

# Policy Briefing

## Trilateral cooperation in agriculture: achievements and lessons from AgriTT



The AgriTT programme is an innovative trilateral initiative between the UK Department for International Development; the Chinese Government; and the Governments of Malawi and Uganda with the Forum for Agricultural Research in Africa. The programme facilitates the sharing of successful experiences in agricultural development with developing countries to improve agricultural productivity and food security.

### Piloting technology transfer along the value chain

**Investment in African agriculture remains well below average global levels and currently falls short of achieving the United Nation's 'Global Goals for Sustainable Development'.**

While the potential benefits of trilateral partnerships to promote learning and accelerate agricultural technology transfer are often talked about in theoretical terms, there is very little empirical evidence exploring how they work in practice. Two pilot projects and a Research Challenge Fund (RCF) run under the Working in Partnership for Agricultural Technology Transfer (AgriTT) programme between 2013 and 2017 provide new lessons to support further investment in trilateral cooperation. The programme also supported a range of knowledge sharing and communication initiatives.

**AgriTT was a pioneering trilateral agriculture partnership between the governments of the UK, China, Uganda and Malawi as well as FARA.** The pilot projects aimed to transfer appropriate Chinese agricultural technologies from production to processing and value addition in order to improve agricultural productivity and food security in Uganda and Malawi. The AgriTT Research Challenge Fund supported two year research projects to generate new thinking and practice on technology transfer and value chain development. Each research project had a Chinese, UK, and African or South-East Asian research partner.

**In Uganda, the pilot aimed to demonstrate the viability of supplementing the role of cassava as a widespread staple food crop with that of an industrial food commodity with many uses, transferring appropriate Chinese technology and enhancing**

**capacity along the value chain.** The pilot focused on three main components of the cassava value chain: 1) applying Chinese agronomic practices in cassava production, including mechanisation; 2) improving cassava processing to reduce waste and produce high-quality cassava flour; 3) developing value-added cassava products and investments in related businesses.

**The Malawi pilot project aimed to improve and expand aquaculture practices for tilapia (a native fish) and to decrease the cost of production by increasing efficiency and lowering the costs of inputs such as feed and fingerlings.** The pilot focused on three main components for improving the tilapia value chain: 1) improving fingerling production and quality; 2) commercialising and improving feed; and 3) improving the 'on-growing' stage of tilapia farming from fingerlings to table fish.

**The Research Challenge Fund aimed to support technology transfer through collaborative research with an applied focus.** Projects addressed one of three different themes: 1) Critical agricultural technologies; 2) Innovations in value chains; and 3) Innovations in knowledge sharing and communication. Two of the projects were targeted research projects linked to the AgriTT pilot projects

**Through these projects, AgriTT brought together Chinese technology experience with the UK's understanding of effective aid delivery in an integrated, whole-value-chain approach to technology transfer.** The assumption behind this value-chain approach was that technological innovation alone is not enough to impact poverty – technologies also must be linked with producers, markets and consumers, and encourage added-value services.



Agricultural  
Technology  
Transfer

## What has AgriTT achieved?

**AgriTT was an ambitious project operating within a complex environment. While agricultural technology transfer is always a challenging process, requiring patience, flexibility and time, the challenges of the AgriTT pilots were particularly daunting given the ambitious project design, the limited timeframe, and the innovative nature of both the partnerships and the holistic value-chain approach.** Despite this, informants reflected that the programme did largely play to the distinct strengths of the UK, China, and Uganda and Malawi, allowing it to transfer appropriate agriculture technology for key points in the value chain in uniquely effective ways. Key achievements include:

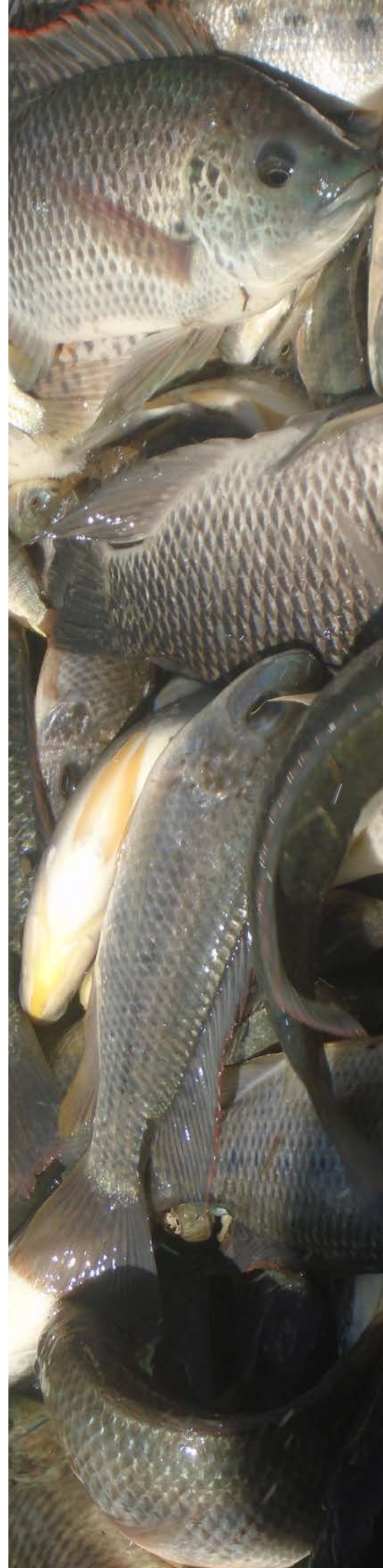
**In Uganda,** Chinese technical assistance experts (TAs) provided technical input on a range of cassava agronomy best-practice; mechanised planting and harvesting was demonstrated across multiple districts, with evidence of yields being improved three-fold; the project worked with a Ugandan co-investor to develop a cassava drying and processing line from China, to help address the challenge of drying cassava in the rainy season, a major barrier to development of the value chain; nurseries were set up to sustainably supply improved cassava; and cassava food products were developed in partnership with two entrepreneurs.

