AN OVERVIEW OF CHINESE AGRICULTURAL AND RURAL ENGAGEMENT IN TANZANIA

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Abstract: Chinese engagement in agriculture and rural development in Tanzania is long-standing. Changes in this engagement reflect the changes in China's engagement in Africa more generally. This overview paper explores China's engagement in historical perspective, focusing on foreign aid, other official engagement, and investment by Chinese firms between 1964 and 2011.

Keywords: China and Africa; China and Tanzania; agribusiness; foreign aid and agriculture

INTRODUCTION

Chinese engagement in agriculture and rural development in Tanzania is long-standing and covers multiple activities. Very active as a donor in the 1960s and 1970s, Chinese engagement slowed in the 1980s, shifting away from new projects into efforts to boost the sustainability of past projects. In the 1990s, the focus changed to incorporate far more commercial and investment activities. Yet few Chinese investors have made commitments to invest in agricultural activities in Tanzania. As the Chinese economic counselor said in 2008, "Agriculture is risky here. It is hard to have win-win."[2] This paper documents the full range of agricultural and rural development activities, both historical and contemporary. Its primary purpose is to serve as background for other researchers: Tanzanians and foreigners.

Researchers from IFPRI visited Tanzania (Dar es Salaam, Kilosa and Dakawa in the Morogoro Region, and Zanzibar) between September 17 and 30, 2011 to conduct a scoping study of Chinese engagement in agriculture and rural development. The researchers conducted over thirty interviews, primarily with Chinese and Tanzanian officials and businesses, and with several knowledgeable foreign experts. We also obtained census data on all approvals of specific Chinese foreign investment activities in agriculture and agribusiness from the national investment authorities to locate Chinese investors. The report also draws on earlier visits by IFPRI researchers to Tanzania as well as published and unpublished documents and secondary material.[3]

China and Africa: Frameworks for Engagement in Agriculture

China's success in feeding a fifth of the world's population with only eight percent of its arable land is well known. Thousands of years of intensification of farming in much of the country has led to very high yields per hectare of land. China's hybrid rice pioneer Yuan Longping, for example, has just produced a variety that yields 13.9 mt/ha under trial conditions. Labor-intensive cultivation practices such as the transplantation of irrigated paddy rice are common. Yet China also has arid grasslands and pastoral communities that bear some resemblance to the rural areas of Tanzania.

China's policy on engagement in agriculture in Africa can be seen in its January 2006 Africa Policy White Paper, and in the action plans resulting from several rounds of high level meetings under the Forum on China-Africa Cooperation (FOCAC).[4] The 2006 Africa Policy White Paper commented that:

> Focus will be laid on the cooperation in land development, agricultural plantation, breeding technologies, food security, agricultural machinery and the processing of agricultural and side-

> line products. China will intensify cooperation in agricultural technology, organize training courses of practical agricultural technologies, carry out experimental and demonstrative agricultural technology projects in Africa and speed up the formulation of China-Africa Agricultural Cooperation Program.[5]

Two recent action plans following ministerial level meetings of the Forum on China Africa Cooperation have emphasized agricultural cooperation. (As with other summits, action plans are developed beforehand by working groups.) During the 2006 Beijing Summit of the Forum on China-Africa Cooperation, the two sides – China, and African governments -- pledged to "intensify their exchanges and cooperation in farming, animal husbandry, irrigation, fishery, agricultural machinery, processing of agricultural produce, sanitary and phytosanitary measures, food safety and epidemic control".[6] In 2009, China pledged to enhance cooperation in "agricultural infrastructure, grain production, breeding industry, exchanges and transfer of practical agricultural technologies, and in processing, storage and transportation of agricultural products."[7]

China's agricultural engagement in Africa involves trade, investment, foreign aid, and government-sponsored bilateral cooperation based on mutual benefit.[8] The Ministry of Commerce (MOFCOM) is a central actor. China's foreign aid program is run out of MOFCOM's Department of Foreign Aid, while investment and some areas of cooperation are promoted by MOFCOM's Department for Outward Investment and Economic Cooperation. For agricultural aid, MOFCOM coordinates with the International Economic Cooperation Center of the Ministry of Agriculture and sometimes the equivalent department in the Ministry of Science and Technology.

In the 1960s and 1970s, China's agricultural aid in Africa emphasized large state farms. This changed in the 1980s, when small-scale projects in support of smallholder farmers were favored.[9] Recent agriculturally-relevant foreign aid includes the dispatch of 100 senior agricultural experts to Africa for a year of technical assistance (most countries received two or three experts); short term training in China; and the establishment of twenty agro-technology demonstration centers across the continent. In addition to these standard programs, some African countries have received other agricultural assistance: vocational training, South-South Cooperation with the Food and Agricultural Organization (FAO), rural roads, etc.

Together with the Ministry of Agriculture, MOFCOM originally conceived of its grant-financed agro-technology demonstration centers as an experiment. Chinese companies and institutes, selected via a competitive tender system in China, would build the centers, and the Chinese aid budget would pay for equipment and Chinese personnel to help run the centers for three years. During that time, the Chinese companies and institutes would seek out income generation activities that would enable the centers to fund their own revenue streams. They would also use their time at the center as a platform to seek other commercial opportunities in the country. This experimental approach is an example of foreign aid coupled with mutually beneficial cooperation. It is based on a "responsibility system" that has been widely practiced in many of China's own domestic government centers and agencies.

Other Chinese engagement in agriculture involves China Development Bank (CDB) and China Export Import Bank (Eximbank), both of whom provide commercial development finance and export credits; China Eximbank also provides concessional foreign aid loans. China Development Bank is the parent organization of the China-Africa Development Fund. CAD-Fund has signed a strategic agreement with China State Farm Agribusiness Corporation to set up a joint company to make agricultural investments. In Africa, this has not yet resulted in much beyond the transfer of some of CSFAC's existing investments (mainly, but not only, former aid projects) to the new joint venture. China also has provided zero-tariff entry for a large number of agricultural commodities and processed goods (cotton yarn, sisal fiber, finished leather, etc.) from Africa's low income countries.

China's strategy for agricultural engagement abroad has a long-term perspective. They believe that aid, investment, and other forms of cooperation should be used to increase food and agricultural output globally. They are fully aware of the sensitivities of large-scale agricultural investment in Africa. Although Chinese companies have investigated a number of potential projects, generating many media stories, there do not appear to be any documented cases of Chinese companies actually implementing investments in agricultural operations above 10,000 hectares in Africa.[10]

Tanzanian Agricultural Strategy

Fifty years after independence, Tanzanian agriculture remains dominated by smallholder farmers growing food crops with hand hoes, dependent on an uncertain rainfall. Yields are low. As a result of the market-oriented reforms, the entire agricultural sector, such as production and processing, input importation and distribution and agricultural marketing, has opened up to private investment, and the private sector is now expected to carry out most of the production, processing and marketing functions.[11] The Agricultural Sector Development Strategy (ASDS), prepared in 2001, has set the road map for the sector until 2025. The ASDS aims to improve market dynamism by strengthening the institutional framework, creating a favorable environment for commercial activities, clarifying public and private roles in providing services, and improving market efficiency.[12] Correspondingly, the *Kilimo Kwanza* program, which was initiated in 2009 to foster a Tanzanian "green revolution", focuses on facilitating commercial financing, building public-private partnership, providing fiscal incentives, removing market barriers and promoting investment in agriculture-related industries.[13]

In this connection, agricultural research and extension services will be decentralized to local communities and be outsourced to non-governmental organizations and private groups.[14] Similarly, local communities and various stakeholders will be given the responsibility to manage small-scale irrigation schemes, develop local renewable energy programs and construct local housing.[15] The government will continue rehabilitating the road network which is in poor condition.[16]

CHINA AND TANZANIA HISTORICAL BACKGROUND, 1964-1999

China's assistance to agriculture and rural development in Tanzania has been extensive, with multiple projects going back to the first economic and technical cooperation and loan agreements in 1964. Between 1964 and 1970, China financed the Ruvu State Farm, Upenja State Farm, Urafiki Cotton Textile Factory, Ubungo Farm Implements Factory, Mbarali Rice Farm, and at least four farmer training centers. The Tazara Railway was built between 1970 and 1976. In subsequent years, Chinese teams remained or returned to many of these projects, attempting to keep them afloat. However, few Chinese investors were interested in bidding on these assets when Tanzania began to privatize many of its state-owned companies.

