Future Agricultures

CAADP Policy Brief

Can China and Brazil help Africa feed itself?

Africa can learn important lessons from the development successes and challenges of other Southern Nations. South-South partnerships on common challenges such as agriculture, adaptation to climate change, water and health can lead to huge strides forward in reducing poverty and sustainable development. Growth in the agricultural sector in many Asian and Latin American countries, including China and Brazil, has prompted growth in other sectors and helped reduce poverty. As these examples show, there is no one route for countries to move from an agricultural to an industrialised and higher income economy. Understanding the different routes and appreciating the drawbacks, as well as the opportunities, can help African nations grow their way out of poverty.

– CAADP: 'Building South-South Linkages'[i]

The questions of how Africa can feed itself, and how the agricultural sector can be a more effective engine for growth and development, have long been targets of national governments. Western donors have increased assistance following the 2007/8 food price crisis. But the emergence of China and Brazil as major players has raised hopes that innovative agricultural models from the 'rising powers' can be transferred or adapted to African countries.

This policy brief draws on latest research findings by Future Agricultures,[ii] focusing on engagement in four African countries, and asks:

- What are the realities of the different routes and models in China and Brazil's agricultural development?
- How are China and Brazil engaging with Africa in agricultural development?
- How should Africa approach these new engagements - with open arms or cautiously, looking at likely winners and losers?

China in African agriculture[iii]

China has been engaged in economic development in Africa since the 1960s through infrastructure, placement of experts and agricultural development programmes (and much earlier through trade and politics). New engagements also stem from China's increasing demand for natural resources to fuel its growing economy – designated as 'resource diplomacy'.[iv]

Bilateral trade between China and Africa has grown substantially since the 1990s to almost US$200bn in 2012. This comes from Chinese entrepreneurs in Africa and African traders in China, and substantial investments by quasi-private companies, heavily supported by the Chinese state. Many investors are interested in agriculture – including agri-processing, large-scale and small-scale production. Major infrastructure investments in Africa have been facilitated through the China Development Bank in the form of commercial loans.

Concessional loans through the Chinese Export-Import Bank (Exim) provide important finance to Africa with relatively few strings attached.[v] While there are fears that such loans will create a new phase of indebtedness in Africa, African policy-makers argue that, if used strategically, they can provide essential finance for recovery and growth.

China does not talk of development 'aid', but the Ministry of Foreign Affairs provides direct government-to-government resources, including for agricultural development.[vi] Aid packages generally do not come with obvious conditions, but some degree of reciprocity is expected: aid, trade and investment are intertwined in these new relationships.

A high-profile development cooperation agreement has established 15 Agricultural Technology Demonstration Centres (ATDCs) in Africa, with 10 more planned. The centres profile Chinese technology through partnerships with African governments – building new research and demonstration centres and providing staff and finance for 3 years. They are run by quasi-private companies on behalf of the Chinese state, with intensive training activities and research and demonstration of Chinese technologies.

Agricultural experts provide intensive training and demonstration of Chinese technologies

How is Chinese engagement with African agriculture presented?

Chinese commentators stress the importance of agriculture in China's economic transformation. China feeding 20 percent of the world's population on 10 percent of the world's arable land is an often-repeated figure. The argument is that this has been possible through a particular Chinese path of agrarian change, based on intensification of small-scale farms using labour and appropriate technologies over centuries. These experiences are presented as a base for sharing and learning between China and Africa as African agriculture seeks to intensify and commercialise.

The Chinese experience of large-scale farming – the consolidation of clusters of small-scale farms in northern China and the creation of massive mechanised grain-producing farms – is presented as another model. This is despite the social, economic and ecological challenges faced by such operations in China. Some of the quasi-private companies running the ATDCs in Africa[vii] are geared more towards large-scale farming operations than the small-scale farm enterprises of the smallholder success story.

Brazil in African agriculture

The place of smallholders and large-scale farms in Brazil's development and in its visions of African agriculture is also a subject of debate. Brazil, a world leader in agricultural commodity trade – including beef, poultry, ethanol and soybean – is seen an agricultural development success story, with strong state support, high levels of mechanisation and strong vertical integration of industry and exports.

