

### **China's Agricultural Technology Demonstration Center (ATDC) in Africa**

Since the establishment of FOCAC in 2000, China has made agriculture one of its priority for sectors for development assistance to Africa. Recognizing the importance of agriculture to the economy of African countries and considering the significant contribution of agricultural productivity to addressing African countries' food insecurity and rural poverty, it comes as no surprise that African countries have welcomed Chinese assistance in agriculture and continues to demonstrate willingness to deepen agricultural cooperation with China.

Among the different forms and means through which China has engaged with Africa for the modernization of African agriculture, Agricultural Technology Development Centers (ATDCs) are one prominent feature of China's agricultural assistance to Africa. Together with Chinese private and public investments in agriculture, technical cooperation projects, teaching programs and the dispatch of agricultural experts to African countries, Chinese ATDCs have been promoted with the aim to transfer Chinese agricultural technology experience and expertise to African countries while also creating agri business opportunities for Chinese firms in the host countries.

As thoroughly explained and illustrated by Deborah Brautigam in her book, *Will Africa Feed China?* Chinese ATDCs perfectly exemplify the Chinese approach to development cooperation which is characterized by a combination of aid, business, and diplomacy. In the case of the Chinese ATDCs in Africa, aid and diplomacy come into play with the active participation of the Ministry of Commerce of the People's Republic of China that provides funds to Chinese businesses or institutions for the creation of ATDCs in African countries. The business aspect of the Chinese ATDC is then manifest in the participation of Chinese businesses that are usually the entity responsible for the construction and the management of the ATDCs. As announced at the 2006 FOCAC Summit in Beijing, Chinese ATDCs are promoted not only as a platform to transfer agriculture technology to African counterparts, but also as a platform to ensure the long-term financial sustainability of the Chinese firms involved and as a way to promote other investment and trading opportunities.

From 2006 to 2014, 24 Chinese ATDCs have been built in 23 African countries and other ATDCs are in various planning stages. Research and studies have been conducted primarily by scholars and researchers at the Center for Africa Research Initiative (Deborah Brautigam, Hezron Makundi, Tang Xiaoyang, Yunnan Cheng, David G. Landry), Future Agricultures (Tang Li Xia, Xiaoyun Li, Gubo Qii, Xu Xiuli, Ian Scoones), and the London School of Economics (Chris Alden, Lu Jiang). These have focused on analysis and evaluation of country case-studies on the impacts of the Chinese ATDCs in Africa, and have pointed out both strengths and the weaknesses of this Chinese agriculture assistance

model.

On the one hand, some Chinese ATDCs have proven effective in transferring agriculture technology to African local communities and have successfully created business opportunities for local firms. Successful examples of Chinese ATDCs in Africa include the ATDC for promotion of hybrid rice technology in Madagascar and Liberia and the ATDC for the promotion of soybean cultivation in Mozambique. Key elements that ensure the success of these projects include active engagement of the African national and local governments and different local stakeholders in the development and management of the ATDCs from project inception. However, there have also been some failures. The ATDC for the promotion of rice technology in rural Tanzania highlights the main shortcomings of Chinese ATDC, such as neglect of local stakeholders' needs and failure to encourage their engagement, the difficulties in overcoming language and cultural barriers, and provision of inaccessible and inappropriate technologies.

In sum, considering the important role that China can play in sharing its agriculture technology expertise and experience with African countries, it is key to ensure that Chinese ATDCs in Africa will be successful in achieving their dual-goal of transferring agriculture technology to African countries while also promoting business opportunities for Chinese firms. Only further research can ultimately shed light on the effectiveness and impacts of Chinese ATDCs in modernizing African agriculture and promoting Chinese agribusiness investments in Africa. Eventually, the results of this research will help China to enhance its agriculture assistance model to Africa and will ensure that China and Africa cooperation in agriculture modernization will be effective and mutually beneficial.