Ruvu State Farm. In 1965, China and Tanganyika agreed to co-finance the Ruvu State Farm, a 2834 hectare (ha) development located 50 miles west of Dar es Salaam. The farm itself developed 810 ha for rice, cotton, vegetables and cereals (other reports put the total at 720 ha), while 2834 ha was dedicated to fruit trees, dairy and beef cattle, for a total cost estimated at between $1.1 and $1.4 million. China agreed to meet the recurrent costs of the project until it was self-sustaining.[17] In addition, the Chinese financed a $14 million irrigation and hydroelectric dam on the Ruvu River to provide power for the farm.[18] Ruvu State Farm was set to be privatized in the late 1990s, along with other state farms.[19] As of January 2009, however, Ruvu Farm hosted small-scale farmers and comprised 1215 hectares.[20]

Upenja State Farm. The island of Zanzibar also received finance and Chinese assistance for Upenja State Farm (526 ha) between 1965 and 1969. Upenja was designed to be a modern, mechanized farm with rice, beans, tropical fruits, poultry and vegetables. The Chinese trained Zanzibaris in harvest operations, tractor driving, and machine repair.[21] Irrigation was done via thirteen deep wells. The project appears to have been somewhat controversial in Zanzibar. In recollecting the project today, a Zanzabari told us that "all mango trees which helped to bring rain were bulldozed despite popular acclaim against it."[22] Another Zanzibari told us that Upenja "never reached the goals" set out at the beginning, although it is "still operating as a state farm under the Ministry of Agriculture and Natural Resources."[23] He noted that the Chinese have expressed interest in supporting agricultural projects in Zanzibar, and were interested in "trying to revive the old projects that were assisted by them in 1960s." So far, Upenja farm has not been on this list, however.

Maziwa-Ngombe and Wete Road. On the small island of Pemba north of Zanzibar, a Chinese team built a road between Maziwa-Ngombe and Wete in 1964, approximately 20 miles.[24] This appears to be the only road project ever financed out of Chinese aid in Tanzania.

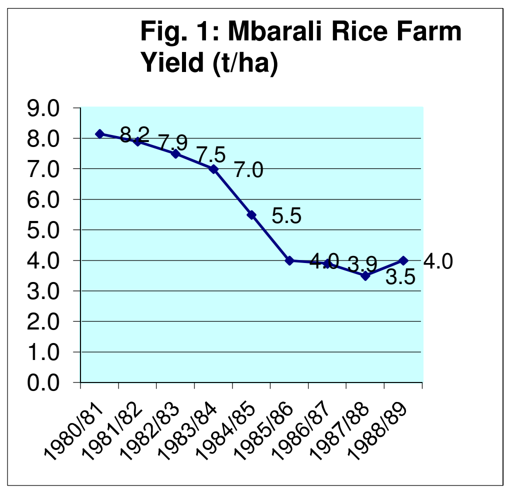
Tanzania-Zambia (Tazara) Railway. China's largest aid project in Africa to date remains the iconic Tanzania-Zambia (Tazara) Railway: 1,860 kilometers, running from the port of Dar es Salaam to join an existing line at New Kapiri Mposhi in Zambia. Discussions on the project began in 1964, with feasibility studies and subsequent agreements signed in 1967, and the final agreement being signed in 1970, the same year that the work began. Built between 1970 and 1976, this project was financed by a zero-interest loan of almost 500 million yuan ($286 million) and a grant of $28.6 million. It also included construction of a center that could train 200 people at a time.[25] The purpose of the railway line was to open up rural areas of Tanzania and Zambia, and to enable Zambia's copper to reach the sea without being held hostage to South Africa, controlled at that time by a hostile regime. The railway is still supported by the Chinese government, which provides regular, concessional loan-based financing.

Mahonda State Sugar Cane Farm and Processing Factory. In Zanzibar, China began building the Mahonda State Sugar Cane Farm and Processing Factory in 1974, about 25 kilometers north of Zanzibar town. The feasibility study for the project was done in 1970.[26] The factory processed cane grown on a 1216 ha plantation, which also seems to have been developed with Chinese assistance. In the mid-1980s, Chinese experts returned to revamp the factory, financed by a TSH 20 million soft loan; they did not stay, however. In 1996, China offered Zanzibar $ 2 million for additional rehabilitation of Mahonda, among other projects.[27] However, the factory was plagued by problems of embezzlement and mismanagement under Zanzibari management. Production at the adjacent plantation had declined from an annual 6000 mt to 500 tons, workers suffered significant salary arrears, and when the factory closed in 1998, they were suspended without having been paid.[28] Although Mahonda was offered under the privatization program, and sparked some interest among Indian, Spanish, and Chinese investors, it was ultimately shut down and remained closed until 2004, when it was purchased by a local Indian private investor, who is apparently also struggling to run it profitably.[29]

Mbarali Rice Farm. China's most extensive agricultural aid project in Tanzania was Mbarali Rice Farm in Mbaye, built between 1971 and 1977 and managed with Chinese technical assistance for several decades thereafter. The Mbarali District lies in the southern Usangu plain, "famously known as the 'national rice basket' because it used to yield up to 60% of the rice consumed in Tanzania."[30] Mbarali had its origins in 1958 when the Tanganyika Agricultural Corporation (TAC) developed irrigated rice with the assistance of the FAO. The Chinese government signed an agreement to develop a rice station at Mbarali in 1964. The task was assigned to the Department of Agriculture and Forestry of Jiangsu Province. Construction began in 1971 and finished in September 1977. The cost came to RMB 24.9 million ($13.4 million).[31] According to one source, the Chinese team developed 3530 hectares, half of which was new, and half reclaimed.[32] Another source put the size at 5575 ha in 1977, and 5842 ha in 2009.[33]

Mbarali was a self-contained state farm, with its own irrigation and drainage, barrages to control floods, and a 320kw hydropower system, piggery, dairy farm with 100 cows, poultry farm with 50,000 chickens, rice mill with an annual capacity of 8000-10,000 mt, staff housing. The Chinese developed it as a highly mechanized system, employing 393 full time workers, and 73 on contract. According to Chinese sources, when Mbarali was at full production, it supplied 25 percent of Tanzanian market demand, and was able to repay the initial investment within six years. [34] Yields during that period were as high as 8 tons (Fig. 1).[35] According to a Chinese source, "The shining example of the farm had also promoted rice production in the surrounding area. Small farmers in the area grew more than 2000 hectares of paddy rice with annual output of more than 6000 tons."

The farm was formally handed over in 1977, but teams of Chinese experts were attached to the farm in rotating teams, each team providing assistance for two years. Ten teams served, until July 1999 (the eighth team stayed for four years).[36] The Farm finally closed in 2001. China sent 10 runs of technical assistance teams since Oct. 1977, with each staying for 2 years while the eighth run prolonged to four years. In the first 8 runs, each team consisted of 20 experts, while the number of team members reduced to 13 in the last two runs.



The Chinese government provided loans to pay for spare parts and new farm machinery. After the farm was handed over, however, production declined sharply, from an average of 8.2 tons/ha to under 4.0 tons (Fig. 1). The Chinese explain this as due to economic hardship and foreign exchange shortages, which made it difficult to procure spare parts, keep machinery repaired, and provide fertilizer and pesticides. At these lower yields, when Tanzania liberalized rice marketing, Mbarali could no longer compete with small farmers.

As Tanzania began to offer some state assets for privatization in the mid-1990s, the Jiangsu Province team investigated the possibility of transforming Mbarali into a commercial joint venture. Yet the Tanzanian government at that point required Tanzanians to have to have a majority share. Jiangsu did not believe that Mbarali could be made to operate profitably unless they controlled the management. Believing in "non-interference", they did not press the issue.

The privatization of Mbarali was "a dramatic process" that began in 2001 and "stalled for a long time".[37] In the 2003-04 budget speech, the former Minister of Agriculture announced that Mbarali and Ruvu would be privatized to smallholders. A number of smallholders were leasing or otherwise using land to grow rice around Mbarali. However, in 2004-05, the government changed course and announced that Mbarali would be put up for sale. The farm was purchased by Highland Estates Limited, a company owned by Nawab Mulla, a local investor and CCM politician whose family had built an irrigation canal in the region in the 1930s. The cost apparently was Tsh 3.5 billion ($), and the investor put another Tsh 2.72 billion ($) to renovate and upgrade equipment. He has sub-leased 2500 hectares to cooperative groups of 884 smallholders, and provided water. But some complain that leases require a minimum acreage that is prohibitive for some smallholders.

