Future Agricultures

CBAA Working Paper

Chinese and Brazilian Cooperation with African Agriculture: The Case of Ghana

Kojo Sebastian Amanor

This paper was produced as part of the China and Brazil in African Agriculture (CBAA) Project work stream

China and Brazil in African Agriculture (CBAA) project Working Paper series

The **ESRC (UK Economic and Social Research Council - ES/J018317/)** funded CBAA project is exploring the new development cooperation engagements in agriculture across four African countries. The project is examining the politics of aid and investment policy in China and Brazil, exploring how understandings of agricultural development are translated in aid and investment projects.

The project is being carried out as part of the Future Agricultures Consortium, connecting researchers from institutions in the UK and Africa with colleagues from China and Brazil. The research involves a mapping phase that is generating a geo-referenced database of Chinese and Brazilian agricultural development cooperation projects in Ethiopia, Ghana, Mozambique and Zimbabwe. In addition, in-depth case studies of a sample of these projects, are examining the ways in which experience and expertise from China and Brazil engage with the realities of African agriculture and the perspectives of African scientists and farmers.

Comparative analysis across projects, countries and types of intervention are addressing the question of whether a "new paradigm" of development cooperation is emerging, and assessing the implications for the future of agricultural aid and investment policy.

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Introduction

Both China and Brazil have established a significant presence in trade, investment and international development cooperation in Ghana. Both uphold a framework of South-South cooperation based on respect for national sovereignty and national interests, non-intervention, non-imposition of conditionalities, and commonalities based on histories as colonised nations or, in the case of Brazil, of cultural affinities (Amanor 2013). All three countries have been through processes of market liberalisation restructuring during the 1990s and 2000s. This has opened them to new forms of investment and capital accumulation and led to new trajectories of foreign investment by the rising powers. This paper explores the differences in Brazilian and Chinese investments in Ghana. It examines the extent to which the framework of South-South cooperation illuminates or masks these changing relationships and their political economy dimensions. The process of economic restructuring has involved changing alignments between the state and private sectors. As such, the relationship between state and private sector foreign investments by these rising powers must be examined within the context of the Ghanaian and global rise of agribusiness, as well as government support for such agribusiness based on food value chain analysis and support for the concept of market governance. These developments are placed within a long-term framework for the changing agrarian political economy of Ghana and the impact of economic liberalisation on the Ghanaian agricultural economy. The paper also addresses the social vision of development embedded in these frameworks of South-South cooperation and whether they harmonise with Ghanaian agrarian sector visions and societal developments. The first section examines the extent, framing and structure of Chinese and Brazilian investments in Ghana. The second section outlines the changing political economy of the agrarian sector within Ghana as well as the changing framework of agrarian policy in the context of market liberalisation and rise of agribusiness. The third section examines the specificities of Chinese agricultural investments in Ghana in relation to its wider investments and interests in Ghana. The fourth section examines Brazilian investments within the Ghanaian agricultural sector in relation to the expansion of Brazilian agribusiness and its integration into the global economy. Lastly, the final section deliberates on the impact of such developments on Ghanaian agriculture and society.

China and Brazil in Ghana

Ghana is an important African country for both China and Brazil, and this reflected in the country's high level institutions for development cooperation. These occur in a nation that has been subject to considerable aid and interventions to reform the institutional framework of economic administration by donors since the early 1980s, when Ghana became the first African country to implement a structural adjustment programme. China has established the West Africa regional office of CADFund in Accra, to facilitate Chinese investment in West Africa. Likewise, Brazil established an Africa office of Brazilian Agricultural Research Corporation (EMBRAPA) in Accra. However, it was not practical, logistically, to run an independent regional office from Accra, given the continent's transport and communication constraints and significant variations in natural and policy environments within and between different countries.

Economic relations between Ghana and China are marked by the large, long-term loans that China has granted to Ghana for the development of its infrastructure. This takes place within the context of the recent development of the oil industry in Ghana, and Chinese interests in oil, since these oil resources have been used to underwrite and justify these loans. Ghana has recently signed two concessionary loan agreements with China's Exim (Export-Import) Bank to the value of over US$13 billion dollars[i]. The first concessionary grant took the form of a US$3 billion loan facility for energy, infrastructure development – including roads and irrigation facilities. The second concessionary loan of US$10.4 billion is for the development of a railway system from Kumasi to the north, expansion of the road network in the east, and for energy infrastructure, education and sanitation facilities. The loans are underwritten by Ghana's new petroleum and gas resources. The US$3 billion loan was opposed by the IMF. However, when the Government of Ghana threatened to walk out of the IMF, it eventually approved changes to loan conditions for Ghana. The Chinese National Offshore Company has also signed an agreement with the Ghana National Petroleum Company for a stake in Ghana's Jubilee Oilfield. Ghana will supply China with 13,000 barrels of crude oil per day, its share of the Jubilee Oilfield, which will underwrite the repayment of the US$3 billion loan over a 15 year period. However, it has been estimated that Ghana could pay back the loan in just five years from the proceeds of one of the sponsored projects on developing gas resources. Trade between Ghana and China has expanded rapidly during the 2000s, and China has emerged as Ghana's second largest trade partner to the EU with bilateral trade reaching around US$2 billion in recent years. However, this trade is weighted in favour of China, with the Asian country gaining a favourable trade balance whilst Ghana incurs substantial deficits. Ghana's trade deficit with China grew from US$70.3 million in 2000 to US$474.3 million in 2006 (African Center for Economic Transformation 2009). Trade follows the classical core-periphery structure with Chinese imports to Ghana dominated by manufactured goods, and Ghanaian exports by primary agricultural commodities and raw materials (Tsikata et. al. 2008). Beyond this, China sponsors many small projects contributing to the cultural life of Ghana in the fields of communication and culture, such as building a national cultural centre (Tsikata et. al. 2008; Idun-Arkhurst 2008).

