



South–South Cooperation, Agribusiness, and African Agricultural Development: Brazil and China in Ghana and Mozambique

KOJO S. AMANOR^a and SÉRGIO CHICHAVA^{b,*}

^a *Institute of African Studies, University of Ghana, Legon, Ghana*

^b *Instituto de Estudos Sociais e Económicos (IESE), Maputo, Mozambique*

Summary. — The rise of new powers in development has generated much debate on the extent to which South–South Cooperation (SSC) constitutes a new paradigm of development more relevant to African needs or a disguise for a new form of imperialism. This paper critically examines the rise of Chinese and Brazilian technical and economic cooperation in African agriculture with two cases drawn from Ghana and Mozambique. Using a historical framework, policy documents, case studies, and an analysis of the political economy of agrarian development, we trace the role of agricultural development in the relations of China and Brazil in Africa, and the extents to which recent developments in agribusiness and structural neoliberal reforms of African economies have influenced Brazilian and Chinese contemporary engagements with African agriculture. We examine the extent to which the different policy frameworks, political interests in agriculture, and institutional frameworks influence and impede the outcomes of Chinese and Brazilian development intents. We find that China and Brazil have different histories of experience within African agriculture, which influences the nature of their technical and development cooperation. Although they have distinct agrarian structures, the development of agribusiness and commercial seed, input and machinery sectors in China and Brazil influence engagements within Africa. These are often variants of the same interests that underlie the programs of northern donors, and frequently the two rising powers engage in trilateral arrangements with other donors and international agencies, particularly in the case of Brazil.

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1. INTRODUCTION

In recent years China, Brazil, India, and other so-called “rising powers” are playing new roles in development cooperation in Africa. They have challenged the dominant narratives of mainstream, northern development aid, and economic expertise. They depict the Organisation for Economic Cooperation and Development (OECD) Development Assistance Committee (DAC) framework as imposing conditionalities based on unequal international relations and the legacies of colonialism. They contrast their approach as South–South Cooperation (SSC), rooted in third world solidarity, horizontal exchange, mutual respect, and complementarity (Alden, Morphet, & Vieira, 2010; Golub, 2013). Detractors characterize SSC as a new form of imperialism promoting a scramble for resources on the African continent to meet the needs of the rapidly expanding industries and consumer markets of rising powers (see Carmody, 2011 for a comprehensive discussion of debates around this theme). Others argue that these new forms of development cooperation undermine governance reforms, transparency, and sustainable development (see Alden, 2007, chap. 4). However, there is also a recognition that these new forms of development cooperation can both facilitate and complement other sources of aid and trilateral initiatives are becoming common (Abdenur & da Fonseca, 2013). Thus, development cooperation is becoming increasingly multilateral and multipolar.

This paper examines the extent to which the concept of SSC is creating more scope and space for African development initiatives, and whether it is resulting in new paradigms of development that favor the poor, or is resulting in a further deepening of capitalist accumulation and competition on the African continent.

2. FRAMING SSC IN AFRICA

The rapid rise of new southern powers is reflected in global statistics on trade and flows of foreign direct investment. The share of developing countries’ participation in foreign direct investment has grown from 6% in 1980 to 31% in 2012. Trade between developing countries has rapidly expanded from 8% of global trade in 1980 to 27% in 2010 (Chaturvedi, 2014, p. 54). This has been further compounded by the 2008 world crisis, and the introduction of austerity measures in developed economies. In 2012 official development assistance (ODA) from OECD-DAC countries fell by 6% (Abdenur & da Fonseca, 2013; McEwan & Mawdsley, 2012). In contrast, investments and financial flows from rising powers continued to expand—although the recent deepening of economic recession has curtailed this. Rising powers are clearly reshaping the landscape of development cooperation, but the longer-term outcomes remain uncertain.

SSC needs to be analyzed within a framework of changing patterns of aid and investment, and changing capitalist relations. Increasingly, northern development cooperation is driven by private sector interests and alignments between the private and public sectors, and policy is influenced by commitments to capital accumulation and growth, which are

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displacing poverty alleviation programs (Kragelund, 2015; Mawdsley, 2015). This finds manifestation in strategies for agricultural development that promote commercial agriculture, and notions of “pro-poor markets” that seek to integrate small farmers into input markets (Mawdsley, 2015).

Other analysts have argued that the rise of SSC is creating spaces for new critical engagements in which African states have more choices and ability to influence development policies and negotiate more favorable outcomes (Cheru, Modi, & Naidu, 2014). However, the role of the state in the framework of SSC is not necessarily greater than in the Post-Washington Consensus where it features in correcting market and institutional imperfections (Fine & Van Waeyenberge, 2013). The framework of SSC is critical of conditionalities, but not of market liberalization. For example, the New Structural Economics variant of SSC (Lin & Wang, 2015) is based upon concepts of comparative advantage, export-oriented production, and state promotion of industrial policies that reflect market opportunities. Economic failures in developing countries are seen as resulting from not recognizing appropriate comparative advantages in markets (Lin & Wang, 2015).

Several writers have commented on the increasing accommodation between the development frameworks of northern and rising power partners (Abdenur & da Fonseca, 2013; Fingerman, 2015; Kragelund, 2015; Mawdsley, 2015). McEwan and Mawdsley (2012) argue that trilateral cooperation results in the replication of older patterns of northern hegemony, with DAC countries setting the agenda, and rising powers serving as cheap contractors, while the beneficiaries remain passive. Mawdsley (2015, p. 4) sees increasing alignments between “transnational economic and political elites of all hues” to drive capital accumulation deeper and more unevenly, resulting in new alliances between northern and rising powers, including among transnational companies.

Many small companies from rising powers are also moving into Africa, including Chinese and Indian firms. Shen (2013) argues that as business becomes increasingly competitive in China many industries are forced either to upgrade or relocate. Many of these are not registered with Chinese embassies or Chambers of Commerce and operate outside formal state policy, and must negotiate business relationships in African country states (Shen, 2013). However, these states are not uniform, but have distinct histories, and trajectories of development that influence the outcomes (see Scoones *et al.*, 2016).