The 'transformation' of the *Cerrado* from a backward savanna area to highly-mechanised soybean and maize production is presented as a model for African development. Yet there are other narratives from the *Cerrado*: family farms producing the bulk of Brazil's basic foodstuffs (87 percent of cassava and 70 percent of beans); farmers made landless and minority communities struggling for land rights; agro-ecological alternatives to transgenic crops (GMOs); and environmental groups challenging the advance of the agricultural frontier into the rainforests of Amazonia.

How is Brazil engaging with African agriculture?

Brazilian involvement in African agriculture is expanding rapidly beyond technical support and trade with Lusophone countries to large-scale agribusiness investments, promotion of low-carbon agricultural technologies, support for smallholder production with subsidised technologies, and food production programmes linked to school feeding programmes.

So far the **agribusiness development model** has dominated, with transfer of research and technology for high-value export crops – such as soybean in Mozambique – linked to global value chains. This model is supported by the Ministry of Agriculture, Livestock and Supply, and Embrapa, the Brazilian Agricultural Research Corporation. Technical cooperation and business interests are closely connected, particularly in the Nacala corridor in northern Mozambique, where the technical cooperation programme ProSavana is paving the way for private investments in agribusiness by Brazilian and Japanese companies [see Box].

A **family farming** model is promoted by the Ministry of Agrarian Development (MDA) – the ministry responsible for overseeing land reform settlements (often in opposition to the agribusiness lobby). The More Food Africa (now, International) programme is MDA's largest cooperation initiative in Africa. Countries can obtain technical guidance from Brazilian specialists and import Brazilian equipment. The aim is to increase productivity and food security by improving small farmers' access to machinery. Ghana and Zimbabwe were the first countries to join the programme.

Brazil is pushing its family farming and food security model at international fora – presenting itself as a Southern alternative – but in cooperation programmes this model is running up against strong agribusiness interests. The Brazilian idea of small-scale family farming differs quite radically from that found in African countries, yet its focus is undoubtedly different to large-scale commercial operations. Brazilian politicians argue that both are central to the Brazilian way of doing agriculture, and Africa can benefit from both.

Brazil's social movements and civil society organisations associated with agrarian reform and ecological agriculture continue to challenge development models at home and may help shape Brazilian-African cooperation. Linkages have already been formed with peasant farmers in Mozambique and South Africa to exchange traditional seed management practices.

Mozambique [viii]

China in Mozambique

China's political and economic relations with Mozambique stretch back to pre-Independence. Trade and investment has grown rapidly over the past decade, with China being one of the top ten investors in Mozambique. Mozambique has concessional loans of over US$100m from the China Exim Bank to rehabilitate and develop agricultural infrastructure in key regions. These loans and commercial investments are complemented by development cooperation and investment projects.

China has established an Agricultural Technology Demonstration Centre at IIAM's Umbeluzi agricultural station. The centre is managed by Hubei Lainfeng Agricultural Development Corporation, a Chinese state-owned enterprise encouraged by the 'Going Out' policy – a driving force of Chinese integration into the global economy for the past decade.

The Xai-Xai irrigation scheme in Gaza province, one of the largest in the region, was abandoned for many years but rehabilitation of Massingir dam has raised hopes of revival. A programme to develop 300ha was run by Hubei Lianfeng Mozambique Co. (a subsidiary of the company running the ATDC). In parallel, a group of Chinese scientists from the Chinese Academy of Agricultural Sciences successfully tested 30 Chinese rice varieties and 1 Mozambican variety ('Limpopo' rice). However, technology transfer failed – in part because farmers were unable to pay for training services. Wanbao Grain and Oil Investment Ltd. have now been granted 20,000ha and are bringing considerable resources to produce rice and establish agro-processing facilities.

Perceptions of China's engagements in agricultural development in Mozambique are divided. Mozambican government officials and elites are enthusiastic about Chinese investments and technical assistance: China is seen as holding the answer to perceived technology

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African policy-makers need to examine the impact of South-South cooperation on different groups in agriculture

gaps in Mozambique's agriculture. Some farmers are more circumspect: 'we learned some things but in the end it all goes to waste because we don't have the means to implement what we learned'.[ix]

Brazil in Mozambique

Mozambique holds a prominent position in Africa-Brazil relations and is the top beneficiary of Brazilian technical cooperation in Africa. Agriculture, along with education and health, is the main focus. Mozambique has the largest numbers of researchers from Embrapa on the continent, hosted by the Mozambican Institute for Agrarian Research (IIAM) under the Ministry of Agriculture (MINAG). Mozambique is also an increasingly important destination for Brazilian private capital (mainly in mining and construction).