The main areas of economic cooperation between China and Ghana include infrastructure, energy, communications, agriculture, trade, and education and training. In agriculture exchanges have been facilitated in the areas of irrigation, agroprocessing, agricultural technology and infrastructure development. Yet Chinese investments in the agricultural sector are relatively small, constituting about 4 percent of total investments (African Center for Economic Transformation 2009). Until 2006 they constituted about US$10.4 million of which the largest share has been spent on irrigation projects at Nobewam and Afefe. Whilst this may not be a particularly large figure, these have been important projects. There are few rice irrigation projects that continue to function in Ghana, and the Afefe project is the leading one. Major problems in the irrigation sector are the high costs of rehabilitation and using electricity to pump water. Because of this, many of the irrigated rice projects have been unable to meet payments or remain connected on the power grid. By contrast, the irrigation system at Afefe is largely based on gravitation flow, enabling cheap access to water for farmers. As a consequence the Afefe Irrigation Project is the largest producer of commercial rice varieties sold on the Ghanaian market. The Chinese government has also sponsored Chinese volunteers to teach agriculture at the University of Ghana (African Center for Economic Transformation 2009).

Brazilian investments within the Ghanaian economy are dwarfed by those of China. However, Brazilian investments largely focus on the agricultural sector, and in this they make a very significant contribution. It's most significant initiative is the extension of the More Food Programme from Brazil to Ghana, which provides loans totalling US$98 million for the acquisition of Brazilian agricultural technology by Ghanaian farmers. The More Food Programme is based on a commitment to inclusive development, smallholder family farming and poverty alleviation, and is linked to social protection policies – such as school feeding programmes and conditional cash transfers to poor families for child schooling. African countries participating within the More Food Programme have already enacted a number of social protection measures based on the Brazilian model (Patriota and Pierri 2013). Private sector investments are also becoming increasingly significant within the agricultural related sector, including investments in agro-processing. This includes a US$300 million loan from the government of Brazil to the company Northern Sugar to build a sugar cane complex for the production of ethanol (with an ethanol plant to be built by Constran S/A of Brazil), a recent but as yet undisclosed contract to establish a cashew processing plant in Ghana, an investment of US$300 million by Dos Branco group in a biscuit and pasta processing plant, and investments of Brazilian companies in rice production.

In contrast with the China-Ghana trade which concentrates on manufactured goods and raw materials, trade between Ghana and Brazil focuses much more on agricultural produce – reflecting the centrality of agribusiness to the Brazilian economy. In 2011 Ghana's total imports from Brazil were worth US$282 million, of which sugar accounted for US$137 million and meat products for US$57 million. Exports from Ghana to Brazil were worth US$29 million, of which US$27.5 million consisted of fruits and nuts andUS$0.8 million of cocoa products[ii]. Thus trade between Brazil and Ghana is limited by the reliance of the two economies on agricultural products. The terms of trade between Brazil and Ghana is thus highly distorted in favour of Brazil.

In articulating a framework of Southern solidarity with Africa the government of Brazil drew upon symbols of cultural similarity, the existence of a large African diaspora in Brazil, the commonalities of a history rooted in the Slave Trade and the similarities of the environment. In terms of cultural exchange in Ghana, the Brazilian Embassy has been instrumental in developing cultural ties, such as supporting a carnival in Accra in February (which is rivalled by a September carnival supported by British networks). The Brazilian government has also supported the rehabilitation of Brazil House in Accra, one of the oldest houses in Accra established by the Tabon, an originally Islamic community of repatriated freed Brazilian slaves who chose to resettle in Accra during the nineteenth century, although they traced their origins to Mali.

However, these cultural links tend to be superficial and do little to deepen cultural exchange between Brazilians and Ghanaians, or build cultural familiarities and modes for communication. Although there is great interest in Africa among African Brazilians there is little Brazilian government support to encourage exchange visits or to deepen African Studies within Brazil. Whilst Brazil provides generous support for African students to study agricultural studies in Brazilian universities, few Ghanaian students can take up such opportunities, since they require fluent Portuguese, and few opportunities exist as yet for them to acquire proficiency in this language.

By contrast, China articulates its Southern solidarity in terms of its long-term history of economic cooperation with Ghana, dating back to the Nkrumah period when over 200 Chinese technicians and diplomatic staff were located in the country. It also stresses the diplomatic support Ghana has given to China in its bid for a permanent seat in the UN and its support for the One China Policy in international relations (not officially recognising Taiwan), and the common framework of developing country interests that both nations have upheld internationally (Idun-Arkhurst 2008). The Chinese government has supported the development of Chinese language studies at the University of Ghana and facilitated the study of many Ghanaians in China. Within China, African Studies programmes are being developed and African lecturers recruited. Beyond this, since the 1980s many Chinese nationals have been working in diverse occupations within Ghana, including road construction, informal sector gold mining and agriculture, building up familiarity with Ghanaian conditions. Many Ghanaian traders visit China to purchase goods and the Chinese embassy also provides information on trading in China for them. Thus there is a multi-sector acquisition of cultural knowledge by citizens of the two countries. The existence of large numbers of Chinese working within Ghana and in rural areas sometimes leads to conflicts between communities and cultural misconceptions, which require that both governments work towards better cultural understandings and education of citizens on cultural relations and economic opportunities, as well as towards more openness in informing citizens on economic policies (Tsikata et. al. 2008).