This paper critically examines the changing framework of agricultural development within Africa in the context of SSC, and the extent to which rising powers—Brazil and China in particular—are contributing to agricultural transformation and the emergence of agribusiness accumulation within Africa, taking Ghana and Mozambique as cases. It attempts to analyze points of convergence and divergence and the political economy interests that underlie specific interventions and shape the articulation of agrarian development policy and SSC.¹ The paper examines the extent Chinese and Brazilian policy contexts and histories shape the interventions in Africa, and how the structural context of agriculture and agricultural policies in Mozambique and Ghana limit and influence the implementation of agricultural development cooperation and investments. Ghana represents a country with a relatively developed smallholder sector, with well established (although not necessarily successful) state policies to support smallholders and integrate them into agribusiness value chains and input markets. In contrast, the Mozambique state favors investments in large-scale agriculture and services for smallholder farmers remain relatively underdeveloped.

The next section provides a brief sketch of the emergence of SSC and its relative importance as a concept guiding economic relations between China, Brazil and African countries. This is followed by an analysis of the development of agribusiness in China and Brazil and its bearing on the framing of their agricultural cooperation in Africa. The final section examines the agricultural settings, structures, and policies within Ghana and Mozambique, and the extent to which these shape, facilitate, and thwart Brazilian and Chinese agricultural interventions.

3. SSC IN HISTORICAL PERSPECTIVE

SSC was first articulated in the UN in the 1970s as a component part of the New International Economic Order (NIEO). In 1974 the General Assembly of the UN endorsed the establishment of the Special Unit For Technical Corporation among Developing Countries (TCDC) within the UNDP, and in 2004 this was renamed the Special Unit for South–South Cooperation. SSC emerged as a framework for building technical cooperation among developing countries to facilitate self-reliant development. SSC was based on notions of increasing regional integration to ameliorate the shocks of the world crisis of the 1970s, and to counter the increasing dominance of the economies of developing countries by multinational corporations. SSC built upon a framework of third world solidarity that can be traced back to the 1955 Bandung Conference, and the Non-Aligned Movement, in which the main principles informing relations between states were based on peaceful coexistence, non-interference in domestic affairs and mutual interest. It was also influenced by Dependency Theory and the recommendations of the United Nations Economic Commission for Latin America (Bello, 2004; Golub, 2013). The main objectives were to promote economic autonomy; reform of the international system of trade and aid; international mechanisms to correct trade imbalances between North and South; regulation of multinational corporations and the recognition of rights of sovereignty of countries to control national resources and economic activities; and preferential trade and technology exchange arrangements to facilitate economic growth (Golub, 2013). The dialog for a new international order took place in the context of the dominant social democratic reforms of the day, which found expression in the search for a “third way” embodied in the Brandt Report, *North–South: A programme for survival* (Independent Commission on International Development Issues, 1980). These demands were articulated in the Buenos Aires Plan of Action in 1978 and in several regional fora, including the 1981 Lagos Plan of Action of the Organisation of African Unity (OAU, 1981).

The rapid rise of neoliberalism from the 1980s resulted in the contestation of the framework of the NIEO. Those advocating neoliberal solutions argued that the world economic crisis was a product of inappropriate national policies, distortion of the economy by state interference and involvement in production, and poor governance. As more developing countries sought relief from the IMF, structural reforms were imposed upon them as conditionalities. These included opening domestic markets to international capital, divesting state economic enterprises and focusing on export-oriented production of primary commodities rather than import-substitution. This resulted in the retreat of North–South dialog and the NIEO (Arrighi, 2002).

Nevertheless, SSC continued to be articulated by a small number of newly industrializing countries as a principle for countering dependence on Washington and takeovers by northern multinational corporations. During the 1970s and

1980s Brazil increasingly developed economic relations with Japanese and Western European capital (Vigevani & Cepaluni, 2007) to limit its dependence on Washington. With the opening up of China in 1979, FDI from Hong Kong, Japan, South Korea, and Taiwan have been highly significant alongside US investments (Chai & Roy, 2006, p. 137). During the 1980s SSC began to be articulated by both Brazil and China in their developing economic relations with Africa. Before this Brazil had pursued an isolationist policy in Africa, resulting from its close relations with South Africa and its support for Portuguese colonialism. This changed in the early 1970s as Brazilian import substitution industrialization was threatened by the world economic and energy crises, and by pressures from US multinationals to gain control over the Brazilian economy. With mounting difficulty in balancing payments and escalating oil imports, Brazil sought to gain new sources of crude oil and markets for its manufactures in Africa to offset its mounting import bill (Vigevani & Cepaluni, 2007). Brazilian exports to Africa rose rapidly from an annual average of \$16 m a year during 1960–65 to \$640 m per annum by the end of the 1970s. Imports consisted overwhelmingly of crude oil, which accounted for 70% of total imports, largely from Nigeria and Angola (Forrest, 1982, pp. 81–82). Technology transfer also included the transfer of knowledge skills and contractual services carried out by Brazilian firms and technicians, and the establishment of joint ventures with African parastatal organizations, in which Brazil largely provided technical skills, within manufacturing, agro-processing, civil engineering and construction, including roads, hydroelectricity, telecommunications, and mining (Hoffman, 1982). These were articulated within a framework of SSC, which stressed the success of the Brazil in adapting western technology to tropical conditions and the suitability of its “tropicalized” manufactures for African conditions (Hoffman, 1982). With the end of military rule, the Collor and Cardoso regimes pursued a policy of closer alignment with Washington, and less emphasis on SSC. The Lula da Silva administration revived SSC and adopted a policy of diversifying economic ties and rebuilding diplomatic and trade relations with Africa (Cabral *et al.*, 2016). As the agribusiness sector became dominant in the Brazilian economy during the 2000s, the Brazilian state began to articulate a new development role as an agribusiness power with relevant technology to solve Africa’s agrarian crisis. A central foreign policy objective is to gain access to US and EU markets, while building multilateral ties and diversified economic relations to hedge against dependence on the north (Moreira, 2009).