New patterns are emerging in Brazil-Mozambique agricultural cooperation, compared to those with traditional donors:

- Greater diversity of Brazilian institutions, each with their own objectives and visions: government agencies including Embrapa, Ministry of Agrarian Development, Ministry of Social Development and General Secretariat of the Presidency; and social movements such as the Popular Peasant Movement and Peasant Women's Movement.

- A shift towards longer-term programmes and systematic capacity building: exemplified by ProSavana – the subject of much attention and controversy.

- Transfer to Africa of Brazilian 'successes': ProSavana, More Food Africa and the Food Acquisition Programme.

- Triangular cooperation with Brazil providing technical cooperation and financial support coming from traditional donors: Japanese Development Cooperation (JICA), US Agency for International Development (USAID) and soon WFP and FAO under the Food Acquisition Programme.
- Private interests and capital linked with development cooperation initiatives: such as More Food International and the Nacala Fund, which seeks to mobilise Brazilian and Japanese capital into Nacala.

ProSavana Mozambique

ProSavana is one of the most ambitious initiatives in Brazil-Africa development cooperation – expected to cover 14 million hectares along the Nacala corridor in northern Mozambique, transforming it into a highly productive region addressing food security issues. It is inspired by the development experience of the Brazilian tropical savannah, the *Cerrado*, which was supported by a 30-year cooperation programme between Japan and Brazil. ProSavana is being implemented through a 3-way Mozambique-Brazil-Japan partnership.

ProSavana supports both large-scale and smallholder agriculture production systems, drawing on experiences and technologies from Brazil and Japan. The programme involves research, focusing on strengthening IIAM; training and extension, with pilot production projects for small and commercial growers; and an integrated agro-industrial master plan, including infrastructure and markets.

Although ProSavana, the technical cooperation programme, itself does not include private investments, its master plan component is laying the groundwork for Brazilian and Japanese investment in agriculture in the region. The Nacala Fund, launched in 2012, is expected to attract US$2bn in private capital from Brazil and Japan to support large scale production led by Brazilian farmers working with Mozambican farmers. The Fund for ProSavana's Development Initiative between Mozambique and Japan supports different pilot models for integrating smallholder farmers into value chains. Companies are offered reduced interest rates and have to commit to engage smallholders through contract farming.

ProSavana has been both praised and criticised in Mozambique. Government and business leaders welcome the prospect of replicating the *Cerrado* experience and the potential inflow of private investment and the modernisation of agriculture. Civil society has warned of the dangers of creating landlessness, impoverishing rural communities by making them dependent on large-scale investments, and damaging the environment and compromising sustainability. The Mozambican National Peasants' Union (UNAC) has accused ProSavana of being top-down and failing to involve farmers in a meaningful way.

Brazilian and Chinese engagement in Mozambique

Technical cooperation is providing a platform for external investment and exploiting Mozambique's agricultural potential. Brazilian and Chinese development cooperation and investment initiatives seem to chime with the interests of the political and business elite in Mozambique. Foreign investment in the agricultural sector is undoubtedly needed. But questions are raised: Will the benefits of such investments spread to the majority of poor smallholder farmers? Will the technology development centres, pilot projects and extension efforts be appropriate and well-targeted? Or will local political and business elites, in alliance with external investors, be the main beneficiaries?

Ghana[x]

China and Brazil have established significant trade, investment and international development cooperation relations in Ghana. Both are committed to South-South cooperation based on respect for national sovereignty and national interests, non-intervention, no imposition of conditionalities, and cultural affinities or common histories as colonised nations. However, engagements by China and Brazil in Ghana need to be seen in the context of rising global agribusiness and shifts in Ghana's policy towards agribusiness.