Agrarian development in Ghana: The historical context for new engagements

Although China has a long history of engagement with the agricultural sector in Ghana from the 1960s, it has been transformed considerably in recent years by the imposition of structural adjustment policies and movements of international agribusiness into Ghana. These developments have been uneven and piecemeal, in which foreign capital has tended to invest in a limited number of favourable sectors, usually concerned with export crops, while service provisioning to staple food sectors has stagnated. Ghanaian agricultural policy has also moved from an emphasis on developing agri-industrial linkages with a strategy of state-led import-substitution growth, to a policy of export-oriented production, agribusiness promotion and food value chain development through market governance. This has created potential openings for the Brazilian strategy of promoting the internationalisation of Brazilian agribusiness. Thus, the Chinese and Brazilian engagements in the agricultural sector in Ghana must be understood in relation to these wider interactions (economic, cultural and political), over time, as well as the wider historical framing of such engagements in Africa (Amanor 2013). These engagements are inserted into a longer-term process of change, and so these new interventions on aid, investment and technical and scientific cooperation must be understood in the historical context of agrarian development in Ghana. As such, this section offers a brief historical overview of agrarian change in Ghana.

Ghana is characterised by two natural environments, a southern high forest and a northern Guinea savannah zone. Under colonial rule, the high forest zone was the main export crop zone, and the northern savannah area served as a labour reserve for the south. The main export crop produced was cocoa, produced on differentiated peasant smallholdings rather than on large colonial estates. It was not until the late 1940s that a comprehensive research institutional structure of experimental farms began to be developed for the food sector to raise food production. During the 1950s the colonial government began to develop large agricultural estates in the north for the production of groundnuts, combining mechanised agriculture with forms of co-operative migrant labour drawn from particular ethnic groups and organised on a group basis (Konings 1986). These developments rapidly proved to be a failure.

During the early independence phase the radical Convention People's Party government led by Nkrumah continued to develop large-scale state investments in agriculture within a political ideology of African Socialism which was influenced by both elements of Soviet and Fabian Socialism. The cocoa sector continued to be dominated by smallholder production, with the state controlling marketing through a Cocoa Marketing Board which was established in the colonial period. Within the food sector the government carried out a policy of promoting agri-processing within a framework of import substitution industrialisation, in which state farms, Workers' Brigades and farmer co-operatives were promoted. Agricultural Extension was carried out through the United Ghana Farmers Co-operative Council. These state farms were experimental in nature, attempting to develop the modalities of application of large-scale mechanised technology and inputs to Ghanaians conditions, and building up the human resources to manage agricultural modernisation. These also drew upon Soviet and Chinese technical support and equipment. Although the greater part of the agricultural budget was allocated to the state sector, food production continued to be dominated by smallholder production (Konings 1986).

The 1966 coup against Nkrumah brought pro-Commonwealth and pro-US interests to the fore in Ghana. The agricultural sector was re-organised to support the development of private capitalist estate agriculture and the creation of a new extension service in tune with the US model based on the Land Grant system. An extension policy was launched which promoted the dominant diffusionist model of focusing on progressive farmers, whose uptake of new technology would result in downward dissemination. Following the 1972 coup agricultural policy reverted to a more mixed approach, combining state farms with the promotion of capitalist agriculture. The major focus of policy was on developing commercial rice farming in the north to meet growing urban demands for foodstuffs. Military personnel and close allies of the regime invested in large rice estates, gaining access to cheap loans and subsidised inputs. However, unreliable rainfall during the Sahelian drought of the 1970s, increasing price of inputs brought upon by the oil crisis, other logistical challenges, and a balance of payments problems ultimately resulted in the collapse of the commercial rice sector. A financial crisis escalated as banks were unable to recoup the large loans given to rice farmers (Shepherd and Onumah 1997).

By the mid 1970s the government redirected its agricultural policy away from nurturing a domestic class of capitalist farmers and towards a contract farmer model based on capturing peasant farmers, in line with recommendations of the World Bank. This was incorporated on irrigation projects producing rice and vegetables, and in nucleus estate outgrower models in the oil palm sector in the south (Amanor 2000; Daddieh 1994; Konings 1986). The basis of these contracts were to provide inputs, loans or land to farmers on the condition that they cultivated particular crops according to specific cultural recommendations and sold these crops to project parastatal marketing agencies.

These developments failed to save the regime from the mounting economic crisis and bankruptcy, which resulted in another coup that brought Jerry Rawlings to power. In 1982, after attempting to court support from Eastern European states that were themselves in the throes of crisis and transformation, the Provisional National Defence Council (PNDC) went to the IMF and accepted a structural adjustment programme, which has involved privatisation of SOEs and the introduction of a system of parliamentary democracy.

This has had considerable impact on the agricultural sector, including the removal of subsidies on inputs and agricultural services, and the privatisation of agricultural services. During the 1980s and 1990s Western donors reinforced this process of privatisation by supporting the activities of NGOs to fill in gaps in agricultural service provisioning. Although there was a rapid expansion of many local NGOs during the 1990s, by the end of the decade donors concentrated their funding on a few international NGOs which have tended to dominate agricultural development activities, including CARE International, Action Aid and Technoserve, alongside Church-based agricultural development networks such as ACDEP.

From the late 1990s Ghanaian Agricultural policy has been dominated by the following two concerns.

1) To ensure that agricultural policy documents reflect the concerns of poverty reduction and the Ghana Poverty Reduction Strategy, and that differentiated strategies are devised to meet the needs of different categories of farmers.
2) Commitment to the development of agribusiness through promoting increased productivity in the value chain and market governance of food chains.

The Food and Agricultural Sector Development Policy II (FASDEP II) declares:

> A value chain approach to agricultural development will be adopted with value addition and market access given more attention. Efforts will be intensified to build capacity towards meeting challenges of quality standards in the international market, with focus on increasing productivity along the value chain. While imports will not be controlled by quotas and tariffs, the use of standards to control imports of poor quality produce will be pursued. Attention will be given to improving standards in local markets and for food safety (Ministry of Food and Agriculture 2007).

FASDEP II promotes heterogeneous strategies to target differentiated farmers and the rural poor:

> The pursuit of a modernised agriculture in FASDEP II will target different categories of farmers according to their needs. Thus, risk-prone, largely subsistence farmers, will be targeted with interventions to reduce their vulnerability and help them improve (Ministry of Food and Agriculture 2007).