Agricultural Extension and Farmer Training Stations. In addition to the large state farms built in the early years of Chinese aid, the Chinese government also built at least five Agricultural Extension and Farmer Training Stations**.**[38] These stations seem to have been built in several rounds and were located in Morogoro, Dodoma, Mbeya, and Kagera Regions*, inter alia*. Three agro-technical popularization centers or stations were built in the late 1960s, at least one in the 1970s (Mbaye) and two were built in the early 1980s and handed over in a ceremony on December 23, 1983.[39] The Mbeya Farmer Training Center included station buildings, housing, and a 7 hectare demonstration field.[40] Mbeya Farmer Training Center was operated by the Agricultural Department of the Shanxi Provincial Government, and built by a team that had come to assist in the maintenance of the Tazara railway. The purpose of Mbeya was to promote improved cultivation practices for maize and vegetables, including ox plowing, intensive cultivation and timely harvesting. In 1996, the Mbeya station was still active.[41] All the stations were of relatively modest size. According to one researcher, construction costs for the first three stations built in the late 1960s were estimated to total $64,000; the Mbeya Farmer Training Center built in the late 1970s was estimated to have cost $14,000.[42] However a researcher with access to internal Chinese documents reported that the Mbeya station cost RMB 920,000 ($486,000 at the exchange rate used then). Officials we interviewed at the Ministry of Agriculture in Tanzania were not familiar with any of these stations and there does not seem to be much of an institutional memory of this contribution.

Urafiki ("Friendship") Textile Factory. The Chinese also built several factories in addition to the Mahonda sugar mill that may have had an impact on agriculture and rural development in Tanzania. Urafiki ("Friendship") Textile Factory was opened July 6, 1968 on the outskirts of Dar es Salaam. Although the Chinese had proposed a more automated technology, the Tanzanians insisted on a very labor intensive design.[43] The cost of Urafiki was estimated to be, at the time, between £2.5 million and £3.32 million.[44] At full operation, Urafiki consumed 30,000 bales of cotton annually, about a tenth of Tanzanian production, and had more than 2000 workers. It was privatized in 1997 and purchased by a Chinese provincial company which now owns 51 percent, with the Tanzanian government maintaining a 49 percent share. The Chinese government has bailed out the factory on several occasions with soft loans.[45] Earlier in 2011 the factory was closed for several months when it had trouble obtaining enough raw cotton.

Ubongo Farm Implements Factory. Built in the Ubongo suburb of Dar es Salaam, the Ubongo farm implements factory was constructed by the Chinese between 1968 and 1970, at a cost of around $756,000 (it was said to be valued at $1.3 million in 1971).[46] After opening in 1970, the factory operated with 140 workers, and had difficulty operating at capacity because of foreign exchange and raw material shortages. Nevertheless, the factory was expanded in 1980, and at its peak, was meeting some 85 percent of Tanzanian demand for hoes and other hand operated farm tools.[47] Ubongo struggled to operate profitably and was ultimately privatized in the late 1990s or early in the 2000s, and was purchased by a Chinese company. They applied for financing from China Eximbank but were turned down, and the factory was again shuttered.[48] China also had a farm implement factory in Zanzibar.

Food Aid. China supplied food aid to Tanzania at least twice during this period (1985: $1 million; 1999: amount unknown).[49]

CHINA'S OFFICIAL AGRICULTURE AND RURAL AID PROJECTS, 1999-2011

China has financed two agricultural aid projects in this recent period: a new Agro-technology Research and Demonstration Center (2009 – present) at Dakawa, Morogoro Region, and a small technical assistance project (2009-2010). In addition, a number of Tanzanians have been sent to China for university education and for short training courses, and many of these focus on agriculture. A rural water project continues in its second phase, and the Chinese are completing construction of three rural schools and a fibre-optic cable system that is linking towns and cities in Tanzania for speedy broadband connectivity. China also contributed food aid and made some agriculture related donations.

Agro-technology Research and Demonstration Center (2009 – present). Built at Cholima, Dakawa, Mvomero District, Morogoro Region, the Sino-Tanzania agro-technology research and demonstration center was designed and constructed by a state-owned company, Chongqing Zhongyi Seed Company as part of the Chinese pledge in November 2006 to build ten (increased in 2009 to twenty) agro-technology demonstration centers in Africa as part of the FOCAC. These centers are designed as an experiment. The Chinese government will finance the construction, and will support a Chinese team to continue to manage or provide assistance at the center for an additional three years. In the original plan, the Chinese company was supposed to use this opportunity to develop commercial activities that might enable the center to be self-sustaining.[50]

Knowing that the model involved an experimental public-private partnership and that teams would bid in a public tender held in China, a team from a state-owned agribusiness company and research institute in Chongqing visited Tanzania in 2008 to investigate opportunities.[51] In a May 2008 interview with the *Chongqing Evening News*, the company said that it had selected an area of 300 ha in Tanzania and planned to establish an outgrower operation using its patented hybrid seeds, which would be provided to local farmers.[52] They envisioned exporting some of the grain back to China.

The Chongqing research center and its agribusiness made an effort to be selected for the Tanzania project. Chongqing Zhongi formed the Chongqing Sino-Tanzania Agriculture Development Company. The Tanzanian government provided four potential sites for Chongqing to choose from. The other three spots were too remote or too challenging, and the Dakawa site, while close to an existing Tanzanian agricultural center, also had a problem: lack of water. According to the agreement, the Tanzanian Ministry of Agriculture had promised to build a pump and pipeline connecting the center to a small river 3 to 5 kilometers away, but this had not yet been done. The Tanzanian side is also supposed to pave the road to the center (this has not been done yet), and bring electricity to the center (this has been done, but blackouts are frequent and the center has its own generator).

After selecting the 62 hectare site in Morogoro, construction of the center lasted 13 months (October 2009 to November 2011) and the center was formally handed over on April 2, 2011 in a ceremony attended by Tanzanian President Kikwete. It comprises 10 ha of experimental fields (hybrid and conventional rice, maize, horticulture), 2 ha for an office, laboratory and training complex, and 50 ha of outside fields which are equipped with irrigation and drainage channels. The center, which will focus on advanced seed technology, has a dual function: research, and training. It includes a modern poultry and egg complex, greenhouse, tissue culture rooms, and four deep wells that supply water to 1-3 ha of the experimental fields during the dry season. Construction of the center came to RMB 40 million yuan (about US$6 million) and was financed by a grant.[53]

Initial trials at the experimental plots found that rice yields with Chinese hybrids were four times that of local varieties, but local maize and the Chinese maize were not far apart. The Chongqing company official we interviewed was skeptical about the potential for exporting hybrid rice seed to Tanzania (the seeds are intellectual property, so they cannot be reproduced locally). Tanzania has complicated phytosanitary seed importation procedures. He had observed that Tanzanian peasants believe fertilizer and pesticides are too expensive to apply. Local representatives of the Ministry of Agriculture responsible for the demonstration center called it a "good job; they are preparing a good place for doing work. Some people get ideas from them, local farmers."[54]

According to several officials familiar with the project, and the Chinese themselves, local people do not care for the taste of Chinese rice. "Rice is our second staple," a Ministry of Agriculture official told us, "People eat rice in the evenings in towns because they have some money to buy it. But rice production is low. The potential is good for producing more. Rice is also served on special occasions. The Chinese rice is not as tasty as ours. We want to balance the two characteristics. We want varieties that are high-yielding, but also tasty and with a nice aroma."[55]

The original plan called for the Chinese technicians and the centers in Africa to be supported by the Chinese government for three years after completion, and what this will involve in Tanzania is currently under negotiation between the two sides. At the opening of the center, local farmers appeared to desire direct training: "As hundreds of local residents witnessed the handover ceremony, they also expressed their intention to be trained at the centre." [56] Yet according to the Chinese embassy and Chongqing, the center would mainly be training higher level agricultural officers and technicians selected by the Tanzanian government, as they would need to be educated to take advantage of the level of training on offer at the center.[57]

The Chinese team in place has no specific plans for the center, or for outreach to local farmers, or a credit system to enable adoption, and see these activities as the role of the Tanzanian side. As the center has been turned over to the Tanzanians, it is viewed by the Chinese as the property of the Tanzanians. The Chinese will carry out three years of "software" (training, etc.) and then probably depart. During that time, Chongqing will also use the center as a "platform" to look for other opportunities in Tanzania (see under investment below).