In contrast, China has a much longer history of economic and diplomatic relations with African states, originating in the 1950s from participation at the Bandung Conference and establishment of diplomatic relations with Egypt (Neuhauser, 1968). During the early 1960s China established relations with radical regimes within Africa, and supported anti-imperialist national liberation movements. It formed an alliance with the Nkrumah led CPP government in Ghana to build support for radical national liberation movements throughout the continent (Chau, 2014; Ogunsanwo, 1974). As relations with the Soviet Union deteriorated from 1962 onward, China competed with the Soviet Union for influence within Africa. China sought to build relations with developing countries and with Western Europe and Japan to contain the influences of the US and Soviet Union (Yee, 1983). China’s economic assistance to aid in Africa was centered on the One China policy, which aimed to gain support for China’s representation in the UN (Ogunsanwo, 1974). This led to rivalry between China and Taiwan to build diplomatic relations

with African states, including through economic aid. When China gained a seat at the UN in 1971, with considerable backing from African states, it also became heir to the many rural development projects initiated by Taiwan in African countries (Tseng, 2008). Although Chinese aid to Africa from the 1960s to 1980s was modest, it was effective, low cost and given on favorable terms, gaining China a significant presence in Africa. Chinese economic assistance was based on agriculture, agri-industrial processing, light industries, and building and construction of irrigation and hydropower facilities, and civil construction.

Following the demise of the Soviet Union, China’s policies in Africa have become less determined by geopolitical considerations and more by economic prospects. They take place in the context of the modernization of the Chinese economy and its opening up to foreign investment and structural reforms (Anshan, 2008; Taylor, 1998). The liberalization of African markets following structural adjustment has created many opportunities for Chinese companies to win contracts in construction and infrastructure development. The divestment of African state enterprises also created avenues for Chinese investment (Anshan, 2008; Brautigam, 2009; Chaponniere, Gabas, & Qi, 2010; Sun, 2011). These takeovers led to a significant shift in Chinese development assistance from aid to economic investment. Anshan (2008) argues that the 1980s and 1990s mark an important watershed in China’s presence in Africa, resulting in a shift to more commercial-oriented investments and an expansion of investment. China has continued to build economic linkages with African countries, which serve as sources of raw materials and markets for manufactures, but also as arenas for technology transfer and diverse investments. These linkages continue to be articulated through the framework of SSC, which merges contemporary investments with the historical symbols of third world solidarity (Scoones *et al.*, 2016).

4. CHINESE AND BRAZILIAN AGRICULTURAL INTERVENTIONS IN AFRICAN AGRICULTURE

Agricultural development forms an important component of both China’s and Brazil’s relations with African states. Both countries are among the top five agricultural producers in the world, and both have highly developed public research systems, and private commercial input suppliers, which look to expand their influence. Both countries have powerful agribusiness sectors that operate in global markets and engage in expansion through takeovers and mergers. From the 1980s onward there has been a rapid transformation of the agricultural sector in both countries, which influences their agricultural development initiatives in Africa.

(a) *Chinese agricultural initiatives in Africa*

Agricultural development has formed an important part of Chinese aid since the 1960s. The main types of agricultural interventions during the 1960s were state farms with agri-processing capacities such as in sugar and cotton, irrigation projects specializing in rice and vegetable cultivation, and demonstration farms showcasing Chinese technologies and seeds. These agricultural programs drew much admiration for their ability to transform yields and train African cultivators in new but low cost techniques (Baker, 1985; Brautigam, 2009). However, they were poorly integrated into national agricultural services and highly dependent upon supervision of Chinese technicians and provisions of machinery, inputs

and seeds from China, and so often not sustainable (Brautigam, 2009).

In 1978 a major reform was introduced in Chinese agriculture, which involved the demise of collective farms and cooperatives and their replacement by the household responsibility system. Subsequent reforms provided for recognition of intellectual property rights, membership of World Trade Organization (WTO), and the vertical integration of agriculture and smallholder production through the rise of agribusiness and contract farming (Brautigam, 2009; Li, Xin, & Yuan, 2009; Zhang & Donaldson, 2008). During the mid-1990s and early 2000s research, production, extension, and trade were increasingly incorporated into single, often state-owned businesses rather than performed by government agencies (Li *et al.*, 2009; Gu *et al.*, 2016). This has led to the growth of China as an agribusiness power with significant machinery, commercial seed and input sectors. Demonstration farms in Africa and elsewhere have now been given a new lease of life to showcase new Chinese technologies (Xu *et al.*, 2016), and training and exchange programs have become important routes to linking Chinese agribusiness with new markets (Tugendhat & Alemu, 2016).

China's support for the FAO program on SSC provides an important avenue for collaboration in Africa (El-Namaky & Demont, 2013; Brautigam & Xiaoyang, 2009). Chinese companies have made large inroads in the distribution of agrochemicals and farm equipment in Africa and have benefitted from the drive to expand the reach of agro-dealers within rural areas. Chinese products frequently dominate the range of agricultural inputs distributed by these agro-dealers, sometimes owned and run by Chinese migrants, and there is intense competition between Chinese companies to provide cheap and affordable inputs for farmers (Cook *et al.*, 2016).

Chinese investments in agriculture in Africa focus on the gradual building of commercial agricultural services and inputs businesses, rather than on large-scale acquisition of land for food production for Chinese markets, as is often presented in the media (Brautigam & Zhang, 2013). Chinese agricultural investments are likely to proceed through a gradual expansion of agricultural markets in seed, inputs and services, alongside the development of research centers adapting Chinese varieties to local conditions, and a gradual rise of African commercial farms making use of Chinese agricultural inputs and creating demand for Chinese agricultural products.

(b) *Brazilian agricultural initiatives in Africa*

In contrast with China, Brazil does not have a long history of participation in agricultural development initiatives in Africa. Brazil is a major exporter of a wide array of processed foods including, soya, grains, meat products, fruit juices, sugar, and producer of biofuels. It also has strong agricultural machinery, input, hybrid seeds, and biotechnology sectors. The agribusiness sector accounts for about 40% of the value of exports and about 33% of GDP (Lora, 2012). Consequently, agribusiness now exerts a powerful influence on Brazilian economic and foreign policy. The Brazilian state has supported agribusiness by fostering the development of strong public research in agriculture. It also actively participates in building regional free trade blocs, such as the Southern Common Market (Mercosur), which create markets for Brazilian agribusiness, and it lobbies internationally for free markets and more access for Brazilian agricultural produce to US and EU markets (Lechini, 2005).