### **Curated reading list and guide to Chinese Agriculture Technology Demonstration Centers (ATDCs) in Africa**

The suggested readings on Chinese Agriculture Technology Demonstration Centers (ATDCs) in Africa comprise general readings on the topic, which provide an overview of the history, the politics and the role played by Chinese Agriculture Technology Development Centers (ATDCs) in the context of China's engagement in agriculture in Africa, and 11 country-case studies.

This bibliography lists in a chronological order 18 peer-reviewed articles that are highlighted separately in two groups. The first group comprises journal articles and working papers that feature recent research on the history and narratives (Brautigam and Tang, 2009; Sun, 2011; Buckley, 2013; Alden, 2013), politics (Scoones et al., 2016; Xu et al., 2016) and challenges and effectiveness (Zhang et al., 2016) of Chinese Agricultural Technology Demonstration Centers (ATDC) in Africa. The second group consists of 11 country specific case- studies that include: Angola (Jinyang & Wenping, 2014), Ethiopia (Alemu et al., 2015; Gubo Qi et al., 2015), Madagascar (Chen and Landry, 2016), Mozambique (Jinyang & Wenping, 2014; Chichava and Fingerhann, 2015; UNDP, 2018), Rwanda and Uganda (Lawther, 2017), Tanzania (Makundi, 2017), Zimbabwe (Tang et al., 2015; OECD, 2012) and West Africa (Santi & Weigert, 2015).

The two larger resources included in this reading list are CARI and Future Agriculture's.

CARI has published extensively on China's engagement in agriculture in Africa. Specifically, CARI has published one country-case study on the impact of the Chinese ATDC in Tanzania aimed at diffusing Chinese rice technology in rural areas (Makundi, 2017) and a working paper on the Chinese hybrid rice technology demonstration center in Madagascar (Chen and Landry, 2016). The CARI director Deborah Brautigam's book, *Will Africa Feed China?* remains the most comprehensive resource on China's agriculture engagement in Africa. This book provides several country specific case-studies on the experience of China's Agricultural Technology Demonstration Centers (ATDCs) in Africa based on rigorous field research and evidence-based information.

The "China and Brazil in African agriculture" hub of the Future Agriculture's research consortium, which also provides an extensive working paper selection, policy briefs and a blog on the topic of China's engagement in agriculture in Africa, has published 4 working papers on the impact and effectiveness of Chinese Agriculture Technology Demonstration Centers (ATDCs) in Ethiopia, Mozambique and Zimbabwe.

Finally, 3 reports are also included in this reading list due to their relevance in providing a critical analysis on Chinese Agricultural Technology Demonstration Centers (ATDCs) in Mozambique and South Africa (Jiang et al., 2016), Ivory Coast, Ethiopia, Senegal and Togo (Gabas and Ribier, 2015) and a broader evaluation of the challenges and opportunities of Chinese ATDC in Africa as an effective means through which China can contribute to agriculture modernization in Africa (Cheng et al., 2018).

### **Peer-Reviewed Articles/Working Papers on Chinese ATDC in Africa**

1. Bräutigam, Deborah A., and Tang Xiaoyang. "China's engagement in African agriculture: "Down to the countryside"." *The China Quarterly* 199 (2009): 686-706.
2. Helen Lei Sun. "Understanding Chinese Agricultural Investments in Africa". Occasional Paper No.102. China in Africa Project, SAIIA (2011).
3. Alden, Christopher. "China and the long march into African agriculture". *Cahiers Agriculture* 22.1 (2013): 16-21.
4. Buckley, Lila. "Narratives of China-Africa Cooperation for Agricultural Development: New Paradigms?". CBAA, Future Agriculture's. Working Paper 053 (2013).
5. Zhang Y., Zheng Y., Liu Z., Li Q.R. and Jingyi Z. "Technical Promotion and Poverty Reduction: A Review of China's Efforts in Africa". *Ann Agric Crop Sci.* 1.2 (2016).