Technical Assistance and Capacity Building. As part of the FOCAC pledges to send 100 agricultural experts to Africa, China sent three Chinese experts to the Tanzanian Ministry of Agriculture between 2009 and 2010 to provide technical assistance, capacity building, and help organize training for Tanzanians in China. Two focused on promotion of advanced techniques and non-traditional crops (e.g. soybeans); one was an irrigation expert. They proposed practical steps for government assistance to smallholder farmers. One had served in Nigeria before and spoke English well, the others not so well, "but we could easily communicate."[58]

Agriculture-related Training Programs in China. In connection with the 2006 FOCAC pledge to offer short term training to up to 30,000 Africans, China has offered a number of agriculture-related training programs in China for Tanzanians. In Zanzibar, for example, China has provided intensive short term training (usually three weeks) on agricultural management, handicraft production, and fishery techniques for Zanzibari officials and technicians every year since 2006. At first, 10-20 Zanzibaris were sent to China every year. Starting in 2009, the number has significantly increased. In 2009, it was 70, in 2010, over 100 and in 2011, it may reach 200. Previously, the trainees joined training programs with a mix of people from around Africa, but now it appears that some at least will travel in their own program. In September 2011, for example, China offered an aquaculture training class for 30 Zanzibari fishermen and one official.[59] The trainees, said to be ordinary fishermen, were selected by the Zanzibari fishery ministry, (probably with some limits like language and age). They spent a month in Xiamen visiting various kinds of aqua farming projects.

Chalinze Rural Water Supply Project. China has provided grant finance and constructed two phases of the Chalinze Rural Water Supply Project (2001-2003; 2007-2015). The first phase of Chalinze began in 2001 and ended in 2003, and supplied piped drinking water to 20 villages, about 62,961 people.[60] The final phase should bring the total beneficiaries to over 100,000. As described by the Chinese: "China has completed a drinking water network in central Tanzania and is training local staff to operate it."[61]

The Chalinze area is semi-arid, groundwater is not potable, and the water table falls during the dry season. The entire pipeline to the villages from the Chalinze water treatment center is 126 km, and the distribution pipe 34 km. Water delivered through this project has metered standpipes which are monitored by village members who collect money for each liter.[62] China Hainan International Cooperation carried out the project, with some 50 Chinese and about 500 local workers.[63] The first phase of the project cost TShs 23 billion (approximately $).[64] On April 27 and May 11, 2007, the Chinese embassy signed two agreements to continue to support maintenance and expansion of Chalinze Water Project. A survey team was dispatched in January 2008 to review the existing work and map out the extension of Chalinze. Construction was ongoing during our visit in September 2011.

Three Rural Primary Schools. The Chinese government is building at least three rural primary schools in Tanzania.[65] One was built between May 2009 and January 2011 by Beijing Construction Engineering Group Co. Ltd in President Kikwete's home town of Msoga, about 110 km west of Dar es Salaam at a cost of 5 million RMB ($750,000). Another, Laalakiri, was built in Partimbo ward of Kiteto, an "international special talents school" but apparently focused on educating the pastoral community.[66] A third is in a village on the west coast of the island of Zanzibar. Each school is intended to serve 300 students.[67]

National Fibre-Optic Backbone Project. China has provided two concessional loans for Tanzania's national fibre-optic backbone project. The first phase of the 10,674 km, $170 million project was completed in May 2010 with concessional loan financing from China Eximbank.

China Communication Construction Company (Tongxin Jianshe Jituan, a subsidiary of China Telecom) is carrying out the project. The first phase of 7000 km connected Tanzania's major cities in the north and the east -- Rwanda, Dar es Salaam to Tanga, Moshi, Arusha, Singida, Dodoma, Iringa, and Morogoro -- and provides connections through to Burundi, Kenya, and Uganda. China Eximbank provided a new concessional loan of RMB 700 million yuan ($100 million) for the second phase.[68] The second phase will link Dar es Salaam to Kigoma, Taborak, Sumbawanga, Mbeya, Songea, Mtwara, and Lindi as well as connecting to Zambia and Malawi. The project is expected to bring broadband connectivity closer to rural villages, and reduce connection costs by some 80 percent.[69]

Agricultural Machinery Donations. China donated tractors to Tanzania in 2000. In 2005, China donated $123,615 worth of agricultural machinery, including three heavy-duty tractors, seven power tillers, two milling machines and two water pumping systems.[70]

OTHER RECENT AGRICULTURAL/RURAL COOPERATION, 1999-2011

Several other areas exist where Chinese engagement is relevant for agriculture and rural development. None of these are financed under China's aid budget. Cooperation between China Development Bank and the Bank of Tanzania is ongoing, with regard to the proposed establishment of the Tanzania Agricultural Development Bank. UNIDO (the United Nations Industrial Development Organization) helped coordinate and finance the purchase of Chinese biogas technology and study tours to biogas sites in China in connection with a pilot project at the commercial Katani sisal farm, which is locally owned. The World Bank has supported efforts by the International Poverty Reduction Center of China (IPRCC) to engage Tanzanian officials on the Chinese experience of policy reform in agriculture.[71] The World Bank coastal area development project sent Tanzanian officials to China on a study tour of fisheries and coastal management. The International Poverty Reduction Center of China (IPRCC) commissioned a pre-feasibility study for a microfinance center in the town of Morogoro, in cooperation with a major local microfinance organization, PRIDE. IPRCC is also implementing a small community development project in the neighborhood of the sisal farm operated by a Chinese state-owned company. China has not financed any roads in its aid program in Tanzania since the 1960s, but several dozen Chinese companies compete for road construction projects financed by the government and donors.

Tanzania Agriculture Development Bank (2009 to present). Several years ago, the Tanzanian government requested Chinese assistance with its long-standing plan to establish an agricultural development bank. A month after President Hu Jintao's visit to Tanzania in

February 2009, the Chairman of China Development Bank, Chen Yuan, visited Tanzania and signed a framework cooperation agreement with the head of the Bank of Tanzania, Prof. Benno Ndulu, regarding future cooperation.[72] The bank is seen as part of Tanzania's Kiloma Kwanza agricultural modernization program. Discussions at the time noted that the CDB had agreed to provide technical and unspecified financial support, and would begin by CDB financing several feasibility studies, including a currency swap program and a program to provide local Chinese businesses with loans in Tanzanian shillings. [73] The pre-feasibility study for the agricultural development bank was carried out by an Indian consultant.[74] The local CDB working team reported that the research department at CDB headquarters was currently studying the pre-feasibility study for the agricultural development bank.[75] The program has not yet been implemented, although two and a half years have passed. The Chinese hesitation may stem from problems that others have identified with Tanzanian government banks: how to ensure that they avoid the portfolio risk of providing loans for government officials and politicians who do not intend to repay.[76]

Peiyapeiya Village Community Development Project (2008 to present). The International Poverty Reduction Center of China (IPRCC) has done research since 2008 in Tanzania, led by China Agricultural University Professor Li Xiaoyun, who is affiliated with IPRCC. IPRCC commissioned a pre-feasibility study for a microfinance center in the town of Morogoro, in cooperation with a major local microfinance organization, PRIDE. The head of PRIDE is on the board of the IPRCC. The pre-feasibility study was carried out by a Tanzanian economist who is on the board of IFPRI, Samuel Wangwe. Apparently IPRCC decided against moving forward with the microfinance center.[77]

Meanwhile, a local Chinese-owned sisal farm had done several community projects (repair local schools, sponsor local soccer teams) but was interested in doing more. The managing director went to Beijing during a home leave and asked Chinese NGOs for advice. He eventually got in touch with IPRCC and China Agricultural University. This cooperation is the result.[78] In January 2011, a research group from IPRCC spent six days conducting field research in Peiyapeiya Village, Morogoro Province. Peiyapeiya Village, with about 2400 residents, is one of six villages in the vicinity of the sisal farm.[79] The sisal farm is the major employer of people in the village (there are no other real opportunities for paid employment in the area). They proposed to the local villagers' committee that they cooperate in a pilot community development demonstration projects for the village, together with the sisal farm.[80]

The community together with researchers from IPRCC and the farm managers decided on a plan for this cooperation. The first step involved rebuilding the village community center: a building originally 20 sq m is being replaced by one that is 200 sq m. The design is by a local engineer, and the work is being carried out entirely by community members, with funds provided by IPRCC. Construction began on April 24, 2011. When the center is complete, cooperation will turn to small-scale training with activities decided by the community. The sisal farm serves as the local liaison for the project, and has pledged to bring in appropriate trainers. Funds for training activities will be provided by IPRCC, and the farm is prepared to assist with fuel, seed, and other materials. A revolving loan program is also under discussion.