Beyond the rhetoric of pro-poor market approaches, the process of privatising agriculture has had an ambiguous impact on agrarian developments. While Western donors have insisted on privatisation from a neoliberal ideological perspective and have refused to fund state agricultural services, the private sector has been reluctant to invest comprehensively within the agricultural sector. Thus, the privatisation of the state seed sector has found no private sector buyers, resulting in a significant decline in modern seed production in Ghana. The former seed producers within the state system now operate as private sector seed growers, but continue to rely on the state to provide them with contracts. The seed growers continue to produce the same varieties that were introduced during the 1990s and have been reluctant to take up production of recently introduced hybrid varieties. The problems of seed production were papered over by contracting out seed production to the NGO sector during the 1990s, when Global 2000 became responsible for distributing seeds and inputs to farmers at concessionary prices through using the public extension services. Attempts to distribute input packages at market prices by Global 2000 resulted in the collapse of the programme as a result of mounting farmer default on loans (Amanor 2010). Similarly, Ghana's irrigation projects lie largely idle – with the exception of those rehabilitated by China – as a result of donors' reluctance to invest in state controlled assets.

As a consequence, agricultural development has been uneven, with the private sector cherry-picking the most profitable sectors and donors pumping funds into the most promising commercial export sectors. During the 1990s food crop production became neglected as most funds went into the development of new horticultural crops for the export trade. Meanwhile, multinational companies moved into the oil palm sector. The cocoa processing sector has been characterised by such a concentration, and is dominated by three companies: Cargill, ADM and Barry Callebaut, who between them control over 80 percent of cocoa processing in the world. There is a pronounced tendency for Western multinationals to move out of farm production and into control of the food value chain through market governance and control of marketing and processing channels. Unilever has sold off its oil palm plantation to Wilmar of Singapore, the largest Asian processor of palm oil. A *Financial Times* article records the Chairman of Wilmar, Kuok Khoon Hong as saying 'I'm prepared to invest hundreds of millions of dollars in Africa. The time for the continent has come'[iii]. The article further states 'Mr Kuok said Chinese demand for commodities from Africa, favourable commodity prices and a shortage of land in Indonesia and Malaysia for oil palm plantations would drive Wilmar's expansion in Africa'[iv].

Frequently agribusiness companies prefer to work in coalitions of partners, providing various services to farmers and controlling production through food chain governance, standards control, tracking of farm production and contracts with various intermediaries and farmers. NGOs play a significant role in these coalitions, in recruiting farmers into agribusiness chains and providing them with training to produce commodities according to preset standards (Amanor 2010). These food chain networks are also lucrative to input suppliers, who are guaranteed demand for their products. The leading fertiliser distributor in Ghana, Wienco, which controls over 40 percent of fertiliser imports, has set up YARA, a farmers' organisation that contracts its members to produce crops for agribusiness using new varieties of seeds and inputs, including Wienco fertilisers, and a Mango outgrower scheme, which again ensures markets for its inputs.

The Gates Foundation funded organisation, AGRA, has also been instrumental in promoting the development of agricultural input markets. As donor funding for NGOs has shrunk in the agricultural sector, many of them are now soliciting funds from the private sector to recruit farmers to participate in agribusiness chains. USAID supports a large network of international NGOs providing business services to farmers and recruiting them into food value chain production through the establishment of premium prices, entry barriers, standards control and contractual relations. The Millennium Development Authority,which implements the US$547 million US Millenium Challenge Compact, has also contributed to building up infrastructures that support the commercial development of food crop production.This aims to reduce poverty in the Northern Region, the Afram Plains and the new horticultural district of the Central Region by promoting private-sector led agribusiness development through promoting commercial agriculture and the development of transport infrastructure and rural services, including provision of electrification, water and rural financial services.

During the late 1990s and early 2000s these developments were most significant within the horticultural sector. Since the 2006-8 world food crisis, which resulted in the significant rise in price of staples, there has been a renewed interest in commercial production of staples for domestic and international markets. In particular, rice has been identified as a commodity with much potential for increased production within Ghana by both government and donors. Most investors prefer to work in partnerships where specific companies specialise in parts of the production process, as a way of minimising risk and leading to better food chain control. Also, many companies prefer to work with smallholder contract farmers rather than establish large estates, since land tenure security is considered a major problem in Ghana given the large number of land disputes, and since large-scale land acquisitions attract unfavourable or unwanted international attention.

The policy environment in Ghana today is therefore one that favours agribusiness and international investments, but one in which agribusiness developments have been patchy and hesitant given the lack of development of more comprehensive transport and research infrastructures and difficulties of acquiring large tracts of land. It is into this context that new investments from China and Brazil enter.

Chinese investments in the agricultural sector

Chinese investments in Ghanaian agriculture have been limited but significant. The most significant investments have been in irrigation plants at Afefe and Nobewam. The Afefe Project (or Whita project as it has come to be recently renamed following a dispute over the rightful land ownership between the chiefs of Whita and Afefie), occupies an area of 880 acres. It is currently the largest irrigated rice growing project in Ghana. While the Afefe irrigation infrastructure originated from the 1960s and the 1980s, when it was overhauled and rehabilitated by Chinese technicians, it is presently undergoing further expansion under a Chinese project. Chinese technical cooperation is also looking for other areas in the Volta Region in which to expand irrigation works.

China has considerable skills in rice cultivation and hybrid rice seed production – including cutting edge research which has sequenced the rice genome.The main development interventions within Ghana at present focus on the enhancement and expansion of irrigation facilities, and the provision of technical advice to the Ministry of Food and Agriculture (MOFA) on appropriate cultivation methods. The projects are carried out in collaboration with MOFA, which becomes responsible for management and extension once the infrastructure is completed. The Chinese government provides technical support to these projects rather than investment in commercial rice production.