**In Malawi,** Chinese TAs provided technical input and demonstration on fingerling and on-growing production, with on-growing technologies tested by farmers; infrastructure was substantially rehabilitated and improved in key government and research institutions and field stations; Chinese large-pond technology in combination with a package of Chinese practices saw yields improve five-fold; training manuals and a software tool for adjusting diets were developed; and experiments were conducted on replacing imported ingredients

and improving commercial diets.

**The RCF** supported 11 trilateral research projects, all of which contributed new knowledge developed through collaboration. One project tested a Chinese rodent contraceptive technology in Tanzania, which - subject to collection of additional data - is well positioned to apply for regulatory approval and uptake through a public-private partnership. Another project developed and tested an application and server platform (AgriAPP) that can now be used by agricultural extensionists in Cambodia to share information with agricultural experts, and access an information database. The RCF facilitated the development of new partnerships that will continue beyond the life of the RCF itself with Memoranda of Understanding already signed by some partners.

**The programme's achievements included these tangible activities, as well as less visible but equally transformational impacts.** These include development of strong networks amongst those involved, suggesting that mutual learning and exchange will continue among China, the UK and the developing countries. The pilot projects transformed the way in which cassava and tilapia are perceived in the pilot countries - opening up previously unrealised commercialisation possibilities. In this way, AgriTT has carved out a unique role for the private sector within an aid programme.





### What are the main lessons for trilateral cooperation?

While many researchers have speculated about the potential benefits of trilateral partnerships, AgriTT was among the first to actually test trilateral modalities with China — and thus to generate insights from practice.

One of the cornerstones of the trilateral partnership model is the idea that “Southern” technologies are more appropriate to the needs of developing countries. However, experience shows that on the Chinese side, technologies that may be suitable are not always transferred effectively; and there is limited research on how to adapt China’s experience to specific regions and countries. Thus, there is an assumed crucial role for third countries such as the UK to play in successfully transferring and adapting technologies.

Stakeholders in AgriTT widely advocate these benefits from the trilateral experience. They point to Chinese technical assistance as a key highlight of the AgriTT pilots, and described experiences of collaborative co-innovation of technologies. This contrasts with studies of other Chinese agricultural aid projects in Africa, for example, in which beneficiaries have tended to emphasise communication barriers and other management problems that hinder technology transfer.

Stakeholders across both projects also emphasised the crucial role that the UK played in transferring technology from China to low-income countries — and thus, the value of the trilateral partnership model. They appreciated the UK’s contribution of rigorous research to the pilots, grounded feasibility studies, and focus on designing interventions based on clear market demand.



## Policy recommendations

- **AgriTT has demonstrated that trilateral cooperation can be an effective mechanism to deliver technology transfer.** The combination of Chinese technology expertise, with UK project management, and developing country demand and knowledge has delivered clear results on the ground. Donors and policy-makers should consider using the mechanism when assessing different options for development interventions.
- **Trilateral cooperation can take a range of different forms. AgriTT combined pilot demonstration projects, collaborative research and knowledge sharing activities.** Development partners should reflect on the most appropriate mix of interventions to meet identified development needs and objectives. It is important to clearly identify what each partner brings to the intervention.
- **Trilateral cooperation entails a certain level of transaction costs, particularly in the early stages, as relationships are established, and consensus is built around strategic objectives or implementation plans.** Over time these costs become less significant, and the efficiency of the partnership should also increase. An adequately resourced PMO with staff in different partner countries can play a key role in coordinating the cooperation. Project targets may need to be adapted in these early stages, and project monitoring will need to be flexible to focus both on results and collection of evidence, as well as qualitative learning that informs adaptations in project implementation.
- **AgriTT demonstrated the value of collaborative governance mechanisms.** Decisions were taken on a consensus basis by steering committees where all three parties were represented. Likewise project plans were drawn up in a participatory fashion and approved by the trilateral partners. These approaches are recommended for future initiatives.
- **For technology transfer projects it is important to build in sufficient time to allow for needs identification, action, learning and adaptive responses.** Where procurement of equipment is part of the technology transfer it is essential to plan sufficient time to research technology options, develop and review business plans and technical assessments, and to allow time for procurement, installation, testing and adaptation.
- **AgriTT demonstrated the value of using Chinese technical assistance experts, who can bring a range of rich and relevant experience from development of Chinese commodity value chains.** It is important to identify the correct mix of long-term experts who build up more in-depth knowledge of the host country, with shorter, targeted TA interventions. TA need to be recruited with care to ensure that they have good language and communication skills and adaptability to working overseas as well as technical skills. TA also benefit from good project coordinators working with them to facilitate their work.



The cooperation has been like an African three-legged stool, which has allowed the weight of project delivery to be equally distributed amongst the cooperating entities – facilitating the effective delivery of the project components

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