World Bank South-South Knowledge Exchange: China-Tanzania (2008 to present). The World Bank has cooperated with the IPRCC to finance bringing senior Tanzanian officials to China for exposure to China's agricultural reform experience.[81] Professor Li Xiaoyun is also very involved in this effort. For the last two years, the World Bank has operated a trilateral cooperation project with the IPRCC on policy reform for agriculture, to foster a learning process on agricultural reform. This project had its origins in December 2008, when IPRCC hosted a "Workshop on Development and Poverty Reduction in China and Africa." In 2009, IPRCC sent Professor Li Xiaoyun and several others on a visit to Tanzania. They met with the World Bank country director, who proposed some kind of cooperation, and remained very supportive of this effort. Professor Li was commissioned to write two papers on agricultural policy, and on smallholder-based agro-industrial clusters.

Both the World Bank and the IPRCC were enthusiastic about this cooperation, which involved at least one delegation to China between November 22, 2010 and December 3, 2011.[82] According to the World Bank, "the knowledge exchange raised the awareness of Tanzanian policymakers and changed some delegates' beliefs about the importance of entrepreneurship in the agricultural sector and the role of the state in promoting private sector-led growth."[83] With the departure of the World Bank officials in China and in Tanzania who were involved in the cooperation, the effort has slowed. However, in connection with this knowledge exchange effort, a Chinese team was scheduled to visit Tanzania in 2011 to do a feasibility study for Tanzania's Maize Green Basket cluster.[84]

UNIDO Tanzania-China Biogas Study Tours (2009 --). The United Nations Industrial Organization (UNIDO) is involved in an effort to provide technical expertise and build capacity in the sisal sector. [85] One of their projects is to promote biogas production on Tanzanian sisal farms. They selected a progressive sisal farm, Kitani, as their partner. A German company was contracted to work on the biogas, and they subcontracted to a Chinese firm with experience. A 150 kw trial project was launched and expanded later to 300 kw. The Chinese involvement began simply as a supplier, but Kitani requested more involvement, for example, organizing study tours to China to see how biogas is used in rural areas. A round of visits ensured. UNIDO has provided some modest funding from their common fund for commodities, etc.

Agricultural Donations. A number of Chinese companies and organizations have even more modest community and social development projects in rural areas. In Zanzibar, for example, the

Chinese women's association in Beijing has donated several tractors, agricultural tools, and office equipment valued at several hundred thousand RMB to the Zayedesa center for youth education, employment, and development. [86] The Zayedesa center was founded by the wife of a previous president of Zanzibar. Five or six years ago, a Chinese counselor officer in Zanzibar donated a poultry incubator to the center. [87]

Road Construction. The Chinese government has not financed any roads or bridges in Tanzania, but Chinese companies have been very active winning tenders for infrastructure projects like these, and have constructed at least 30 roads in the country.[88] In 1991, Sichuan Corporation for International Technical and Economic Cooperation competed with 10 other companies to win a World Bank-financed road construction tender for a 230km road in Tanzania. Chinese companies have been building roads in Tanzania ever since. The World Bank estimated in 2008 that Chinese companies won about half of the road contracts.[89] "We can do a 100km road for $30-$40 million, while others can only do it for $50 million," the Chinese economic counselor said.[90] Many Europeans raised issues of quality: "The Chinese will be a permanent headache. Now there is a tender, the Chinese might win, but will it be good quality?" asked a World Bank official. [91] A European ambassador said, "I'm not too concerned about the competition, they will come back to us, they'll see the difference. A Chinese road will have 3 cm tarmac, and a European road will have 12-15 cm."[92]

Tanzanians were more positive about the quality: "they leave a lot of good work" said an official in the Ministry of Labour, Youth, Employment and Development.[93] A senior official at the Ministry of Planning said: "Chinese construction companies are cheaper. Very good technical expertise. But there are some cases: Zanzibar Airport, a road, where there were problems. In those cases we got rid of them. Where they are not doing well, we won't use them. But I think the Chinese roads last. We have some Italian, Danish companies that have done terrible jobs."[94]

In 2008, an official Tanzanian government document stated that they were concerned about delays in road construction by Chinese companies, and that "a number of companies spelled out to finish their tasks in time and sometimes end-up with poor quality of the work."[95] The Chinese embassy estimated that Chinese companies have constructed over 30 road projects, but that all have been financed by others: World Bank, African Development Bank, and the Tanzanian government. He suggested that the problems tend to come in projects done for the Tanzanian government, many of which face significant delays in construction because the contract requires payment after certain milestones, but this does not always happen, and sometimes roads are left in an unfinished state for too long.[96]

Port of Dar es Salaam Container Berths 13 and 14 (under discussion). A feasibility study for a joint venture to build a ship repair yard at the Port of Dar es Salaam was undertaken in 1983, but apparently did not go forward.[97] The Tanzania Port Authority reported in June 2011 that it was in discussions with the Chinese government in the hope that it would finance the $523 million cost of constructing two new container berths (#13 and #14).[98] A Chinese company, Jiaotong Jituan, has been in discussion with the Port Authority about the project. “This is the idea of the Chinese companies,” said the Chinese economic counselor.[99] The Tanzanian government and the company are still seeking finance for the port expansion. Apparently the Chinese banks are not convinced that the project will be profitable enough to enable it to repay a loan. Furthermore, all loans to Tanzania must be concessional, with a 30 percent grant element and an interest rate of 2% or less, because of its HIPC status. As concessional loans from China are limited, this project may not be financed, given that China has already financed the fibre-optic project and Terminal II at the airport with concessional loans. In countries like Tanzania with poor credit histories, Chinese banks will require some guarantee that their loans will be repaid.

Yiwu Logistics Center (under discussion). A company owned by the Chinese city of Yiwu was selected by MOFCOM to construct a major logistics center in Africa, carrying out a Chinese pledge made at the 2009 FOCAC.[100] The Yiwu company was asked to make its own decision about the site. They are very interested in Dar es Salaam, because of its location as a gateway to several other land-locked countries, and because it has the largest port in East Africa, and a lively regional market (Kariakoo). The proposal is not yet final, and outstanding issues include land availability, location, and resettlement. The project would need to be close to the port, but also connect with the Tanzam railway, and the airport. The Tanzania Investment Centre Is “very much involved in this” as they allocate land for projects like this.

CHINESE FOREIGN DIRECT INVESTMENT (FDI) IN AGRICULTURE AND RURAL DEVELOPMENT, 1999-2011

Tanzania has requested that Chinese companies consider investing in water harvesting/storage and irrigation; agro-processing; revival of dormant cashew nut processing and cotton ginning factories and building new ones, and manufacture of farm implements including small tractors and power tillers.[101] Although many Chinese companies have explored investment in agriculture in Tanzania, very few have made the plunge. Although many Chinese companies have explored investment in agriculture in Tanzania, very few have made the plunge. In 2011, the Chinese economic counselor commented that investment in agriculture was very welcome by the Tanzanian side.[102] Yet “agriculture is risky here,” the former Chinese economic counselor said in 2008. “It is hard to have win-win.”[103] The largest Chinese investment in agriculture to date remains the China Agricultural Development Company’s sisal farm.

China State Farm Agricultural Company of Tanzania (CSFACOT) Sisal Farm (1999 to present). Tanzania has a comparative advantage in the production of sisal fibre. African sisal output used to be 60% of the world total, but dropped to 20% by the late 1990s. In 1999, a state-owned enterprise, China State Farm Agribusiness Corporation (now acquired by China National Agricultural Development Company) invested in two abandoned sisal farms, Rudewa Estate and Kisangata Estate, established during the colonial period, nationalized, and later privatized by the Tanzanian government. The total area leased by the Chinese firm was 6900 ha. They set up a company to run the two nearly contiguous farms: China State Farm Agribusiness Corporation (Tanzania) Ltd. Ownership of the two sisal farms was recently transferred to a new company set up by China Agricultural Development Company and China Africa Development Fund.

The project was launched on December 24, 1999. The Chinese company applied for a preferential loan from China Eximbank for US$9 million but was only granted US$ 2.4 million, as China Eximbank apparently was not convinced about the project's profitability. Their total initial investment came to US $3.5 million. The site had not been used for some time. Almost no people were living on the farm. The company renovated the buildings and machinery and spent several years replanting sisal: 96 ha in 2000, 236 ha in 2001; 337 ha in 2002, and so on. Tanzania gave preferential policies, including a reduction in its annual land rent from 600 to 200 shillings (less than 2 yuan) per hectare.