Following the privatisation of agricultural services and removal of input subsidies under structural adjustment, Ghanaian agricultural policy from the late 1990s has been dominated by two themes: poverty reduction concerns with differentiated strategies to meet the needs of different farmers; and agribusiness development through increasing productivity along the value chain and market governance of food chains. Agricultural development has been uneven, with the private sector cherry-picking the most profitable sectors (such as horticulture) and donors pumping in funds. Agribusiness development has been hampered by inadequate transport and research infrastructure and the difficulties of acquiring large tracts of land.

Brazil and agriculture in Ghana

Brazilian investments in Ghana are comparatively small but focused on the agriculture sector. They reflect the two facets of the Brazilian success story: agribusiness based on large-scale plantations and multinational investments, and smallholder agriculture linked into agribusiness investments.

The More Food International Programme makes provisions for Ghanaian farmers to acquire Brazilian technology – such as tractors – through a US$98m loan to the government of Ghana. The tractors suit holdings of 20-60ha: in Ghana this means quite wealthy farmers or smallholder farmer associations, which are poorly developed. Disbursement of tractors is not new in Ghana, but as fuel costs have increased and cheap tractors have disappeared, farmers are moving towards herbicides to clear land. The More Food Programme back in Brazil builds synergies between: (i) increasing smallholder production, (ii) creating markets for this production through school feeding programmes (social protection), and (iii) creating demands for agricultural technology industries. However, it is not clear how the first two linkages will work in the Ghanaian case, given the different institutional set-up; nor the third linkage, since Brazilian companies are supplying the agricultural machinery. In Brazil, civil society organisations have been important in voicing smallholder demands in policy, but in Ghana farmer movements are weak, and many dominant NGOs support integration of smallholders into agribusiness value chains.

Private sector investments include a US$260m loan from the Government of Brazil to Northern Sugar Resources company for a sugarcane plantation and ethanol plant, with technology from Brazilian companies and guaranteed purchases by a Swedish green fuels company. The programme has been delayed, partly due to problems in land tenure transparency and conflicts over lands. There are on-going controversies over imports of Brazilian ethanol into the EU: setting up bilateral projects for ethanol production in an African country is more likely to gain preferential access. This has led to accusations that developing Brazilian ethanol plants in Africa is leading to land grabbling and environmental destruction.

Brazilian companies have significant interests in rice production. Global Agri-Development Company (GADCO) has initiated a 1,100ha rice production scheme in the Volta region, working with smallholder farmers to produce much-desired perfumed rice for the Ghanaian market. GADCO works with development organisations and specialist service providers for technical management and access to Brazilian technology.

China and agriculture in Ghana

China has a long history of economic cooperation dating back to the Nkrumah period when 200 Chinese technicians and diplomatic staff were located in Ghana. Economic relations between Ghana and China now involve multi-billion dollar long-term loans for infrastructure development, underwritten by Ghana's oil resources. Trade between Ghana and China has expanded rapidly to around US$2bn per year. However, Ghana has a significant trade deficit with China: Ghana's imports from China are dominated by manufactured goods and Ghana's exports are mainly agricultural commodities and raw materials.

Economic cooperation includes infrastructure, energy, communications, trade, education and agriculture sectors. Chinese private investments in agriculture grow out of infrastructure commitments and input supply based on oil by-products. China has provided infrastructure for the Afife (Weta) and Nobewam rice irrigation projects, while a fertiliser plant has been established by a Ghanaian-Chinese company at Amasaman, Accra and an agrochemicals subsidiary by a Chinese industrial group in Kumasi.

China and Brazil in Ghana

Chinese projects in Ghana are helping develop modern infrastructure, including irrigation, and providing inputs and technical support. China does not promote private sector investments directly but builds relations with the agricultural ministry to enhance technologies for smallholder farmers. These interventions have had a telling effect on the agricultural economy and stimulated interest in investments in modernising rice cultivation. China is making a big impact on the Ghanaian economy, yet there has been no open debate on this transformation, creating mistrust among the Ghanaian public.

Brazilian investments in Ghana aim to develop linkages between agriculture and agro-processing and build agribusiness capacities – to create a market for Brazilian technologies. This is not necessarily detrimental to Ghanaian agriculture, if it stimulates linkages with agri-processing and encourages domestic production. The Brazilian approach also develops social protection alongside agribusiness, rather than assuming that integrating smallholders into markets will automatically eradicate rural poverty.

