in agribusiness. *Carta Brasil-China No. 6*. Rio de Janeiro: CEBC.
- Brazil-China Business Council (CEBC). 2013. *Chinese Investments in Brazil from 2007–2012*. Rio de Janeiro: CEBC.
- BRICS. 2009. *Joint Statement of the BRIC Countries' Leaders*. Yekaterinburg, Russia, June 16. <http://archive.kremlin.ru/eng/text/docs/2009/06/217963.shtml> (accessed July 30, 2014).
- Brown, L. 2012. *Full planet, empty plates: The new geopolitics of food scarcity*. New York: WW Norton & Company.
- Cabral, L., and A. Shankland. 2013. Narratives of Brazil-Africa cooperation for agricultural development: new paradigms? *FAC Working Paper No. 51*, Brighton: Future Agricultures Consortium.
- Carbaugh, R., and D. Hedrick. 2009. Will the US dollar be dethroned as the main reserve currency? *Global Economy Journal* 9, no. 3: 1–14.
- Carvalho, D. 2008. Sistema de pagamentos em moeda local: aspectos jurídicos da nova alternativa para remessas de valores entre o Brasil e a Argentina [System of payments in local currency: juridical aspects of the new alternative for value exchange between Brazil and Argentina]. *Revista da Procuradoria-Geral do Banco Central do Brasil* 2, no. 2: 199–224.
- Cashin, P., L.F. Céspedes, and R. Sahay. 2004. Commodity currencies and the real exchange rate. *Journal of Development Economics* 75, no. 1: 239–68.
- Cavalett, O., and E. Ortega. 2010. Integrated environmental assessment of biodiesel production from soybean in Brazil. *Journal of Cleaner Production* 18, no. 1: 55–70.
- Center for Research on the Cerrado (CPAC). 1975. Cerrado: filosofia e programa do centro de pesquisa [Cerrado: philosophy and program of the research center]. *Cerrado* 7, no. 27: 22–6.
- Cesarino, L. 2013. Brazil as an emerging donor in Africa: from discourse to the frontline. African Studies Association Annual Meeting Paper. <http://ssrn.com/abstract=2236885> (accessed July 30, 2014).
- Chen, X., and Y-W. Cheung. 2011. Renminbi going global. *China & World Economy* 19, no. 2: 1–18.
- Chen, Y., and K. Rogoff. 2003. Commodity currencies. *Journal of International Economics* 60, no. 1: 133–60.
- Chichava, S., J. Duran, L. Cabral, A. Shankland, L. Buckley, T. Lixia, and Z. Yue. 2013. Brazil and China in Mozambican agriculture: Emerging insights from the field. *IDS Bulletin* 44: 101–15.
- Chinn, M., and J. Frankel. 2007. Will the euro eventually surpass the dollar as leading international reserve currency? In *G7 current account imbalances: Sustainability and adjustment*, ed. R. Clarida, 283–335. Chicago: University of Chicago Press.
- Clements, E.A., and B.M. Fernandes. 2013. Land grabbing, agribusiness and the peasantry in Brazil and Mozambique. *Agrarian South: Journal of Political Economy* 2, no. 1: 41–69.
- Clements, K.W., and R. Fry. 2008. Commodity currencies and currency commodities. *Resources Policy* 33, no. 2: 55–73.
- Cohen, B. 1998. *The geography of money*. Ithaca, NY: Cornell University Press.
- Couto e Silva, G. 1957. *Aspectos geopolíticos do Brasil* (Geopolitical aspects of Brazil). Rio de Janeiro: Biblioteca do Exército Editora.
- Couto e Silva, G. 1981. *Planejamento estratégico* (Strategic planning). Brasília: Editora da Universidade de Brasília.
- Couto e Silva, G., and A. Franco. 1967. *Geopolítica do Brasil* (Geopolitics of Brazil). Rio de Janeiro: Editora José Olympio.
- Dauvergne, P., and D. Farias. 2012. The rise of Brazil as a global development power. *Third World Quarterly* 33, no. 5: 903–17.
- EcoNexus and Berne Declaration. 2013. *Agropoly: A handful of corporations control world food production*. <http://econexus.info/publication/agropoly-handful-corporations-control-world-food-production> (accessed August 29, 2014).

- Economist Intelligence Unit (EIU). 2010. *The global power of Brazilian agribusiness*. London: The Economist-Accenture.