Today the plantation is working 1200 hectares. There are 4 or 5 Chinese managers and up to 1000 local workers. When the Chinese company bought the two nearly contiguous sisal farms in 1999, they invested around $1 million of their own money and borrowed $2.4 million from China Eximbank (they had applied for $9 million). The sisal project was expanded again in 2007, at a cost of about $2.2 million.[104] To date, the farm has invested $6.45 million.

The sisal farm is the second largest in Tanzania, and has over 1000 Tanzanian workers. Two or three hundred workers live onsite in free housing, with their families. A clinic is also provided. When we visited, only two Chinese managers were on site, although the farm employs eight Chinese at managerial level, and two as sales people in Dar es Salaam, but this is "not enough", according to the managing director.[105] In most years, according to the management, the farm breaks even, but in some years it suffers a loss. The farm is applying to get funding from the $1 billion clean energy project set up under the FOCAC to construct a biogas digester to generate electricity. Half of their product is exported, some to China, some to the Middle East. Half is sold in Tanzania for local processing. Although the Chinese sisal farm is not considered particularly progressive, we found no complaints about its management or labor relations.[106] A Tanzanian working with a more progressive sisal farm, Kitani, mentioned that the Chinese sisal farm was a member of the Tanzanian association of sisal farms:

> …they have not been very collaborative with local investors but [they] have made some significant investment especially in sisal farming. Therefore as investors in sensitive

> areas such as large scale agriculture … there is a lot more that can be done to include the indigenous investors … Giving an example of the smallholder contracting scheme we [Kitani] are doing this has allowed the inclusion of local farmers in addressing both civil and economic issues. I believe this approach can benefit the Chinese investors.[107]

Urafiki (Friendship) Textile Factory (late 1990s to present). As noted above, Urafiki, a former Chinese aid project, was privatized in the late 1990s as part of a debt-equity swap, and bought by a Chinese company. Urafiki processes Tanzanian cotton, and sometimes has difficulty securing enough supplies from local farmers, but does not grow cotton.

Boleyn International (2007 to present). Boleyn International, a private Chinese firm, has launched several agricultural projects and an organic honey project using smallholder farmers. Boleyn is listed by the Tanzania Investment Centre as originally proposing to establish a rubber plantation. Their 81 ha farm in Tanga was launched in 2007. After experimenting with rainfed maize for the local market, but finding they could only grow this at a loss, they decided to invest in olive trees (for oil) and Eucalyptus (a fast-growing tree that is used for telephone pole).[108] The olives will take 5-6 years to mature, while the telephone pole trees will be mature in 6-7 years. Boleyn recently won permission to develop another 243 ha of land to expand the olive grove. The permission was difficult to get, as the farm negotiates and buys land rights directly from local peasants. They plan to lease another 405 ha to grow castor oil. Boleyn is investing around $400k per annum and has no income yet from its agricultural projects. They plan to sell the trees locally and process the olives for export. The Tanga farm site has a 5000 sq m warehouse. The farm now employs scores of local workers and over a hundred in the busy season.

Honey King's Organic Honey Outgrower Scheme (2011 --). Boleyn International's forest bee-keeping and organic honey processing project under subsidiary company **Honey King Ltd.** was scheduled for launch on October 18, 2011 in Tabora, Tanzania.[109] Boleyn had earlier invested in Ethiopia but left because of foreign exchange controls that did not allow profits to be remitted outside of the country. The Tanzania project is intended to be run as an outgrower scheme, with the honey processing factory located in Kibaha. Honey King will finance the modern hives provided to local farmers, but will charge approximately $50 per hive, with the beekeepers paying for the hives over time in honey, "without interest". They will also provide training for the local beekeepers, which they believe will increase production from 20 kg per box to 50-80 kg/box. When we visited, Boleyn International's CEO was in Argentina attending an international seminar on honey. Honey King planned to send their staff to attend an October 26, 2011, training workshop for Tanzania honey companies organized by the EU, to introduce Europe's food product import policy. Boleyn International said they were also benefiting from research on Tanzania's honey industry published in a report written by a Chinese researcher Cheng Lihong(she is also the Chinese ambassador's wife).

Other Commercial Farms. We learned of another Chinese businessman from Zhejiang province who is said to have invested in a 405 ha maize farm near Lake Victoria (Mpanda) with a local Tanzanian partner. The farm is mainly managed by the Tanzanian partner, while the Chinese partner has supplied seeds. The investors have a 30 year lease on the farm, and grow maize for the local market. The same investor is also said to be purchasing sesame, cashew and tea for export to India, Vietnam and China, and has already exported up to 500 containers.[110] This project does not appear on the Tanzania Investment Center list of projects for which incentives have been granted, and thus is probably not significant enough to be benefitting from special investment incentives. The same thing is true of at least two small private Chinese horticulture farms near the airport, which are growing vegetables for Chinese restaurants in Dar es Salaam.

Suzhou Guoxin Pesticide Factory (2005 to present). A Chinese company, Suzhou Guoxin, has been manufacturing agricultural pesticides, bacteria sterilizers and herbicides in Tanzania since 2005. They source their raw materials from China, combine them in the factory, and sell wholesale. Their original plan was to source more raw materials locally (possibly pyrethreum) but shortages and electricity problems precluded this. The investment is approximately $2 million.[111]

Biofuel Farming (potential). Several European and American firms have moved to make large biofuel investments in Tanzania. Dr. Juma Ngasongwa noted in 2007 that "China wants to invest in cassava, maize and sugarcane cultivation for the production of ethanol and bio-fuel."[112]As noted above, several Chinese companies continue to discuss agriculture-related business, often in joint ventures. Among those that are still in progress are an effort to obtain a preferential export credit for machinery, sponsored by China CAMC Corporation and Tanzanian conglomerate Super Group, which hope to build a $155 million sugar plantation and mill at Wami Valley (Bagamoyo) and Pangani Rivers in the Coast Region (the project has been under negotiation since 2007).[113] Super Group is a local Tanzanian company owned by a Lebanese-Tanzanian family. In this case, it is not clear whether the Chinese partner would have simply been supplying machinery, or whether it would be an equity investor. An agreement has been signed between Super Group and CAMC, but officials were reluctant to share its contents as negotiations are still ongoing.[114] The goal of the project would be to use sugarcane to produce ethanol (energy).[115]

Dacheng Group of Jilin and Stone Resources of Beijing began to explore a cassava project (industrial starch and bio-fuels) in 2007. Although we heard from a Chinese businessman that the project has already leased land, it does not appear on the list of Chinese projects at the Tanzania Investment Centre, a necessary step to gain work permits and other incentives. A Chinese official stated that the project was still under discussion and that financing was a constraint.[116]

Mixed Farming (potential). As noted above, the Chongqing company that is implementing the agro-technology demonstration center has also been exploring investment in Morogoro Region. An NGO official who works on agricultural issues told us that he believed that the Chinese investment has already happened in Morogoro, that people have been evicted from their land, and that a Chinese company will be growing rice to export out of Tanzania.[117] It is possible that the NGO official may have been mixing the earlier media stories along this line, with the reality of the agro-technical demonstration center. Yet it is possible that an investment could happen in the future. In an interview with the *Chongqing Business Daily* in April 2009, the company told reporters that they had developed a joint venture in Tanzania of 1822 ha and were planning to build an "agricultural park" on the first 405 ha, starting in July 2009, focusing on rice, corn, eggplant, tomato, cabbage, etc. This would have been the pilot phase, while they decided whether to lease on a larger scale.[118] The company secured approval from the Tanzania Investment Centre for a mixed farming project valued at $8.06 million, which would employ 245 people.[119] However, Chongqing has not gone forward with this plan. According to a Chinese official familiar with the project, although "the company's idea is good", they apparently have decided that Tanzania is not a very promising location for foreign investment.[120]

Three Chinese companies have explored opportunities for planting vegetables and other crops in Zanzibar, but none have decided yet to go ahead. Their major concern appears to be that Zanzibar is too small a market.[121]

Rural Energy Projects (under discussion). Several rural energy projects are under discussion. China Dalian International Economic and Technical Cooperation Group won a tender to build a wind farm in Singida.[122] However, although China Eximbank expressed some interest in financing the project, discussions were still in progress during our visit and no decision had been made. Two hydro-electric power projects (Mpanga and Shuguri) have been under discussion with Chinese companies, but no decisions have been reached. If they go forward, the projects would probably be operated as independent power producers.