A second area of recent investment is in input supplies with Chinese companies providing both fertilisers and agrochemicals. The waste disposal company, Zoom Lion, which is owned by both Ghanaian and Chinese interests, has recently established a fertiliser plant at Amasaman on the outskirts of Accra. The fertilisers will be a product of the waste in the dump sites, and is being developed as a means of recycling to offload the large quantities of waste on the main dump sites while providing a useful commodity. The 'ShevaineXinam' Chemical Industry Group (Zhejiang Xin'an Chemical Industrial Group), a national hi-tech company which produces agrochemicals, organic silicon and fine chemicals, has established a subsidiary agrochemical branch in Kumasi in May 2012[v]. The production of fertilisers within Ghana is likely to become more important as the oil industry establishes itself. Currently, China and India are competing for oil contracts with promises of developing fertiliser plants as by-products.

China does not yet have significant agribusiness companies operating in the agricultural sector; however, there are a number of small Chinese farmers operating within the country. These are producing vegetables and cowpeas for the domestic market, and one farmer has invested in Jatropha. Some of these farmers are also involved in distributing Chinese agricultural machinery. For example, one such farmer imports Chinese machinery (and also tractors from the Belarus), which he considers to be highly robust.

The main Chinese initiatives in agriculture grow out of larger commitments to infrastructure developments, and so the project documents are often combined with others (e.g. transport infrastructure and energy). The second significant area for projects is input supply. These occur alongside other related interests outside of the agricultural sector, such as within the framework of the development of petrochemical industries and waste disposal. These projects also often combine high tech elements with appropriate technology that creates affordable technologies for farmers, as in gravitational irrigation or fertilisers processed from urban waste.

The main Chinese investments in the agricultural sector are the provision of infrastructure and technical services. These mirror other interventions in the broader economy that focus on the provision of basic transport, construction and communication infrastructures. Thus Chinese technicians gain experiences and insights into Ghanaian agriculture and are able to influence subsequent developments, and Chinese companies derive revenues form infrastructure provisioning. In contrast with other nations' provision of aid, China does not seek to gain influence over food markets through market governance (i.e. by the imposition of standards and control over production linked to specific forms of market integration) and a value chain approach, or establish a niche for Chinese agricultural and agri-food companies. A second area of growing investments is in agrochemicals and inputs, which may be related to interests in Ghana's new petroleum resources.Thus, claims that China is investing in large-scale agriculture leading to the appropriation of smallholders' lands are unwarranted in the Ghanaian case.

Brazilian investments in the agricultural sector

In contrast with Chinese agricultural investments those of Brazil are more focused, and reflective of the emergence of Brazil as a global agribusiness power. These investments are articulated in a framework of extending the successes of Brazilian agriculture into Africa. However, there is no unitary framework of the Brazilian success story, but rather a contested one that attempts to balance two different facets of Brazilian agriculture: agribusiness based on large-scale plantations and multinational investments, and the development of smallholder agriculture linked into agribusiness networks (McCann 2008).

Within Brazil agriculture has developed along distinctive paradigms in different regions of the country. The south is characterised by farmer cooperatives and diverse agribusiness operations in which irrigated rice production and cattle are the most significant sectors. The west and centre of Brazil are characterised by large corporate holdings. The Northeast is characterised by poor smallholders but is being transformed through EMBRAPA support for biofuels and domestic food. The *Cerrado* has been transformed into an area of commercial food production by EMBRAPA technologies based on low tillage and soil transformation with phosphates and lime. While colonisation of the *Cerrado* was initially envisaged to be a smallholder undertaking, the area has become dominated by large holdings and agribusiness. In North Amazonia, cattle herding, soy beans and forestry predominate.

Two distinct models of agricultural development predominate at the national level. The first is based on a vision of a dynamic smallholder section mobilised to articulate their demands through strong social movements. Social movements such as MST have been important in mobilising rural support for the Workers Party (PT) in Brazil. MST have mobilised the peasantry for land occupations, access to technology and opposition to genetically modified (GM) technologies. However, the PT also has strong links with agribusiness, reflected in both the granting of concessions for multinational seed corporations such as Monsanto and Syngenta to produce GM seeds and develop GM research facilities within Brazil, and also in the production of GM seeds and other agribusiness technologies by EMBRAPA (McCann 2008). Brazil has also nurtured its own Brazilian multinational companies, protected them from takeover by global firms, and is encouraging them to extend into global markets. The successes of EMBRAPA technologies have been important for the development of an autonomous Brazilian agribusiness.

The institutional framework of Brazilian agricultural cooperation in Ghana grows out of the framework of agrarian development in Brazil (Cabral et al 2013; Patriota and Pierri 2013). Thus initiatives that target the smallholder sector come under the Ministry of Agricultural Development (MDA), while agribusiness research initiatives come under EMBRAPA. Public sector initiatives are only given for activities that are requested by the host government. Beyond this are private sector programmes, which may make use of loans provided by Brazilian banks.

The major intergovernmental programme initiated in Ghana is the More Food Programme which is a social and economic development programme in Brazil aimed at enhancing smallholder family farms (Amanor 2013; Patriota and Pierri 2013;Cabral et. al. 2013). In Ghana this has resulted in the Livelihood Empowerment Against Poverty (LEAP) Programme and the introduction of school feeding programmes. LEAP makes provisions for farmers to gain access to tractors, and creates facilities within Ghana for the servicing of these tractors by a loan of US$98 million from the Brazilian government. The second phase will include the provision of post-harvest equipment and dairy feed. It is envisaged that these tractors will be suitable for farms with holdings of between 20-60 hectares which, in the Ghanaian context, represent reasonably wealthy farmers. An alternative is distribution to farmer associations, but these are poorly developed among smallholders.