- Eichengreen, B. 2010. *Exorbitant privilege: The rise and fall of the dollar and the future of the international monetary system*. Oxford: Oxford University Press.
- Estevam, L. 2004. *O tempo da transformação: estrutura e dinâmica da formação econômica de Goiás* (The time of transformation: structure and dynamics of the economic formation of Goiás). Goiânia: Editora da Universidade Católica de Goiás.
- Evans, P. 1979. *Dependent development: The alliance of multinational, state, and local capital in Brazil*. Princeton: Princeton University Press.
- Fairbairn, M. 2013. Indirect dispossession: Domestic power imbalances and foreign access to land in Mozambique. *Development and Change* 44, no. 2: 335–56.
- Fausto, B. 1994. *História do Brasil* [History of Brazil]. São Paulo: Editora da Universidade de São Paulo.
- Fischer, C. 2011. Currency blocs in the 21<sup>st</sup> century. *Discussion Paper Series 1: Economic Studies No. 12*. Frankfurt am Main: Deutsche Bundesbank.
- Flynn, M. 2007. Between sub-imperialism and globalization: A case study in the internationalization of Brazilian capital. *Latin American Perspectives* 34, no. 6: 9–27.
- Foweraker, J. 1981. *The struggle for land: A political economy of the pioneer frontier in Brazil from 1930 to the present day*. Cambridge: Cambridge University Press.
- Franco, J., L. Mehta, and G. Veldwisch. 2013. The global politics of water grabbing. *Third World Quarterly* 34, no. 9: 1651–75.
- Freitas, J. 2004. *A escola geopolítica Brasileira* [The Brazilian school of geopolitics]. Rio de Janeiro: Biblioteca do Exército Editora.
- Friedmann, H. 1982. The political economy of food: The rise and fall of the postwar international food order. *American Journal of Sociology* 88: S248–86.
- Frischtak, C. 2012. A monetary tsunami? Brazil in the cross-fire of new style currency wars. In *New challenges for the global economy, new uncertainties for the G-20*, ed. I. Atiyas, 13–7. Washington, DC: Brookings Institution.
- Frischtak, C., and A. Soares. 2012. *Yuan Internationalization. Carta Brasil-China Special Edition No.5*: Rio de Janeiro: CEBC.
- Galeano, L. 2012. Paraguay and the expansion of Brazilian and Argentinian agribusiness frontiers. *Canadian journal of development studies/Revue canadienne d'études du développement* 33, no. 4: 458–70.
- Goldsmith, P., B. Li, J. Fruin, and R. Hirsch. 2004. Global shifts in agro-industrial capital and the case of soybean crushing: Implications for managers and policy makers. *International Food and Agribusiness Management Review* 7, no. 2: 87–115.
- Gourinchas, P.-O., and H. Rey. 2007. From world banker to world venture capitalist: The U.S. external adjustment and the exorbitant privilege. In *G7 current account imbalances: Sustainability and adjustment*, ed. R. Clarida, 11–55. Chicago: University of Chicago Press.
- Grain. 2008. *Seized! The 2008 land grab for food and financial security*. Barcelona: Grain.
- Gudynas, E. 2008. The new bonfire of vanities: Soybean cultivation and globalization in South America. *Development* 51, no. 4: 512–8.
- Harvey, D. 2005. *A brief history of neoliberalism*. Oxford: Oxford University Press.
- Hasse, G., and F. Bueno. 1996. *O Brasil da soja: abrindo fronteiras, semeando cidades* [The Brazil of soy: opening frontiers, seeding cities]. Porto Alegre: Ceval Alimentos/L & PM Editores.
- Hecht, S. 2005. Soybeans, development and conservation on the Amazon frontier. *Development and Change* 36, no. 2: 375–404.
- Hecht, S., and C. Mann. 2008. How Brazil outfarmed the American farmer. *Fortune*, 19 January, 92–105.
- High Level Panel of Experts on Food Security and Nutrition (HLPE). 2011. *Price volatility and food security*. Report to the Committee on World Food Security of the Food and Agriculture Organization of the United Nations. Rome: CFS/FAO.
- HighQuest Partners and Soyatech. 2011. *How the global oilseed and grain trade works*. [http://www.unitedsoybean.org/wp-content/uploads/2013/07/RevisedJan12\\_GlobalOilSeedGrainTrade\\_2011.pdf](http://www.unitedsoybean.org/wp-content/uploads/2013/07/RevisedJan12_GlobalOilSeedGrainTrade_2011.pdf) (accessed July 30, 2014).