The expansion of agribusiness in the 1990s was associated with the success of national agricultural research, resulting in new methods of soil management and new plant varieties (Hosono & Hongo, 2012). It was also associated with the removal of state subsidies in agriculture and the opening up of agriculture to foreign investment. By 1997 four multinational corporations (Bunge, Dreyfus, ADM and Cargill) controlled 43% of soy crushing capacity and had acquired 12 domestic firms (Jank, Franco, Leme, Nassar, & Filho, 2001). During 1994–99 there were 171 mergers and acquisitions in the Brazilian food and beverage industry. During the 1990s 17 firms controlled 43% of agribusiness exports (Jank *et al.*, 2001). This intensified competition resulted in the opening up of new frontiers of production in the Cerrado, to which many Brazilian firms and large farmers migrated. Although initially opened up as an area for smallholders to relieve land pressures and calls for land reform, large farms were able to take advantage of the cheap land and labor, and the new technologies created by Brazilian Agricultural Research Cooperation (Embrapa) with support from the Japanese International Cooperation Agency (JICA) (Hosono & Hongo, 2012). During the 2000s, many large Brazilian firms streamlined their core business, and expanded their scale of production through mergers and acquisitions. Several of these firms became some of the largest global agribusiness firms; today over 20 Brazilian agribusiness companies now have annual sales above \$US 1 billion (Economist Intelligence Unit, 2010).

The success of agribusiness has resulted in a highly distorted agrarian economy in which 70% of national agricultural output originates from the Cerrado and 1% of farmers produce over 50% of GNP, while three million farmers (66% of the total farming population) produce only 3.3% of GNP (Mueller & Mueller, 2014). Smallholders have been recipients of social protection programs that create markets for Brazilian agribusiness supplies companies through the More Food Programme, while ameliorating rural poverty and unemployment (Patriota & Pierri, 2014). Government discourse presents an agrarian policy that promotes both agribusiness and family farming (Cabral *et al.*, 2016), however funding is overwhelmingly for corporate agriculture. President Dilma announced a budget of 133 billion reals for the 2013–14 agricultural plan, of which 115 billion reals were invested in corporate agriculture and 18 billion in family farming. Much of the investment in family farming also supports the purchase of machinery to modernize production and acts as a stimulus for agribusiness (Araujo, 2013).

The domestic characteristics of the agrarian economy in Brazil influence agricultural initiatives in Africa, which articulate support for both agribusiness and family farming. They build upon Brazilian social protection policies that have become widely acclaimed in international development and link them to the export of Brazilian technology with concessional loans. The More Food Programme has been extended from the Brazilian countryside to Mozambique, Ghana, Zimbabwe, and Kenya to promote family farming, and concessional loans given for purchase of tractors and other farm machinery. The future development of this program is expected to include Brazilian seeds and other inputs (Cabral *et al.*, 2016).

A second area of Brazilian cooperation involves building the capacity of Embrapa to undertake adaptive research in African conditions. An Embrapa office has been created in Accra. This is strategically situated within the Council for Scientific and Industrial Research (CSIR) complex in Accra, sharing a building with the Alliance for the Green Revolution in Africa (AGRA) and the International Food Policy Research Institute

(IFPRI). Embrapa also collaborates with Forum for Agricultural Research in Africa (FARA) in Accra, which works closely with AGRA to promote new agribusiness approaches and market-led input distribution. These linkages give Embrapa a presence in international development initiatives that promote agribusiness and farmer uptake of agribusiness inputs and seeds, and create potential future channels through which Brazilian agribusiness can gain entry to African markets.

Perhaps the most significant continental initiative of Embrapa is the African-Brazilian Agricultural Innovation Marketplace, supported by international donors, and involving FARA and the Inter-American Institute for Cooperation on Agriculture (IICA).² The objective of the partnership is to support the strengthening of agricultural technology development in Africa through the establishment of research partnerships between researchers working in Africa and Brazil in agricultural development institutions. Research has dealt with improving rice, cotton, banana and plantain varieties, irrigation, water, cover crops, rangeland rehabilitation and cassava harvesting tools in several countries. Through partnerships with Brazilian institutions, the research fosters the use of Brazilian technology and provides a platform for Brazilian expertise in Africa.

Embrapa has also been involved in several technology transfer programs, including rice with the Senegalese Rice Institute, the Cotton-4 program, which involves extending Brazilian cotton varieties and technologies to Benin, Burkina Faso, Chad and Mali, and the ProSAVANA program based on using technologies developed in the Cerrado to open up Guinea woodland areas in Mozambique to commercial agriculture (Patriota & Pierri, 2014).

A third area of Brazilian interest has been in promoting private sector investments in Africa, particularly in biofuels. While this sector has attracted much attention within the international media there has been little materialization of these projects, particularly as a result of the increasing prices for food crops and falling prices of petroleum on the world market. There are actually very few examples of successful large-scale Brazilian investments within African agriculture, and the main focus is the promotion of Brazilian technology, science and expertise, facilitate a commercial demand for these services.

5. AGRICULTURAL INVESTMENT IN GHANA AND MOZAMBIQUE

In the early independence period most African states attempted to diversify their agricultural base away from staple export production for European markets, by establishing large-scale mechanized estates, agri-industrial sectors, and promoting commercial food production, all supported by government subsidies. The imposition of structural adjustment policies resulted in the divestment of state agricultural enterprises, the opening up of African domestic markets to international food imports, the promotion of export-oriented agriculture and the removal of subsidies. These initiatives depressed the use of agricultural inputs among food producers, and resulted in the neglect of investment in national research and extensions services. By the mid 2000s this lack of investment resulted in growing concern among donors about the failings of agricultural policy (World Bank, 2008). New international initiatives were introduced to kick-start a new agricultural revolution in Africa, based on promoting agricultural markets, new investments in agriculture and

infrastructure, and subsidies on agricultural inputs to encourage increasing uptake by smallholder farmers. These developments have been framed as promoting inclusive development and social protection. However, they also serve to promote the deeper penetration of agribusiness into African markets.

This penetration of agribusiness takes two forms. The first is based on corporate food governance in which agribusiness and supermarket chains shape the production strategies of smallholders through contract farming arrangements and the building of networks of farmer organizations and agro-dealers. The second takes the form of investments in large-scale commercial agriculture (World Bank, 2009). The World Bank argues that, while smallholder integration into commercial agriculture is the most efficient relation, large-scale investments are rational when agricultural infrastructure is poorly developed and the private sector becomes responsible for creating infrastructure as part of its commercial operations (World Bank, 2009). This historical policy context has in turn shaped Chinese and Brazilian interventions in agricultural development in both Ghana and Mozambique.