Disbursement of tractors is not new in Ghana; indeed during the 1970s it was one of the ways in which development resources were used to build political constitutions of elite farmers. In recent years, however, farmers have increasingly moved to the use of herbicides in clearing land due to the rising cost of fuel and lack of affordable tractors. The use of herbicides is also promoted by EMBRAPA within its programme of low carbon farming based on low-till technologies. This is a scaled back version of the Pro-Savannah programme, which is being promoted by EMBRAPA in Mozambique based on technologies introduced into the *Cerrado* region of Brazil (Chichava et. al. 2013). As yet, however, there is no uptake of low carbon farming in Ghana. While the More Food Programme's claims to target smallholder agriculture may be questioned in the Ghanaian context, it serves to create demands for Brazilian technology, provided they withstand the environmental conditions of Ghana – a problem to which many other makes of tractors have succumbed. While this programme is only in its preliminary phase, it will provide a fascinating test case of how Brazilian social protection programmes with underlying market interests transfer into the African environment. Although in Brazil this establishes synergies between raising smallholder farm production, creating markets for smallholder farm production in school feeding programmes, and creating demands for agricultural technology industries (Patriota and Pierri 2013), it is not clear how the linkages between social protection and agricultural production will be managed within the Ghanaian system, given the differing institutional setups between the two countries. The third linkage in the development synergy is also different since the industrial beneficiary of increased productivity will be Brazilian agricultural machinery companies and not Ghanaian companies. Within the Brazilian context, civil society organisations and social movements have been important in articulating the demands of smallholders in policy. By contrast, in Ghana farmer social movements are weak, and many of the dominant NGOs are international agencies that now work within an agribusiness value chain framework in which poverty alleviation is framed in the context of integration into commercial agribusiness markets and export markets. Although the More Food Programme works within a value chain framework, this focuses on local food production and school feeding programmes rather than integration into commercial and export markets. Finally, in terms of the framework of South-South cooperation, the More Food Programme comes close to introducing conditionalities, since it is embedded within a framework of social inclusion, and participation within this programme is related to prior commitments to introducing particular forms of social protection based on Brazilian models.

EMBRAPA has the mandate to develop joint technical cooperation between research institutions. In Africa it combines this mandate of building technical capacities and fostering new research with a commitment to social inclusion, poverty reduction, and promoting family farming and sustainable agriculture. Since 2010 EMBRAPA has supported the development of joint collaborative research partnerships between researchers in Brazil and in African countries in both universities and in state research institutes. The main forum for building the modalities of research is the Africa-Brazil Technical Innovation Market, which facilitates joint meetings of Brazilian and African researchers, creates networks through which researchers in specific research institutions can build up linkages to fashion joint research proposals, and puts out a call for joint research proposals by African and Brazilian researchers.

To date, two research proposals have been sponsored between Ghanaian and Brazilian researchers. The first is concerned with devising suitable *Rhizobium* inoculants to enhance smallholder production of cowpeas, and the second with conserving and domesticating indigenous mushrooms. This type of research collaboration enables EMBRAPA to expand its research repertoire, to gain access to new genetic materials, to lay the foundations for the expansion of Brazilian agribusiness into Africa, and create demand for Brazilian technology and information services. They also expand the research capacities in Ghana, while building up familiarities with Brazilian approaches and capacities.

The third significant area of technical cooperation involves the recent expansion of corporate Brazilian agribusiness into agricultural production and processing in Ghana. In 2007 the Brazilian government announced plans to grant a loan of US$260 million to Northern Sugar Resources (NSR), a Ghana registered company, for a sugar cane plantation and ethanol processing plant in Northern Ghana, through the Brazilian Development Bank (BNDES). The project requires a total investment of US$306 million and the ethanol plant will be built by Constran S/A of Brazil. The ethanol is designated for export to Sweden, and SvenskEtanolkemi AB, a Swedish green fuels company, has committed itself to purchase the first ten years of the plant's production (Bizzard 2008; Razanamandranto 2008). It is estimated that one year after production commences, ethanol will emerge as Ghana's fourth largest export commodity. However, there have been considerable delays in implementing this programme, which are partly related to problems in land tenure transparency and conflicts over lands between rival chiefs.

This development takes place in the context of controversies over Brazilian imports of ethanol into the EU, in which biofuel producing countries seek to limit Brazilian imports of ethanol into the EU, whilste EU ethanol-importing countries are interested in seeing lower tariffs for imported Brazilian ethanol (Bizzard 2008). Sweden has major interests in cheaper Brazilian ethanol since it consumes 800 million litres of ethanol per year. However, European farmers receive €1.48 billion in agrofuel subsidies, while the agrofuel processing industries received €3.36 billion in subsidies from the

European Union (Bizzard 2008). These interest groups are intent upon keeping Brazilian imports out of the EU. One method of bypassing the impasse on European tariffs on Brazilian ethanol imports has been to set up joint bilateral projects for ethanol production in an African country, which is more likely to gain preferential access to EU markets. The Brazilian companies provide the technology, and the European investors provide the funding for locating ethanol production in African countries and guaranteed markets and contracts for the product (Bizzard 2008). This has led to accusations that the development of Brazilian ethanol plants in Africa leads to land grabbing and to environmental destruction.

The political economy of commercial investments

Beyond the rhetoric of 'land grabbing' or 'South-South solidarity' lies a complex political economy. Examining alternative strategies pursued by multinational corporations highlights this. For instance, Cargill, which has moved into cocoa processing and confectionary interests, now has major interest in sugar in Ghana, and is now sponsoring the development of a US$100 million sugar processing plant in Ghana's Tema Free Zone. This factory will not use local sugar cane to produce sugar but import sugar in syrup form. This is because, according to Cargill, 'It was not economically viable to venture into sugar-cane plantations locally, despite the country's favourable weather conditions'[vi].