- Hollerman, L. 1988. *Japan's economic strategy in Brazil: Challenge for the United States*. Lexington, MA: Lexington Books.
- Hopewell, K. 2013. New protagonists in global economic governance: Brazilian agribusiness at the WTO. *New Political Economy* 18, no. 4: 603–23.

- Ianni, O. 1979. *Ditadura e agricultura: o desenvolvimento do capitalismo na Amazônia* [Dictatorship and agriculture: the development of capitalism in the Amazon]. Rio de Janeiro: Editora Civilização Brasileira.
- Inoue, C., and A. Vaz. 2012. Brazil as 'Southern donor': Beyond hierarchy and national interests in development cooperation? *Cambridge Review of International Affairs* 25, no. 4: 507–34.
- Instituto Lula. 2014. Blairo Maggi e Lula em Cuba para ampliar produção de alimentos (Blairo Maggi and Lula in Cuba to expand food production). São Paulo: Instituto Lula, 26 February. <http://www.institutolula.org/blairo-maggi-e-lula-em-cuba-para-ampliar-producao-de-alimentos/#.Ux3tDeddWMP> (in Portuguese) (accessed July 30, 2014).
- Jaeger, M. 2010. Yuan as a reserve currency: likely prospects & possible implications. *Deutsche Bank Research Briefing*, 16 July. Frankfurt am Main: Deutsche Bank.
- Jenkins, R., and A. Barbosa. 2012. Fear for manufacturing? China and the future of industry in Brazil and Latin America. *The China Quarterly* 209, no. 2: 59–81.
- Jepson, W., C. Brannstrom, and A. Filippi. 2010. Access regimes and regional land change in the Brazilian Cerrado, 1972–2002. *Annals of the Association of American Geographers* 100, no. 1: 87–111.
- Jessop, B. 2002. The crisis of the national spatio-temporal fix and the tendential ecological dominance of globalizing capitalism. *International Journal of Urban and Regional Research* 24, no. 2: 343–60.
- Justiça Ambiental et al. 2013. Leaked ProSAVANA Master Plan confirms worst fears. <http://www.grain.org/article/entries/4703-leaked-prosavana-master-plan-confirms-worst-fears> (accessed July 30, 2014).
- Kirshner, J. 2008. Dollar primacy and American power: what's at stake? *Review of International Political Economy*, 15, no. 3: 418–38.
- Leahy, J. 2013. Brazil and China agree currency swap. *Financial Times*, 26 March.
- Liao, S., and D. McDowell. Forthcoming. Redback rising: China's bilateral swap agreements and RMB internationalization. *International Studies Quarterly*.
- Mackey, L. 2011. Legitimizing foreignization in Bolivia: Brazilian agriculture and the relations of conflict and consent in Santa Cruz, Bolivia. Paper presented at the LDPI International Conference on Land Grabs, IDS University of Sussex, 8 April. [http://www.iss.nl/fileadmin/ASSETS/iss/Documents/Conference\\_papers/LDPI/23\\_Lee\\_Mackey.pdf](http://www.iss.nl/fileadmin/ASSETS/iss/Documents/Conference_papers/LDPI/23_Lee_Mackey.pdf) (accessed July 30, 2014).
- Magdoff, H., and P. Sweezy. 1981. The U.S. dollar, petrodollars, and US imperialism. In *The deepening crisis of U.S. capitalism*, ed. H. Magdoff and P. Sweezy, 94–106. New York: Monthly Review.
- Mamone, I. 2007. Water and geopolitics: a closer look at the Paraguay-Paraná Waterway program. Paper presented at the 37th St. Gallen Symposium 'The power of natural resources', St. Gallen, Switzerland, 31 May.
- Margulis, M. 2014. Trading out of the global food crisis? The world trade organization and the geopolitics of food security. *Geopolitics* 19, no. 2: 322–50.
- Marini, R. 1972. Brazilian subimperialism. *Monthly Review* 23, no. 9: 14–24.
- Martins, P., and B. Pelegrini. 1984. *Cerrados: uma ocupação Japonesa no campo* (Cerrados: a Japanese occupation in the countryside). Rio de Janeiro: Editora Codecri.
- Mason, J., and P. Singer. 1980. *Animal factories*. New York: Harmony Books.