(a) Ghana

Colonial rule created an agricultural economy that was dominated by cocoa and smallholder production, with a lack of large-scale mechanized commercial agriculture. In the early independence period the main concern of agricultural policy in Ghana was to diversify production away from cocoa and to create a viable commercial food production and agri-industrial sector. Under Nkrumah the main emphasis was on establishing state farms and cooperatives outside of the main cocoa zone in the high forest which was reserved for smallholder production (Grischow, 2006; Miracle & Seidman, 1968). From the late 1960s to the mid 1970s the main focus was on the promotion of large-scale private sector agriculture, particularly in rice production (Konings, 1986). From the mid 1970s, with the failure of large-scale producers to meet domestic needs for food production, the government introduced smallholder contract farming with parastatal organizations controlling allocation of land (in irrigated areas and oil palm estates), allocation of inputs and extension advice and marketing of produce (Amanor, 1999; Daddieh, 1994; Konings, 1986).

With the adoption of structural adjustment the main emphasis was on promoting export-oriented agriculture. Most agricultural budgetary resources were allocated to the cocoa sector, and there was no systematic program for the food sector until the 1990s, when the Medium Term Agricultural Development Programme was launched (Hutchful, 2002). With removal of subsidies in the early 1980s, fertilizer and certified seed usage among farmers declined (FAO, 2005). Food imports have grown and currently about US\$ 1 billion is spent annually on food imports, mainly on rice and meat products (Nicely & Ashitey, 2012).

Although structural adjustment dismantled parastatal enterprises and state control over input distribution, it was partially resisted by the state, which maintained its role in cocoa marketing and continues to intervene in contract farming, albeit in partnerships with the private sector, in which the state provides extension advice and seeds produced by national agricultural research services. In recent years this has expanded into an approach based on value chains and food governance, involving partnerships between the state, NGOs and private sector. The Ministry of Food and Agriculture (MOFA) has also worked with the private sector to facilitate uptake of new technologies (Amanor, 2010; Ouma, 2015). Since the

mid-2000s, the state and aid donors have also facilitated linkages between social protection programs and commercial market development in inputs, with food processors and input distributors working with international and local NGOs to enable farmer organizations, which provide farmers with loans, technology packages and guaranteed markets. The state has also introduced programs to facilitate the spread of agricultural mechanization through the creation of privatized mechanization centers and procurement of subsidized machinery. It has encouraged uptake of fertilizers through subsidization. It has engaged in state procurement through a National Food Buffer Stock Company. It has created a block farming program, which encourages farmers on contiguous lands to organize together to receive mechanization services, inputs, certified seeds, loans in kind and guaranteed markets for products (Benin *et al.*, 2013). All this has in turn allowed the major private agribusiness input distributors to gain increasing control over markets, and opened up opportunities for new entrants.

State support for agribusiness development has also been facilitated by international actors. For example AGRA (the Alliance for a Green Revolution in Africa, supported by the Bill and Melinda Gates Foundation) has supported programs on commercial seed breeding, the financing of private seed companies, and the development of agro-dealers (Amanor, 2010). There have also been attempts to revive commercial rice production for the domestic market with foreign investment. JICA, the government of South Korea, the EU, World Bank and Chinese interests have been involved in the rehabilitation of irrigation projects. Currently there is a concerted effort to promote irrigation on the Accra Plains with World Bank support. This involves a public-private partnership model in which commercial companies are responsible for both infrastructure development and contract farming arrangements with smallholders (Amanor, 2015).

Interventions in land administrative reform, supported by the World Bank, DFID and the German Federal Enterprise for International Development (GIZ), has also facilitated investment. Decentralization of land administration to Customary Land Secretariats has been manipulated by chiefs who have used their recognition as custodians of land to expropriate farms and sell land to property developers in peri-urban areas (Ubink, 2008) and to commercial farmers and foreign investors, creating many tensions within communities (Amanor, 2009). Beyond this there are many disputes over land, which results in many uncertainties in the acquisition of large areas of land for commercial agriculture.

(i) *Chinese initiatives in the Ghanaian agricultural sector*

The main interventions of China in Ghanaian agriculture have been in the rice sector. During the early 1970s China developed several programs in irrigated rice and vegetable production for smallholder farmers, replacing similar Taiwanese projects (Amanor, 2015). However, by the mid 1970s these programs were transferred back to the Ministry of Agriculture, and during the 1980s and 1990s irrigated rice projects were taken over by other donors including JICA and the EU. Chinese construction companies continued to play an important part in rehabilitating and extending irrigation facilities, most notably on the Afife/Weta Irrigation Project, while the Ministry of Agriculture has maintained control over extension. One of the largest Chinese construction companies working in Ghana, ChinaGeo is interested in investing in irrigation and food crop cultivation. It has established a small pilot project at Aveyime. However, it has also experienced difficulty in bidding for contracts, in gaining sufficiently large areas of land

with secure land rights, and has little interest in working within the framework of public private partnerships, which dominate the irrigation sector in Ghana. Currently it has moved away from investing in the main commercial irrigation sector within the Accra Plains, and is negotiating to acquire 30,000 ha of land incorporating an old dilapidated state irrigation site, on which it intends to develop both large-scale mechanized production and contract farmer arrangements (Amanor, 2015). In 2014 it was involved in a bid to extend irrigation facilities in the Volta Region, including at Afife/Weta. Negotiations broke down as a result of community disputes with various factions claiming rights to the land, or resisting the ensuing redistribution of land that would occur. ChinaGeo was also outflanked by a consortium of interests, including the rice producer Global Agri-Development Company (GADCO) and the largest fertilizer, seed and input distributor, Wienco, which moved into the area to organize and control the distribution of inputs and the marketing of farmers' rice (Amanor, 2015). ChinaGeo is also interested in rehabilitating and expanding a rice research center at Ashiaman, which will serve to adapt Chinese hybrid varieties for future commercial production in Ghana (Amanor, 2015).