Although the creation of agri-processing linkages in Ghana may displace some farmers, global agribusiness strategies of moving resources around the world to achieve the maximisation of profit may continue to compound the marginalisation of Ghanaian farmers and prevent backward linkages of agri-processing into the agricultural sector to be created for the emergence of a dynamic agricultural economy. The difficulty of access to the European Union for Brazilian ethanol mirrors the problems that Brazil faces in North American markets – that is an unequal playing field, in which subsidies keep Brazilian products out while Brazil is subject to mounting pressures to open up its agriculture further to free market forces. This has led Brazil to articulate South-South cooperation in a particular form, in support of domestic Brazilian capital. This articulation has resonated with many African nations who have supported the Brazilian stance on subsidies and intellectual property rights in UN bodies and other international forums. However, the solutions created by Brazil (bilateral deals with European powers to finance expansion of ethanol production in Africa), goes well beyond any notion of South-South cooperation into strategic alliances with fractions of European capital to further processes of global capital accumulation on African soil (Bizzard 2008).

Cabral (2010) estimates that one fifth of Brazilian technical cooperation projects involve trilateral arrangements involving a northern donor. These interests are not necessarily inimical to the development of African agriculture of course. Nevertheless, they need to be debated within a framework that acknowledges the benefits that strategic alliances with Brazilian agribusiness can bring to Africa countries in their participation in a global agribusiness economy.

Accusation that Brazilian agribusiness is engaging in environmentally destructive activities that displace African farmers is not free of ulterior motives, especially when the same critics fail to subject the discourses of Western transnational corporations or EU agricultural policy to the same level of critical analysis as they do to the policies of emerging powers. This is particularly the case when such international NGOs work uncritically to develop corporate responsibility programmes and food value chain development in Africa for Western multinational companies with large plantations in other parts of the world.

Paradoxically (and adding complexity to the political economy of South-South relations) while the Brazilian Development Bank has financed the Northern Sugar project, EMBRAPA, which has considerable experience in developing and innovating ethanol production technologies and creating new varieties of sugar cane suitable for ethanol, is not involved in ethanol research in Ghana – although it does provide knowledge and technical support to the NSR (Razanamandranto 2008) - since the Ghanaian government currently expresses little interest in ethanol due to the recent exploration of petroleum. Thus, assumptions of a mutuality of interests defining South-South relations must be critically examined in the context of the expansion of capitalist accumulation within emerging powers.

Rice and the complex international politics of aid and investment

Another significant area in which Brazilian companies are making inputs into the Ghanaian agricultural economy occurs in rice. Several donors are interested in supporting enhanced rice production for the domestic market, and some private initiatives have developed. In the Volta Region the Global Agri-Development Company (GADCO) has initiated a rice production scheme, which works with smallholder contract farmers to produce the much-desired perfumed rice for the Ghanaian market. GADCO is an agri-food company which operates in West Africa but is registered in Amsterdam. Its founders are IggyBassi and TaksAbimbala and its Chairman is Lord Malloch Brown, former Administrator of the UNDP and also a former Labour Minister (under Gordon Brown) at the Foreign and Commonwealth Office responsible for Africa, Asia and the United Nations. It has established a nucleus plantation of 1100 hectares at Fievie (near Sogakope) in the Volta Region, which makes it the largest rice producer in West Africa. At present it is working out a strategy to incorporate smallholders (Diakité et. al. 2012).

GADCO seeks to enhance its market efficiency by working with a number of specialised service providers who occupy various niches in the production, processing and marketing spheres. This includes Finetrade, who will be responsible for marketing the rice, Syngenta for agronomy, YARA for fertilisers, and Agropecuária Foletto, a Brazilian rice agribusiness company, for producing technical management, access to Brazilian technology and technology maintenance within the project ('the Brazilian African corridor for technology and management transfer'). The Forum for Agricultural Research in Africa (FARA) and the Gates Foundation are also sponsors of the programme. However, the most significant funding for the project has come from Germany, through the KfW Development Bank, which has supported the purchase of an advanced rice mill and further integration of smallholders into the project[vii]. The KfW is committed to supporting food value chains approaches in Africa with the integration of outgrowers. Again, this programme is an example of a complex integration of global partners seeking to work out a viable strategy for food chain governance, in which Brazilian technology and management come to the fore in the production process, rather than any simple framework of South-South Cooperation.

Conclusion

China and Brazil are both characterised as 'emerging' or 'rising' powers. They have both embraced the concept of South-South Cooperation as informing their movement into the development sphere in Africa. However, the rapid economic growth within these countries, the extent of their investments within Africa, and the complexity of linkages into the global framework of agribusiness suggests that the modest and simplistic framework of South-South cooperation and development as a 'new paradigm' throws little light on the nature of their investments in Africa, and may actually mask the current position in the global economy of these emergent powers.

China has rapidly emerged as the largest trading and investment partner in Africa. The structure of its trade reflects the emergence of a highly sophisticated manufacturing economy which largely imports raw materials, energy and primary agricultural commodities, and exports manufactured goods, machinery, information and communication technologies, and construction. Trade with many African nations, as in the Ghanaian case, is highly skewed, with the African nations suffering large deficits in trade balance. In recent years Chinese investments within African countries have expanded rapidly, enabling African nation states to begin to develop the beginnings of a modern infrastructure that should attract more investments. China is bold in its transactions, willing to undertake large investments, but also creating projects that aim to enable these investments to be rapidly recovered and repaid. The scale of these ventures put the lack of OECD aid investments during the 1990s and early 2000s to shame, where the excuse for not investing was the lack of infrastructure developed by government, the lack of good governance, and the risk of investment.