- Mazoyer, M., and L. Roudart. 2006. *A history of world agriculture: From the neolithic age to the current crisis*. New York: Monthly Review.
- McMichael, P. 2012. The land grab and corporate food regime restructuring. *Journal of Peasant Studies* 39, no. 3–4: 681–701.
- Ministry of Agriculture, Livestock and Supply (MAPA). 2002. *Programas de cooperação em desenvolvimento agrícola entre Japão-Brasil na região do Cerrado no Brasil* (Agricultural development cooperation programs between Japan and Brazil in the Cerrado region of Brazil). Brasília: MAPA.
- Moreira, H. 2013. A formação da nova geopolítica das mudanças climáticas [The formation of the new geopolitics of climate change]. *Sustentabilidade em Debate* 4, no. 1: 275–92.
- Morgan, D. 2000 [1979]. *Merchants of Grain: The power and profits of the five giant companies at the center of the world's food supply*. Lincoln, NE: iUniverse.
- Motta, M., and P. Zarth. 2008. *Formas de Resistência Camponesa, vol. II* [Forms of Peasant Resistance, vol. II]. São Paulo: NEAD.



- Murphy, S., D. Burch, and J. Clapp. 2012. *Cereal secrets: The world's largest grain traders and global agriculture*. Oxfam Research Report. Oxford: Oxfam.
- National Confederation of Agriculture and Livestock of Brazil (CNA). 2014a. Agronegócio no Brasil (Agribusiness in Brazil). <http://agroinvestbrasil.com.br/agronegocio-brasil> (in Portuguese) (accessed July 30, 2014).
- National Confederation of Agriculture and Livestock of Brazil (CNA). 2014b. Rússia é mercado promissor para o agronegócio brasileiro (Russia is a promising market for Brazilian agribusiness). <http://www.canaldoprodutor.com.br/comunicacao/noticias/russia-e-mercado-promissor-para-o-agronegocio-brasileiro> (in Portuguese) (accessed September 3, 2014).
- Oliveira, G. de L. T. 2013. Land regularization in Brazil and the global land grab. *Development and Change* 44, no. 2: 261–83.
- Oliveira, G. de L. T., and M. Schneider. Forthcoming. The politics of flexing soybeans: China, Brazil, and global agroindustrial restructuring. *Journal of Peasant Studies*.
- Oliveira, H. 2010. Brasil e China: uma nova aliança não escrita? [Brazil and China: a new unwritten alliance?]. *Revista Brasileira de Política Internacional* 53, no. 2: 88–105.
- Patel, R. 2008. *Stuffed and starved: The hidden battle for the world food system*. New York and London: Melville House.
- Patel, R. 2013. The long green revolution. *Journal of Peasant Studies* 40, no. 1: 1–63.
- Peine, E. 2013. Trading on pork and beans: Agribusiness and the construction of the Brazil-China-soy-pork commodity complex. In *The ethics and economics of agrifood competition*, ed. H. James Jr, 193–210. New York: Springer.
- Pires, M. 2000. Programas agrícolas na ocupação do Cerrado [Agricultural programs in the occupation of the Cerrado]. *Sociedade e Cultura* 3, no. 1: 111–31.
- Powell, D. 2011. The dragon's appetite for soy stokes Brazilian protectionism. *Financial Times*, 10 October.
- Ribeiro, P., and F. Ramos. 2009. From Mercosur to Unasur? Geopolitics of South American integration and the role of Brazilian diplomacy. Paper presented at the Joint International Meeting meeting of the ISA - ABRI, Rio de Janeiro, 22 July. [http://www.allacademic.com/meta/p381229\\_index.html](http://www.allacademic.com/meta/p381229_index.html) (accessed July 30, 2014).
- Richards, P.D., R.J. Myers, S.M. Swinton, and R.T. Walker. 2012. Exchange rates, soybean supply response, and deforestation in South America. *Global Environmental Change* 22, no. 2: 454–62.
- Robinson, W. 2008. *Latin America and global capitalism: A critical globalization perspective*. Baltimore: John Hopkins University Press.
- Schneider, M. 2011. *Feeding China's pigs: Implications for the environment, China's smallholder farmers, and food security*. Minneapolis and Geneva: Institute for Agriculture and Trade Policy.
- Scott, J. 1998. *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven, CT: Yale University Press.