ENDNOTES

[1] The authors thank Nicholas Smith for his excellent assistance with this research.
[2] Interview, Chinese official, Dar es Salaam, January 8, 2008.
[3] These earlier visits were not under IFPRI auspices. Deborah Brautigam visited Tanzania in 2008 and Tang Xiaoyang in 2009.
[4] "China's African Policy," January 2006, http://english.peopledaily.com.cn/200601/12/eng20060112_234894.html
[5] Ibid. The China Africa Agricultural Cooperation Forum has involved a series of high level meetings under the FOCAC umbrella. http://www.focac.org/eng/dsjbzjhy/t725504.htm. Beijing has signed agriculture, husbandry, and fisheries cooperation agreements with Tanzania and Ethiopia, as well as a dozen or so other African countries.
[6] "Forum on China Africa Cooperation Beijing Action Plan 2007-2009," http://www.focac.org/eng/ltda/dscbzjhy/DOC32009/t280369.htm
[7] "Forum on China Africa Cooperation Sharm el Sheikh Action Plan 2010-2012," November 2009. http://www.focac.org/eng/ltda/dsjbzjhy/hywj/t626387.htm
[8] For greater detail on this, please see Deborah Brautigam and Tang Xiaoyang, "China's Engagement in African Agriculture: Down to the Countryside," *China Quarterly*, December 2009.
[9] See Deborah Brautigam, *Chinese Aid and African Development: Exporting Green Revolution*. New York: St. Martin's Press, 1998.
[10] This could always change. For commentary and links to research on this topic, see Deborah Brautigam's blog: chinafricarealstory.com and search on "land grabs".
[11] Government of Tanzania, "Agriculture," http://www.tanzania.go.tz/agriculture.html.
[12] Agricultural Sector Development Strategy (ASDS), pp. 8-9
[13] Ten Pillars of *Kilimo Kwanza* program, http://www.tzonline.org/pdf/tenpillarsofkilimokwanza.pdf.
[14] Rural Development Strategy, Prime Minister's Office, Tanzania, December 2001, pp. 30-31.
[15] Rural Development Strategy, pp. 31, 58, 66.
[16] Rural Development Strategy, p. 60.
[17] Alaba Ogunsanwo, *China's Policy in Africa 1958-1971*, Cambridge: Cambridge University Press, 1974, p. 140.
[18] George Yu, *China and Tanzania: A Case Study in Cooperation Interaction*, Berkeley, Center for Chinese Studies, University of California, 1970, pp. 54-55.
[19] A 2000 report in the *Indian Ocean Newsletter* (ION) mentioned Chinese interest in farm management and in agribusiness processing cashew nuts and fruit juice in Ruvu and Mbarali (discussed below) but we found no trace of this interest in our research. October 21, 2000 *ION*.
[20] Land Rights Research and Resources Institute (LARRRI/HAKIARDHI), "The State of the Then NAFCO, NARCO, and Absentee Landlords' Farms/Ranches in Tanzania," February 14, 2009, citing Han Bantje (1984).
[21] Alaba Ogunsanwo, *China's Policy in Africa 1958-1971*, p. 203.
[22] Personal confidential email communication, October 23, 2011.
[23] Personal email communication, member of House of Representatives, Zanzibar parliament, October 24, 2011.
[24] Wolfgang Bartke, *China's Economic Aid*, New York: Holmes & Meier Publishers, Inc., 1975, p. 183.
[25] Ai Ping, "From Proletarian Internationalism to Mutual Development: China's Cooperation with Tanzania, 1965-95," in China p. 175.
[26] Bartke (1975), p. 189.
[27] "Zanzibar President Satisfied with Visit to China," *Xinhua*, November 19, 1996. It's not clear whether this was taken up.
[28] "A Very Sticky Situation*," Indian Ocean Newsletter*, May 2, 1998.
[29] Reuban Matango, "Mtibwa Outgrowers Scheme: A model for small holder cane production in Tanzania," paper presented at UNCTAD Expert meeting: Enabling Small Commodity Producers in developing countries to reach markets 11th 13th December 2006, Palais des Nations, Geneva, p. 5.
[30] LARRRI (2009): 64.
[31] Ai Ping, "China's Cooperation," p. 177.

[32] According to a Chinese source: Xue Hong, "China-Africa Cooperation on Agricultural Development and Economy," keynote address, China-DAC Study Group on Agriculture, Food Security and Rural Development, Bamako, Mali, April 27-28, 2010.
[33] Land Rights Research and Resources Institute (LARRRI/HAKIARDHI), "The State of the Then NAFCO, NARCO, and Absentee Landlords' Farms/Ranches in Tanzania," February 14, 2009, citing Han Bantje (1984).
[34] Xue (2010): 2.
[35] This story of Mbarali is mainly drawn from Ai Ping, "China's Cooperation," pp. 177; 180; 198. Data in the graph is drawn from Mahmud Duwayri, Dat Van Tran, and Van Nguu Nguyen, "Reflections On Yield Gaps In Rice Production: How To Narrow The Gaps," papers presented at the FAO Expert Consultation on "Bridging the Rice Yield Gap in Asia and the Pacific, Bangkok, Thailand, 5-7 October, 1999.
[36] The teams began with 20 members and were reduced over time to 13 members. Email communications, Chinese Academy of International Trade and Economic Cooperation, Beijing, December 5, 2011 and December 6, 2011.
[37] LARRRI 2009: 68-69. This paragraph is based on this source.
[38] George Yu reports that the Chinese built four farmer training centers built between 1967 and 1968: Kilosa (which is in Morogoro Region), Budoba (this may be Bukoba, in Kagera Region in the north of the country), Mbulu (Manyara Region), and Mbeya (Mbeya Region). George T. Yu, *China's Africa Policy: A Study of Tanzania*, New York: Praeger, 1975, p. 84. It is not clear which exchange rate was used.
[39] *Anhui Province History of Foreign Affairs*, Chapter II, section 5, §3, mentions a "Bihawana" promotion center. It is not clear if these were the same stations that were constructed in the late 1960s.
[40] Ai Ping, "China's Cooperation," p. 178. All of the information on the Mbeya station comes from this source.
[41] Ai Ping, "China's Cooperation."
[42] Yu (1975), p. 84.
[43] Yu (1975): 82.
[44] Wolfgang Bartke, p. 184.
[45] Interview, Chinese official, January 2008, Dar es Salaam.
[46] George Yu, 1975, p. 79.
[47] Ai Ping (check).
[48] Interview, Chinese official, January 2008, Dar es Salaam.
[49] Deborah Brautigam, "Chinese Aid Database," American University, Washington, DC, March 2011.
[50] Deborah Brautigam, *The Dragon's Gift: The Real Story of China in Africa*, Oxford: OUP, 2011 (2009): 248-252.
[51] Chongqing Seed Company's website is: http://www.cqseed.com/.
[52] "Firm will grow rice in Africa," *China Daily*, May 9, 2008 http://www.chinadaily.com.cn/bizchina/2008-05/09/content_6674352.htm. Zou Hui, "Chongqing Enterprises Will Go to Africa: Grain," *Chongqing Evening News*, May 7, 2008, http://www.africawindows.com/html/feizhouzixun/feizhoushangxun/20080507/18350.shtml
[53] Interview, Chinese agricultural scientist, Sino-Tanzania Agriculture Development Company, Dakawa, Tanzania, September 21, 2011. "China-Aided Agricultural Centre in Tanzania Wins Big Applause," *This Day*, April 4, 2011.
[54] Interview, Ministry of Agriculture representative, Dakawa regional agricultural center, Morogoro, September 22, 2011.
[55] Interview, Deputy Permanent Secretary, Ministry of Agriculture, Dar es Salaam, September 29, 2011.
[56] "China-Aided Agricultural Centre in Tanzania Wins Big Applause," *This Day*, April 4, 2011.
[57] Interview, economic officer, Chinese embassy, Dar es Salaam, September 19, 2010.
[58] Interview, Policy and Planning Official, Ministry of Agriculture, Dar es Salaam, September 26, 2011.
[5959] Interview, Chinese consulate, Zanzibar, September 26, 2010.
[60] Interview, Pascal Hamuli, Project Manager, Chalimze Water Project, January 7, 2008; http://english.peopledaily.com.cn/200107/18/eng20010718_75242.html.
[61] Chinese envoy praises Tanzania-China relations ahead of Hu visit, Xinhua, February 11, 2009.
[62] A Profile of the Wami River Sub-Basin, USAID, http://pdf.usaid.gov/pdf_docs/PNADN794.pdf June 2008.
[63] Interviews, Dar es Salaam, January 2008.
[64] Ministry of Water, "Chalinze Water Supply Project," Dar es Salaam, Tanzania (n.d.) http://www.maji.go.tz/info/projects.php [accessed October 15, 2011].