A second focus for Chinese investors is agrochemicals, particularly herbicides, which form the most widely used input in smallholder agriculture, widely adopted by both farmers and laborers for land clearance and weeding. The agrochemical markets are dominated by small agro-dealers situated around markets in urban and rural areas. Chinese herbicides completely dominate these markets and have displaced other agrochemical producers. There is intense competition between different Chinese agrochemical producers, which has resulted in Wynca Sunshine, the dominant company, establishing an assembly plant in Kumasi, which enables it to undercut its rivals to control the market (Lerong, Jixia, Tugendhat, & Xiaoyun, 2015).

Expansion of Chinese agriculture sector interests in Ghana has been slow. Limits on land access, and the challenges of securing investment locations have hampered agribusiness investments. Agriculture is often an offshoot of wider operations, such as in construction, and so risks can be balanced against other opportunities. Chinese agribusiness has made big in-roads in agrochemicals, where they dominate markets throughout the country. Private agribusiness, especially in the input supply and service sector, is important, and can be expected to grow over time, as new business opportunities are found.

(ii) *Brazilian initiatives in the Ghanaian agricultural sector*

The main Brazilian bilateral agricultural program initiated in Ghana has been More Food International (MFI, Cabral *et al.*, 2016). This aims to provide access to relevant technologies to enhance smallholder production. However, the MFI program competes against similar programs within Ghana with international linkages, both concerned with the provision of agricultural machinery and inputs to smallholders and the integration of smallholder farm policies with value chain promotion and social protection. Consequently the MFI program has been contained within the Agricultural Mechanisation Services Centre program that seeks to promote the development of privatized mechanized services for hire to farmers (Cabral *et al.*, 2016). MFI has to compete against much larger Indian concessional bilateral loans for supply of Indian tractors. MOFA has also initiated its own programs that control the supplies of inputs to smallholders and link to other social protection and agricultural production programs. This thwarts the Brazil's MFI program in Ghana.

The second major intervention of Brazilian origin has occurred in private sector investments in the rice sector in the Volta Region, by a Brazilian company, Brazil Agro-Business Group. This company has introduced techniques of rice cultivation developed in southern Brazil. It has acquired 5000 ha of land in the Volta Region and has brought technicians from southern Brazil to develop commercial rice production (Amanor, 2015). The company claims that its yields in Ghana are high and far exceed typical yields gained in the rice production areas of southern Brazil. However, production is constrained with problems of gaining secure access to land with rival factions of chiefs and elders within the community making claims and counter claims to the land in a bid to gain more rents from the company. The Brazil Agro-Business Group also experiences difficulties in gaining access to machinery, spare parts and seeds from outside of Ghana, as a result of the regulatory system and entrenched interests that control imports. The costs of inputs are, as a result, much higher than in Brazil (Amanor, 2015).

The Brazil Agro-Business Group have also brought technicians from southern Brazil into the Ghanaian rice sector, and through these connections one Brazilian company, Agropecuária Felloto, has been working with Global Agri-Development Company (GADCO), an international rice producing company with linkages to the UK, Nigeria and India, in developing its commercial rice production (Amanor, 2015). However, this relationship is no longer flourishing. GADCO's main partner in developing technologies for distribution to contract farmers is now Wienco. Within Ghana, Wienco has a long history, predating structural adjustment, of supplying farmers with inputs. Currently, Wienco has linkages with Syngenta and Pioneer, channels through which it can import new seeds for distribution to farmers in Ghana (Amanor, 2015). Agropecuária Felloto has itself relocated to Kenya, where it is able to gain better access to inputs and cheaper, hybrid Indian seed seeds.³

The optimism of Brazilian narratives of the relevance of Brazilian experience to Africa is not matched by investments and interventions on the ground in Ghana. As these cases show, many constraints exist, and Brazilian investments are likely to proceed slowly and cautiously through the gradual building up of joint research capability, the establishment of bilateral credit arrangements creating avenues for Brazilian technology, and the hiring of Brazilian technical services, rather than investments in large-scale commercial agriculture.

(b) *Mozambique*

Portuguese colonialism combined elements of a concessionaire system with European settler farmers and indigenous peasant production. In the early phase Portuguese settlers were often involved in trading crops produced by African cultivators. The development of large Portuguese settler estates was limited until the early 1960s when an expansion began to occur. This was the result of a deliberate policy of settling Portuguese farmers in the colonies. This led to the development of significant export sectors in cotton, sugar, sisal, and tea, but resulted in the displacement of many African farmers who were coerced into working as laborers on European plantations. This resulted in increasing discontent, which laid the foundations for the anti-colonial war (Dinerman, 2006; Vail & White, 1980). With the attainment of independence in 1975, Frelimo transformed the colonial estates into state farms. Policies for smallholder farmers promoted collectivization. During the 1970s and 1980s Frelimo's agrarian policies favored large-scale mechanized

state farms, which received over 90% of the agricultural budget. These policies compounded the marginalization of smallholder agriculture and failed to raise agricultural production (Bowen, 1989; Castel-Branco, 1994). The ravages of the civil war during 1976–92 exacerbated the decline of the agricultural sector.

In 1990 Mozambique abandoned its “socialism” and opened itself to liberal market reforms. This resulted in an influx of international aid and NGOs. Mozambique became heavily dependent upon food aid, which accounted for 86% of food consumption in the 1990s and early 2000s, as compared with 9% in 1975 (Brito *et al.*, 2015). In 2007, western donors contributed more than two-thirds of the Ministry of Agriculture (MINAG) budget (De Renzio & Hanlon, 2007, p. 15). The main reforms in the agricultural sector under the National Development Programme (PROAGRI) were concerned with institutional reforms, promoting market production, food security, support for smallholders and stimulating agri-industries. Although PROAGRI was supported by the EU, World Bank, FAO, UNDP and DANIDA with funds of over \$200 million from 1998 to 2007, the farm incomes of smallholders and their use of inputs declined (De Renzio & Hanlon, 2007, p. 5; Cabral, 2009). State investment in agriculture has remained minimal. Only 4% of the annual budget during 2000–08 was allocated to agriculture and only 8% of GNP invested in agriculture in 2010–11 (Mosca, 2014, p. 11). The smallholder farm sector continues to remain highly marginalized.