- Shurtleff, W., and A. Aoyagi. 2009. *History of soybeans and soyfoods in South America (1882–2009) Extensively annotated bibliography and sourcebook*. Lafayette, CA: Soyinfo Center.
- Silva, M., and L. Costa. 2012. A indústria de defensivos agrícolas [The pesticide and herbicide industry]. *BNDES Setorial* 35: 233–76.
- Sommerville, M., J. Essex, and P. Le Billon. 2014. The 'global food crisis' and the geopolitics of food security. *Geopolitics* 19, no. 2: 239–65.
- Sousa, L., and R. Vieira. 2008. Soybeans and soy foods in Brazil, with notes on Argentina: Sketch of an expanding world commodity. In *The world of soy*, ed. Du Bois, C., C. Tan, and S. Mintz, 234–56. Chicago: University of Illinois Press.
- Spiro, D. 1999. *The hidden hand of American hegemony: Petrodollar recycling and international markets*. Ithaca, NY: Cornell University Press.
- Steinfeld, H., P. Gerber, T. Wassenaar, V. Castel, M. Rosales, and C. de Haan. 2006. *Livestock's long shadow: Environmental issues and options*. Rome: FAO.
- The Economist. 2010. The miracle of the cerrado. Brazil has revolutionised its own farms. Can it do the same for others?. *The Economist*, 26 August.
- The Economist. 2012. Out Lugo. *The Economist*, 25 June.
- Trading Economics. 2014. Soybeans: Historical option data. <http://www.tradingeconomics.com/commodity/soybeans> (accessed August 29, 2014).
- Treviño, L. 2005. Development and volume growth of organized derivatives trade in emerging markets. *Ensayos Revista de Economía*, 24, no. 2: 31–82.
- Turzi, M. 2011. The soybean republic. *Yale Journal of International Affairs* 6, no. 2: 59–68.

- United Nations International Trade Statistical Database (UN-Comtrade). 2014. United Nations commodity trade statistics database. <http://comtrade.un.org> (accessed July 30, 2014).
- United States Department of Agriculture (USDA). 1965–1970. Fats and oils situation. Multiple issues. <http://usda.mannlib.cornell.edu/MannUsda/viewTaxonomy.do?taxonomyID=17> (accessed July 30, 2014).
- United States Department of Agriculture (USDA). 1975–1995. World Agricultural Supply and Demand Estimates. Multiple issues. <http://usda.mannlib.cornell.edu/MannUsda/viewTaxonomy.do?taxonomyID=17> (accessed July 30, 2014).
- United States Department of Agriculture (USDA). 2000–2013. Oilseeds: World Markets and Trade. Multiple issues. <http://usda.mannlib.cornell.edu/MannUsda/viewTaxonomy.do?taxonomyID=17> (accessed July 30, 2014).
- Urioste, M. 2012. Concentration and ‘foreignisation’ of land in Bolivia. *Canadian Journal of Development Studies/Revue canadienne d’études du développement* 33, no. 4: 439–57.
- Weis, T. 2013. The meat of the global food crisis. *Journal of Peasant Studies* 40, no. 1: 65–85.
- Wesz, V. Jr. 2014. *O mercado de soja e as relações de troca entre produtores rurais e empresas no Sudeste do Mato Grosso (Brasil)* (The soy market and exchange relations between farmers and firms in the southeast of Mato Grosso (Brazil)). Doctoral dissertation. Graduate Program of Social Sciences, Federal Rural University of Rio de Janeiro (UFRRJ).
- Wilkinson, J. 2009. The Globalization of agribusiness and developing world food systems. *Monthly Review* 61, no. 04: 38–49.
- Wolford, W., S.M. Borras, R. Hall, I. Scoones, and B. White. 2013. Governing global land deals: The role of the state in the rush for land. *Development and Change* 44, no. 2: 189–210.
- World Wide Fund for Nature (WWF). 2014. *The growth of soy: Impacts and solutions*. Gland, Switzerland: WWF International.
- Worster, D. 2004. *Dust bowl: The southern plains in the 1930s*. New York: Oxford University Press.
- Yoshioka, Y. 1992. Development of agricultural policy in post-war Japan. In *Agriculture and trade in the Pacific*, ed. Coyle, W., D. Hayes, and H. Yamauchi, 91–100. Boulder, CO: Westview Press.
- Zibechi, R. 2009. *Is Brazil creating its own backyard? Americas Program Report*. Washington, DC: Center for International Policy.

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