[65] "China-aided Tanzania Msoga Rural Primary School Started Construction", MOFCOM, May 12, 2009, http://www.mofcom.gov.cn/aarticle/i/jyjl/k/200905/20090506241588.html
[66] "Tanzania: Special Talents School Opens in Kiteto," *Arusha Times*, September 4, 2010.
[67] Interview, Chinese official, Dar es Salaam, January 8, 2008. There may be more than three rural schools being built under this program.
[68] Interview, Chinese economic counselor, Dar es Salaam, September 19, 2911; "Tanzania Launches First Phase of National Fibre Backbone," May 29, 2010 http://www.i-policy.org/2010/05/tanzania-launches-first-phase-of-national-fibre-backbone.html.
[69] "Tanzania to Complete Fibre-Optic Link in June," Reuters, February 3, 2010. http://www.africagoodnews.com/infrastructure/ict/1377-tanzania-to-complete-fibre-optic-link-in-june.html
[70] Xinhua, November 15, 2005.
[71] "Peiyapeiya Village is affiliated to Ludaiwa, Kidmanba Town of Kilosa County. It is one of the six villages in Ludaiwa, with four natural villages, having population of 2481 and covering an area of some 4000 hectares. There are 454 peasant households and 581 labours in the village. The villagers are mainly engaged in crop farming including corn, paddy and sunflower." "IPRCC Research Group Conducted Field Research in Tanzania," IPRCC Press Release, January 19, 2011. http://www.iprcc.org.cn/front/article/article.action?id=2131
[72] "Our salvation is in agriculture – JK," 11 March 2009, IPP Media. Add weblink.
[73] Centre for Chinese Studies, *Evaluating China's FOCAC commitments to Africa and mapping the way ahead* Report prepared for the Rockefeller Foundation, January 2010, p. 112.
[74] Interview, Deputy Permanent Secretary, Ministry of Agriculture, Dar es Salaam, September 29, 2011.
[75] Telephone interview, China Development Bank official, Dar es Salaam, Tanzania, September 29, 2011.
[76] Centre for Chinese Studies (2010), p. 112.
[77] Personal email communication, Professor Li Xiaoyun, September 23, 2011.
[78] Interview, Managing Director, Sisal farm, September 20, 2011.
[79] IPRCC Press Release, 2011.
[80] The Chinese embassy also expressed interest in supporting IPRCC's efforts to do small-scale demonstration activities for poverty reduction. "Chinese Ambassador to Tanzania Visited IPRCC," Mar 17, 2011 http://www.iprcc.org.cn/front/article/article.action?id=2237 [accessed September 19, 2011].
[81] World Bank, "High-Level Tanzanian Delegation Visits China to Study Poverty Reduction and Agricultural Reforms," South-South Knowledge Exchange Hub, World Bank, September 28, 2011.
[82] Interview, World Bank economist, Dar es Salaam, September 27, 2011. The Permanent Secretary in the Prime Ministers office, Mr. Peniel Lymio, was the key counterpart on the Tanzanian side. The cost of the mission was US$ 131,000.
[83] World Bank, "High-Level Tanzanian Delegation," p. 1.
[84] World Bank, "High-Level Tanzanian Delegation," p. 2.
[85] Interview, UNIDO, Dar es Salaam, September 29, 2011.
[86] "Project: Self Employment and Entrepreneurship", Zayedesa, 2009 http://zayedesa.org/z_selfempl.html [accessed December 5, 2011]
[87] Interview, Chinese official, Zanzibar, September 26, 2011.
[88] Interview, Chinese economic counselor, Dar es Salaam, September 19, 2011.
[89] Interview, World Bank official, Dar es Salaam, January 8, 2008.
[90] Interview, Chinese economic counselor, Dar es Salaam, January 8, 2008.
[91] Interview, World Bank official, Dar es Salaam, January 8, 2008.
[92] Interview, European ambassador, Dar es Salaam, January 10, 2008.
[93] Interview, Official, Ministry of Labour, Employment, Youth and Development, Dar es Salaam, January 8, 2008.
[94] Interview, Official, Ministry of Planning, Dar es Salaam, January 11, 2008.
[95] Department of Asia and Australasia, Ministry of Foreign Affairs, Tanzania, "Sino Tanzania Relations: Brief," p.
[96] Interview, Chinese official, Economic Office, Chinese Embassy, Dar es Salaam, September 19, 2011.
[97] "China to Send Expert Teams for Feasibility Study for Joint Ventures with Tanzania," *Xinhua*, August 14, 1983.
[98] http://www.tanzaniaports.com/
[99] Interview, Chinese official, Dar es Salaam, September 19, 2011.

[100] Interview, Chinese economic counselor, Dar es Salaam, September 19, 2011; Interview, Ministry of Foreign Affairs and International Cooperation, Asia Desk, Dar es Salaam, September 29, 2011.
[101] Department of Asia and Australasia, Ministry of Foreign Affairs & Int'l Cooperation, and External Finance Department, MOFEA, "Brief on the People's Republic of China in Respect of the State Visit to China by the president of the United Republic of Tanzania, H. E. Jakaya Mrisho Kikwete," March 2008.
[102] Interview, Chinese economic counselor, Dar es Salaam, September 19, 2011.
[103] Interview, Chinese official, Dar es Salaam, January 8, 2008.
[104] Sisal Expansion, Tanzania Investment Center, January-March 2007. CSFAC was listed as owning 65%, with Jia Qing Quan as 35%.
[105] Unless otherwise noted, information on the sisal farm comes from our site visit and interviews with the managing director, Guan Shanyuan, Kilosa, Morogoro, September 22, 2011.
[106] We asked about the sisal farm in a number of interviews.
[107] Personal email communication, Kitani Sisal Farm, October 5, 2011.
[108] Interview, official, Boleyn International, September X, 2011; telephone interview, official, Boleyn International, September 29, 2011.
[109] This section relies on interview, Boleyn International official, Dar es Salaam, September 27, 2011 and telephone interview, Boleyn International official, Dar es Salaam, September 29, 2011.
[110] Interview, local Chinese businessmen, Dar es Salaam, September 28, 2011.
[111] Telephone interview, official from Suzhou Guoxin, September 30, 2011.
[112] "Tanzania to Host China-Africa Business Forum 1 December," BBC, November 5, 2007.
[113] CAMC website, http://www.camc.com.cn/english/html/xwgg/142240773.html; SINOMACH website, http://www.sinomach.com.cn/templates/T_news_en/content.aspx?nodeid=288&page=ContentPage&contentid=3022; CAMC is a subsidiary of Chinese state-owned conglomerate Sinomach. http://www.sinomach.com.cn/templates/T_news_en/content.aspx?nodeid=337&page=ContentPage&contentid=2920; http://camce.com.cn/en/news/gsxw/1299589638-479.html Accessed September 21, 2011.
[114] Interview, Super Group, Dar es Salaam, September 29, 2011.
[115] Interview, Deputy Permanent Secretary, Ministry of Agriculture, Dar es Salaam, September 29, 2011.
[116] Interview, Chinese counselor's office, Dar es Salaam, September 19, 2011; Interview, Chinese Business Council, September 20, 2011.
[117] Telephone Interview, NGO official, Arusha, Tanzania, September 27, 2011.
[118] "Kinds of Food to Make Money Come to Chongqing Enterprises Losing Grain Laos," Chongqing Business Daily, April 2, 2009. http://cq.cqnews.net/jjxw/zhcj/200904/t20090402_3142349.htm
[119] "Investments with Chinese Interest from 1990 – December 2010," Tanzania Investment Centre, September 2011.
[120] He believed that services were poor, corruption high, the welfare system for workers was over protective and that foreign investors experience systemic extortion from government officials. Interview, Chinese official, September 21, 2011.
[121] Interview, Chinese official, Zanzibar, September 26, 2011.
[122] "Tanzania: China Group Shows Interest in Singida Farm Project," *The Citizen* (Dar es Salaam) March 2, 2011.