Zimbabwe[xii]

Zimbabwe was isolated economically and diplomatically by Western countries from 2000, after embarking on land reform. Agricultural financing dried up and traditional donors only provided humanitarian assistance to communal farmers and refused to support programmes in newly settled areas. The Zimbabwe government approached China and Brazil to help resuscitate the agricultural sector. China offered significant loans and other forms of investment and aid, and Brazil also promised support.

Agricultural production fell by almost 80 percent between 2002 and 2008. However, with the formation of a Government of National Unity and stabilisation of the macro-economy in 2009, growth has been recovering.

China in Zimbabwe

Ties with China go back to Zimbabwe's liberation struggle in the 1970s and have been strengthened under its Look East policy since 2003. Programmes include those between the two governments and between non-state entities. Government-to-government programmes include: establishment of an ATDC to showcase Chinese technologies and conduct training and research; study tours for Ministry of Agriculture staff and placement of Chinese experts in AGRITEX (Zimbabwe's Agricultural Extension Department); US$14m in food aid; and a US$334m loan facility from China's Exim Bank for procurement of tractors and a mechanisation programme (not yet ratified by the Zimbabwe Parliament, amid concerns over the 10 percent down payment and 5-year repayment limit).

Chinese companies have become involved in tobacco and cotton production in Zimbabwe through contract farming, providing inputs to small-scale growers who repay at marketing. Chinese contractors and buyers have contributed significantly to the revival of the tobacco sector. Tianze Tobacco held a 12 percent share of the total crop marketed in 2011, offering the highest price among foreign buyers. Most of its farmers are on newly settled land since the company only contracts farmers who can commit 10ha to the crop. Chinese contractors have also been involved in cotton farming. However, Sino Zimbabwe Cotton Holdings has been accused of providing little or no production inputs to farmers; not grading the crop; and aggressive marketing, buying even crops grown under contract with other ginners. Such practices could hurt the industry in the long run, with merchants scaling back their inputs support.

Brazil in Zimbabwe

Agricultural cooperation has recently begun with Brazil. The flagship of Brazil-Zimbabwe cooperation is the More Food International programme, with a US$98m loan to supply Brazilian tractors and irrigation equipment to small-scale farmers to help resuscitate the sector and improve food security. The government of Zimbabwe will take the loan and on-lend to farmers, who are expected to repay over 15 years. However, there may be problems servicing the loan given the government's financial difficulties and with repayments by farmers not synchronised with repayments to the government of Brazil.

Private investments include the Chisumbanje ethanol plant, a 20-year joint venture between Green Fuels and the quasi-state Agriculture and Rural Development Authority (on whose estate the plant is located) under a Build-Operate-Transfer arrangement. Brazilian companies provided expertise in building the plant, with sugarcane coming from the estate and out-grower communal farmers. The ethanol is being sold as a 10 percent blend with petrol at slightly below the 100 percent petrol price; however, there is limited demand for the product without mandatory blending, which is now under discussion.

Experience of Brazil and China in Zimbabwe

Chinese and Brazilian investments in Zimbabwe have come at a critical time, but there are questions over the focus, modalities and implications of these engagements. Brazil and China are focusing on investment for growth among better-off farmers in resettlement areas which have been off limits for Western donors. The agricultural cooperation programme with China that started as a bilateral programme has grown into commercial arrangements between private companies and quasi-state institutions. The tobacco sector has benefitted tremendously, but there are questions over one company's dealings in the cotton sector.

The Indigenisation and Economic Empowerment Act (2010) requires at least 51 percent Zimbabwean ownership, but Chinese companies have exemption – the argument being that they are sub-contracting large numbers of local smallholder farmers.

Whilst aid programmes are much needed, there are fears that such cooperation could entrench the country deeper into debt. The government has also raised concerns that most of its exports are raw or semi-processed rather than finished products, which earn less from exports and suppresses general economic activity in the country. A final question is how transferrable are Brazilian technologies, given differences in landholding size and conditions?