The current Strategic Plan for Agrarian Development (PEDSA) for 2008–19 stresses support for the family farm sector by the state. Other agricultural sector policies are concerned with building food security, including the Green Revolution Strategy adopted in 2007, the National Action Plan for Food Production and the Strategy and Action Plan for Food and Nutritional Security. The policies have been developed in the context of popular discontent with escalating food prices, which resulted in demonstrations in 2008, 2010 and 2012. Although policy frameworks articulate support for family farming, there is a noticeable shift toward an emphasis on foreign investment in large-scale production and agribusiness. There continues to be a serious deficit in food production and reliance on imports of rice and wheat.

The government also introduced a new Land Law in 1997, which provides for clearly recognized customary rights to both own and sell land. This has facilitated the acquisition of land leases by foreign corporations through negotiations with customary authorities. Tax exemptions also exist to encourage foreign investment in agricultural infrastructure.

Today, the combination of an agribusiness-friendly policy environment, a major concern about food security and land laws that may facilitate investment, has provided a particular contest for Brazilian and Chinese engagements with Mozambique.

(i) *Chinese initiatives in the Mozambican agricultural sector*

China has engaged in agricultural initiatives in Mozambique since independence in 1975, when it supported the development of two state farms: Moamba in Maputo Province, and Matama in Niassa (originally established by the Portuguese during colonial rule). Both state farms collapsed during the civil war.

During the 2000s Mozambique received loans from China Exim Bank to rehabilitate and develop important agricultural infrastructure in regions considered critical to boosting the agriculture sector. The two most significant developments

are a \$50 million concessional loan, approved in 2010, to build three agro-processing factories (cotton, rice, and maize) in the provinces of Manica, Zambezia and Tete; and a long-term credit line from China Exim Bank of US\$60 million in 2012 to develop an agricultural complex in Chokwe district, Gaza province. The Chokwe Agro-Processing Complex aims to develop cattle breeding and rice farming, rehabilitate irrigation and develop processing facilities. Chinese loans to the Mozambican agricultural sector are essentially bilateral agreements that support the activities of Chinese companies (Chichava, 2014c).

Chinese agricultural cooperation in Mozambique is carried out through two avenues. The first involves the establishment of an Agricultural Technology Demonstration Centre (ATDC), the Centro de Investigação e Transferência de Tecnologia Agrárias do Umbeluzi (CITTAU), which was established in 2011. This works with national agricultural institutions, such as the Ministry of Science and Technology (MCT) and the Institute of Agrarian Research of Mozambique (IIAM) to test the suitability of Chinese seed varieties to local agroecological conditions, and to develop adaptive research to enhance local seed varieties (Xu *et al.*, 2016). CITTAU also organizes training courses on technology transfer for Mozambican agricultural experts and farmers. The first training course on Chinese agricultural technology organized by CITTAU took place in June 2012 and aimed to educate local producers on vegetable production, agricultural machinery operation, animal nutrition, rice and maize production, processing and management. Chinese and Mozambican experts conducted the course, involving 34 local producers from the south of the country. CITTAU has also organized courses on biogas production using organic and animal wastes (Chichava & Fingerman, 2015).

The second type of initiative involves contract farming between local Chinese agricultural companies and Mozambican farmers. The main companies involved in these arrangements are Wanbao Africa Development Agriculture Limited (WAADL), which focuses on rice production, Lianhe Africa Agriculture Development Company, which is concerned with rice and cotton, and China–Africa Cotton Mozambique Ltd. (CACM). WAADL is considered by China Development Bank (CDB) to be the largest Chinese agribusiness company in Africa, which it has supported with a loan equivalent to US\$20 million. All three companies provide farmers with seeds, fertilizers, and agricultural machinery. The costs of these services are deducted from the final yield when the company buys grains after harvest. According to one Chinese manager of Lianhe Africa Agriculture Development Company, the contract farming system used is an adaptation of the “Chinese household contract system” (Chichava, 2015). Other Chinese companies active in Mozambican agriculture include Sunway International, involved in the production and processing of groundnuts, China Africa Agriculture Co, a cotton producer, Agricola CCM, involved in cereal production, and Hubei Lianfeng, concerned with the import of agricultural machinery, fertilizers, and agrochemicals, as well as diverse forms of agricultural production (Chichava, 2014a).

Although the main companies focus on building contract farming relations, the alienation of land to them for core estate operations has resulted in local unrest. The WAADL rice investment in Xai-Xai is one of the leading examples. It has been accused of depriving local farmers of land, and several demonstrations have been organized to protest against its activities (Chichava, 2014b).

Building on long-term engagements, Chinese development cooperation and agribusiness investment in Mozambique has

expanded in recent years. Taking over old state farms and encouraging contract farming of a variety of crops, aimed at tackling local food deficits is a priority. This has had strong Chinese state backing, with state-owned enterprises taking the lead (Gu *et al.*, 2016), and is complemented by the flagship investment in the ATDC (Xu *et al.*, 2016). Taking over state farms that have since been occupied can result in local protest, as has been experienced in Xai-Xai. As a strong partner with the Mozambican state, China’s efforts in the agricultural sector, under the broad umbrella of SSC, are likely to continue to expand.

(ii) *Brazilian initiatives in the Mozambican agricultural sector*

Brazilian agricultural initiatives in Mozambique, as in Ghana, are structured around social protection, technology transfer and export of Brazilian agribusiness products. They involve both bilateral transfers associated with export of Brazilian machinery and trilateral programs with western donors associated with technology transfer, which is often articulated within a framework of SSC. In March 2015, Brazil and Mozambique signed a Cooperation and Investment Facilitation Agreement (ACFI) with the aim of “strengthening the internationalization of Brazilian companies by giving investors greater security”.⁴ This indicates the commitment of the Brazilian government to support Brazilian private sector investment in Mozambique.

As in Ghana, the main bilateral program is the MFI program, which provides credits for the export of Brazilian tractors and other agricultural machinery to Mozambique, within a framework of support for family farming (Cabral *et al.*, 2016). However, in addition to this the Government of Brazil has initiated the Purchase from Africa for Africa (PAA) program in 2012, which aims to contribute to food security by purchasing food crops from local farmers to supply local school feeding programs. It is carried out in partnership with the FAO, World Food Programme and DFID.