6. Xu, Xiuli, et al. "Science, Technology and the Politics of Knowledge: The Case of China's Agricultural Technology Demonstration Centers in Africa". *World Development* 81 (2016): 82-91.
7. Scoones, Ian, Kojo Amanor, Arilson Favareto and Gubo Qi. "A New Politics of Development Cooperation? Chinese and Brazilian Engagement in African Agriculture". *World Development* 81 (2016): 1-12.

### **Country Specific Case-Studies Articles/Working Papers**

1. Organization of Economic Cooperation and Development (OECD). "Effective Support for Agricultural Development: A Joint-Study Visit to Zimbabwe". China DAC-Study Group (2012).
2. Organization of Economic Cooperation and Development (OECD). "Effective Support for Agricultural Development: A Joint-Study Visit to Tanzania". China DAC-Study Group (2012)
3. Zhou Jinyan & He Wenping. "Chinese Cooperation in Mozambique and Angola: a Focus on Agriculture and Health". BPC Papers 2.3 (2014).
4. Santi, Emanuele & Maxime Weigert. "China-Africa Co-operation Beyond Extractive Industries: The Case of Chinese Agricultural Assistance in West Africa". SAIIA Policy Insight 30 (2015).
5. Chichava, Sergio and Natalia N. Fingermann. "Chinese and Brazilian agricultural models in Mozambique. The case of the Chinese Agricultural Technology Demonstration Center and of the Brazilian ProALIMENTOS programme". CBAA, Future Agriculture's. Working Paper 112 (2015).
6. Qi Gubo, Yu Lerong, Dawit Alemu, Seth Cook and Li Xiaoyun. "Copying the Extension System of China and Beyond: Implementing the Chinese Agriculture Technology Demonstration Centre in Ethiopia". CBAA, Future Agriculture's. Working Paper 128 (2015).
7. Alemu, David, Seth Cook and Gubo Qi. "Chinese Agricultural Expertise Support in Ethiopia: Approaches, Motives and Perspectives". CBAA, Future Agriculture's. Working Paper 114 (2015).

8. Chen Yunnan and David G. Landry. "Where Africa Meets Asia: Chinese Agricultural and Manufacturing Investment in Madagascar". CARI Working Paper 5 (2016).
9. Lawther, Isaac. "Why African countries are interested in building agricultural partnerships with China: lessons from Rwanda and Uganda". *Third World Quarterly* 38:10 (2017): 2312-2329.
10. Makundi, Hezron. "Diffusing Chinese rice technology in rural Tanzania: Lessons from the Dakawa agro-technology demonstration center". CARI Working Paper 12 (2017).
11. "Innovation and Practice of China's Agricultural Assistance: A Case Study on China's Agricultural Technology Demonstration Centre in Mozambique," China International Development Cooperation Agency (CIDCA) and United Nations Development Program (UNDP). (2018).
12. Tang Lixia, Li Xiaoyun, Mukwereza Langton. "Blurring the Lines between Aid and Business: an Ethnographic Study of the Chinese Agricultural Technology Demonstration Center in Zimbabwe". *China: An International Journal* 16.1 (2018): 23-44.

## Reports

1. Gabas, Jean Jacques and Vincent Ribier. "Summary of four case studies on Chinese interventions in the agricultural sector of Ivory Coast, Ethiopia, Senegal and Togo". CIRAD CTA. Report n. 2/6 (2015).
2. Lu Jiang, Angela Harding, Ward Anseeuw, Chris Alden. "Chinese Agriculture Technology Demonstration Centers in Southern Africa: the New Business of Development". *The Public Sphere* (2016): 1-36.
3. 陈志钢、Ousmane Badiane、张力文、Julia Collins、周云逸. "China-Africa Agriculture Modernization Cooperation: situation, challenges and path ahead". 国际食物政策研究所 (IFPRI) (2018).

## Books

1. Brautigam, Deborah. *Will Africa feed China?*. Oxford University Press. 2015.