Ethiopia[xiii]

The Government of Ethiopia promotes harmonisation and alignment of donor support through the Ethiopian High Level Forum and thematic working groups. However, China and Brazil are not members of any of the working groups: their engagement is bilateral through unique institutional arrangements. The Ministry of Finance of Economic Development has an independent office dealing only with China, whilst the Ministry of Foreign Affairs' Economy and Business Directorate and the Ethiopian Investment Agency actively promote collaboration with Brazil and China.

Experience sharing in public governance

Since 2008, all public organisations in Ethiopia have gone through 'Business Process Reengineering' (BPR)[xiv] designed to make public services more efficient and accountable. This has involved bench-marking best practices of countries in the South – China, India, Brazil etc. – through visits by PBR teams from each Ethiopian public institution.

Successful bench-marking experiences include: i) restructuring the Ethiopian agricultural research system based on the Indian model; ii) promotion of a bio-energy strategy, based on Brazil; iii) agricultural technical vocational education and training (TVET) adapted from China; iv) agro-industry zones near major towns, adapted from China; and v) adaptation of group action approaches for organising farmers, from China and Korea.

Technical cooperation

Technical cooperation between Ethiopia and Brazil is being developed around two major, interlinked areas: 1) Agricultural research: discussions are underway between the Ethiopian Institute of Agricultural Research and EMBRAPA to agree on a mode of collaboration. 2) Biofuel development: private sector investment along with Brazilian collaboration with the Ethiopian Sugar Corporation.

Technical cooperation between China and Ethiopia dates back to the 1970s, with current cooperation in: 1) an ATDC expected to be functional in 2013; and 2) provision of Chinese instructors for an Agricultural Technical Vocational Education and Training (TVET) centre in Ethiopia.

Attracting private investment

Alongside technical cooperation, the Government of Ethiopia is promoting Southern investment opportunities in the country. Agriculture-related investment is so far low by both China and Brazil, although 32 permits have been approved for Chinese investors by the Ethiopian Investment Agency since 2008. Many are small-scale (under 10ha), typically vegetable, pig and poultry production units linked to Chinese restaurants and hotels in Ethiopia. Two are large-scale investments in government priority areas: 100,000ha for a rubber plantation and 30,000ha allocated for a palm oil plantation.

South-South cooperation in Ethiopia

Brazil and China have a unique cooperation relationship with Ethiopia. Core activities are experience-sharing in public sector governance, technical cooperation and attracting private and public investments. The Government of Ethiopia's 'developmental state' approach seems to be delivering results in the agricultural sector, with South-South cooperation playing an important role.

Key points for policy makers

- China and Brazil have embraced South-South cooperation and are moving into development in Africa. Relationships are complex with multiple players: cooperation programmes are government-to-government, but there are other levels of engagement, including Brazilian and Chinese private sector trade and investment and the involvement of Brazilian social movements.

- China has become one of Africa's largest trade and investment partners, developing modern infrastructure and providing technical support as a basis for growth and further investments. However, many African countries face large trade deficits with China and challenges in loan repayments.

- Brazilian investments emphasise linkages between agriculture and agri-processing, creating an opportunity for transfer of Brazilian technology and services to African farmers – with credit provided by development banks. Brazilian cooperation is taking forward a range of policy experiences, including small-scale 'family' farming and social protection approaches alongside agribusiness expansion. However, the coherence and potential complementarity between these different experiences still needs to be established.

- African policymakers need to critically examine Chinese and Brazilian models and their impact on different groups within the agricultural sector. What type of technical and development cooperation is needed to develop rural economies? How can African countries engage in shaping South-South cooperation, retaining ownership and advancing the interests of rural people and the agricultural sector?

End Notes

[i] CAADP (2008) Building South-South Linkages: CAADP and Asia. Partnerships in support of CAADP. http://www.caadp.net/pdf/CAADP_brochure2_no_marks%20(2).pdf

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[x] Amanor, K. (2013) 'Expanding agribusiness: China and Brazil in Ghanaian Agriculture' IDS Bulletin 44.4 80-90

[xi] Herbicide use is being promoted by Embrapa as part of low carbon farming and low-till technologies in a scaled-back version of the ProSavana programme but there is currently no uptake of low-till agriculture in Ghana.

[xii] Mukwereza, L. (2013) 'Reviving Zimbabwe's agriculture: the role of China and Brazil' IDS Bulletin 44.4 116-126

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