The main technology transfer program is ProSAVANA, which involves Brazil’s largest aid disbursement in Africa of US\$21 million, implemented in partnership with Japan. It seeks to replicate the technologies used in developing the Cerrado region of Brazil in Mozambique, in relation to both smallholder and commercial agriculture (Gonsalves and Shankland, 2016). The project has three components: improving and strengthening agricultural research and extension capacities; implementing pilot projects for small and commercial growers; and developing broader infrastructure to support the development of markets and commercial agriculture within the Nacala corridor. The long-term objective is to lay the foundation for future Brazilian and Japanese investments by creating an agricultural infrastructure servicing different categories of farmers, which will facilitate vertical linkages between input suppliers, farm producers, and food processors. Business promotion activities have also been carried out to encourage Brazilian and Japanese agribusiness to invest in Mozambique; to mobilize Japanese and Brazilian capital to support agribusiness developments, and to support farmer associations organized by Brazilian farmers to integrate smallholders into agribusiness value chains (Chichava *et al.*, 2013). Loans are also to be provided to assist the development of commercial enterprises that integrate smallholders into contract farming. However, ProSAVANA has sparked huge controversy, with local civil society organizations claiming that the project will deprive local farmers of their land and benefit only Brazilian and Japanese multinationals and the Mozambican elite, resulting in a “No ProSAVANA” campaign (Gonsalves and Shankland, 2016). ProSAVANA has also been

affected by the recent Brazilian economic crisis, which has resulted in a decline of investment in developing projects (Mellor, 2015).

Private Brazilian agricultural investments are also taking place in Mozambique. These include Mozaperon Agropecuária and Araperon Agropecuária, which have acquired land for cereal and livestock production in Nampula and Niassa province respectively, and Agromoz, a subsidiary of Grupo Pinesso from Brazil, which in September 2012 announced its intentions to produce soybean in Gurue, Zambézia province.

Given long-term links, Mozambique has a much more developed engagement with Brazil than Ghana. The favorable investment environment, combined with the availability of land has provided more opportunities for agribusiness, while the close government-to-government relations have allowed MFI to take off, at least at a small scale. Compared to Chinese engagements, Brazilian development cooperation and agribusiness ventures are often in partnership with others, sometimes mediated by international organizations such as the FAO, which currently has a Brazilian director general. However, the reactions to the large-scale plans of ProSA-VANA, combined with the economic crisis in Brazil, have resulted in some back-tracking, with some of the wider ambitions put on hold, at least for now.

6. CONCLUSION

As the examples from Ghana and Mozambique show, there are ranges of engagements in the agricultural sector by both Brazil and China. However these are often quite tentative, with grand plans often not materializing. State support to agribusiness investment is very evident in all cases, with the backing of credit lines, technology demonstration and training, research and exchange visits. While presented under the rhetoric of SSC, the modalities of contemporary Chinese and Brazilian interventions within African agriculture are highly influenced by agribusiness accumulation and the incentives for investment for the long term. Opportunities in Africa are in turn influenced by the structural reforms introduced by Brazil and China in their domestic economies to create a highly competitive agribusiness sector. However, the capacities of Chinese and Brazilian agribusiness to intervene in African agriculture is ultimately influenced by the nature of competition and control of agricultural markets, access to land and the political context, including civil society reactions to external interventions.

In Ghana, the state has been actively involved in integrating smallholders into input and processing markets since the

1970s. As a consequence, entrenched interests and established alliances dominate input markets, which frequently constrains and frustrates new entrants. Thus, the Brazilian attempt to extend the MFI program in Ghana has been frustrated. Similarly, Chinese initiatives to expand irrigated rice farming have been outflanked by other seed and input programs. In contrast, in Mozambique, the state favors large-scale agriculture and foreign investment in estate agriculture, and has little vested interest in contract farming integrated with state agricultural services. This results in a less developed agricultural infrastructure of service provisioning and more scope for foreign investors and donors to be involved in shaping and supporting agricultural services, including through trilateral cooperation initiatives, such as the ProSA-VANA flagship initiative. Through the existence of the ATDC, Chinese agricultural technologies and seeds have also made greater inroads into Mozambican markets. There is also more scope for Brazilian and Chinese companies to acquire land in Mozambique than in Ghana. However this results in local and civil society unrest and opposition. In Ghana, the existence of well-developed markets creates opportunities for the private sector, as in the intense competition among Chinese agrochemical suppliers leading to the establishment of a local manufacturing plant. But private sector companies can also relocate to other countries, where more favorable conditions are thought to operate, as in the case of Agropecuária Fellota.

Although taking on different characteristics in the national contexts of Ghana and Mozambique, the interventions of China and Brazil in the agricultural sector are similar to those promoted by other international agencies, donors and agribusinesses, forming the basis for a gradual extension of agribusiness and commercial inputs into African rural areas. Although the framework of SSC promises to develop a framework of mutual learning and joint benefits, the technology transfers and investments in practice operate within the dominant frameworks of global agribusiness and capital accumulation. Interventions rarely create platforms for a more reflexive debate on sustainable agriculture or equitable development, nor do they promote forms of rural mobilization for more participatory development. They instead reflect the dominant trends in contemporary agricultural development that promote market penetration, capital accumulation and the integration of smallholders into existing forms of market accumulation. Beyond the framing of diplomatic relations within SSC, the underlying processes of Chinese and Brazilian engagements in Africa have many similarities with the accumulation imperatives of agribusiness from elsewhere.

NOTES

1. See Chichava and Fingerman (2015), Chichava (2015), Chichava et al. (2013) and Amanor (2015) for detailed working papers of these case studies.

2. "African and Brazil to Cross-fertilise Agricultural Ideas" Sci. Dev. Net., 27 July 2010, <http://www.scidev.net/global/biotechnology/news/africa-and-brazil-to-cross-fertilise-agricultural-ideas-1.html>. Accessed 8 August 2015.

3. See "Uma Semente gaúcha na África" *Planeta arroz*, 10 May 2013, http://www.planetaarroz.com.br/site/noticias_detalhe.php?idNoticia=12097. Accessed 15 March 2015.

4. "Brazil and Mozambique sign agreement for cooperation and Investment facilitation", 30th March 2015, *Macauhub*. <http://www.macaub.com.mo/en/2015/03/30/brazil-and-mozambique-sign-agreement-for-cooperation-and-investment-facilitation>. Accessed 15 June 2015.

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