Chinese investments within Ghana are largely concerned with developing infrastructure but also in gaining access to the country's new oil resources. The huge expansion of investment in the last five years is underwritten by these oil resources and their potential to accumulate capital. Although the agricultural sector has been identified as a priority area for Chinese development cooperation, there have been few agricultural projects within Ghana. These are largely concerned with expanding infrastructure, particularly irrigation infrastructure and inputs, but also provide important technical support to government agricultural services, without attempting to control capital accumulation and management within agriculture. These interventions have had a telling effect on the agricultural economy, and have stimulated interest in investments in modernising rice cultivation. The economic interests of China in infrastructure provision thus enables it to provide a wide range of infrastructural support services that are critical to the subsequent development of agriculture, without seeing these service provisions as unwanted costs that should be born by the government, and without engaging in the asset stripping of government services. This enables the rapid development of an agrarian infrastructure, which has been a major impasse in the 1990s and early 2000s as Western donors have demanded conditionalities, and demanded investments in agricultural infrastructure as a prior condition for attracting global agribusiness. The rehabilitation of irrigation by Chinese technicians has also introduced appropriate techniques that are sustainable and affordable for smallholder farmers. The Chinese-constructed irrigation facilities are handed over to the Ministry of Food and Agriculture and continue to be productive.

Although China has made a huge impact on the Ghanaian economy, this is not accompanied by any vision or debate on the nature of transformation of the African economy and Africa-China relations in the near future. Debates with policymakers often occur behind closed doors and there is little attempt to facilitate dialogue between African and Chinese intellectuals and civil society on these changes (Guttal 2008). This contrasts with the 1960s and 1970s when many African intellectuals of a socialist inclination were inspired and mobilised by the example of China as a paragon of equality and self-reliance, as providing an alternative paradigm to the US model of international development. The current lack of open debate between Chinese and Ghanaian intellectuals results in a level of mistrust of Chinese intentions among Ghanaian public and civil society organisations that are highly questioning of the motives of its politicians and political parties, and their use of development resources.

In contrast with China, Brazil's impact on overall external trade in Ghana is modest. Trade is largely limited to a narrow range of agricultural commodities and raw materials. Although Brazil has a vibrant manufacturing sector, its expansion into African markets is constrained by the competitiveness of Chinese, Indian, Turkish, and Korean manufactures. Brazilian investments within the Ghanaian economy are highly focused on building vertical linkages between agriculture and agri-processing, and building agribusiness capacities within Africa to create a niche for Brazilian technology transfer and management services and knowledge. Indeed, Brazilian development banks are willing to provide loans to African governments and companies to create spaces for Brazilian technology and management services. These initiatives belie the simple framework of South-South cooperation. In several instances these initiatives involve complex financial relations with fractions of European capital. This occurs in the context of fierce competition between Brazilian and US agribusiness, and US government policies of protecting its agribusiness against Brazil through use of tariffs and subsidies, while attempting to pressurise Brazil into opening its domestic markets to US companies. The movement of Brazilian agribusiness into Africa constitutes an attempt to open up new markets outside of the Americas and also to gain access to European markets by building up agribusiness capacity within Africa. These initiatives are being supported by Swedish, Dutch and German financial investments in Brazilian agribusiness, for example. In contrast with Chinese interventions within the agricultural sector, Brazilian investments more closely follow the agribusiness model of promoting private sector investments and linkages between smallholders and agribusiness companies within a value chain framework. Chinese interventions do not promote private sector agribusiness but focus on building relations with the agricultural ministry to enhance technologies for smallholder farmers.

In contrast with the dominant western neoliberal model of integration into agribusiness markets, the Brazilian approach combines the internationalisation of large-scale Brazilian agribusiness interests with policies based on social inclusion for smallholders. This does not assume that integration of smallholders into agribusiness markets will bring about a transformation of rural poverty. It develops an alternative framework of social protection alongside agribusiness expansion, which seeks to build another set of linkages for smallholders based on developing connections between new technologies for smallholders, markets for foodstuffs linked into school feeding programmes and family allowances for children to attend school, as embodied in the African More Food programme. Since this framework is also been taken up by western donors and multilateral agencies, it is questionable whether this comprises an alternative policy framework of South-South cooperation or the evolution of dominant policy narratives from the Washington to post-Washington consensus, and now into a framework of market citizenship (Jayasuriya 2006).

The expansion of Brazilian agribusiness into Africa is not necessarily inimical for Ghanaian agriculture, particularly if it stimulates vertical linkages between agriculture, agri-processing and agribusiness, and encourages domestic production. However, these developments may also lead to new international constellations of external agribusiness domination within Africa. While Brazil can bring much needed knowledge of agricultural transformation to Africa, technical cooperation is also accompanied by capital investment. It is the nature of this investment in Brazilian technology within Africa which is likely to determine the subsequent course of transformation within the agrarian economy, and which will ultimately shape the discourse about South-South cooperation. Thus, there is a need to open up a debate within Africa of the future of agribusiness and the relations between different types of capital and actors in this process, and the relationships between these sectors and different categories of farmers in bringing about future transformations.

These new developments are complex and open up new potentials within the Ghanaian economy. However, the rise of new financial investments in Africa requires that Ghanaian policymakers develop a more discerning approach to agribusiness and its impact on various strands of the agrarian economy, and on vertical linkages, rather than a broad uncritical affirmation of government support to agribusiness developments. This requires a vision of what various types of technical and development cooperation can contribute towards the Ghanaian agrarian economy, what Ghana can contribute towards shaping the framework of South-South cooperation, a comprehensive political economy of geopolitical developments within agribusiness and technical cooperation, and an analysis of the types of strategic alliances that will facilitate and advance the interests of the rural people and the agricultural sector.

End Notes

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This **Working Paper** was written by **Kojo Sebastian Amanor** for the **Future Agricultures Consortium**. The series editors are **Amy Thompson, Rachel Whitfield** and **Beatrice Ouma**. Further information about this series of Working Papers at: **www. future-agricultures.org**

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FAC appreciates the support of the UK Economic and Social Research Council and UK Department for International Development (DfID)

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