Policy Briefing

Why invest in African aquaculture?

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

The AgriTT Research Challenge Fund supported two year research projects to generate new thinking and practice on technology transfer and value chain development. Each project had a Chinese, UK, and African or South-East Asian research partner.

Agri TT Agricultural Technology Transfer

Key success factors are a visible business model, individual commitment and public sector support

Aquaculture production is growing rapidly in some African countries – but in others the industry has stalled. In Malawi, for example, experts have long assumed that aquaculture value chains have great potential for development, and in 2012 the sector was identified by the government as a key area for wealth generation. Yet, despite favourable environmental conditions and a steady demand for fish, aquaculture is still at an early stage of development in Malawi.

Globally, 2014 was a significant year for aquaculture – it was the first year when more fish were produced for human consumption through farming than through capture fisheries, representing a 20-fold increase in aquaculture production over the past 50 years. China has been at the forefront of this expansion, producing two-thirds of the world's farmed fish. By comparing specific value chains, this project aimed to identify what makes aquaculture the entrepreneur's investment of choice in China, Ghana and Nigeria, but not in Malawi.

To identify the drivers of growth, the research teams carried out field work along the value chain. Stakeholder interviews were based on jointly developed semi-structured questionnaires targeted at representative fish culture enterprises in each country, including hatcheries, fish farmers, wholesalers, retailers, processing factories, consumers and feed mills. Although the aquaculture value chains in China and Nigeria are more complex than in Ghana and Malawi, they are similar when it comes to domestic markets. The success factors are therefore not linked to the structure of the value chain, but to its governance and operations.

China has a rigorous and well developed system of quality management for inputs, particularly for fingerlings (juveniles). Hatcheries and fingerling producers have to be registered to a quality standard and are inspected regularly. Likewise, feed manufacturers produce high-quality feed, which is closely regulated. While fingerling production is not regulated in Nigeria or Ghana, market forces ensure that those producing an inferior product are likely to go out of business. In Malawi, fingerling production is less organised and much less quality-sensitive. The market is also skewed by the government practice of distributing free fingerlings through NGOs, which acts as a disincentive to private producers. The lack of regulation of fingerling production in Malawi negates any gains made through breeding programmes.

First-hand experience is important. The project enabled a group of Malawian farmers to visit Eriwe Farm Village, an integrated aquaculture cooperative in Ijebu Ode, Nigeria, to investigate practices that could be replicated or adapted to the Malawian context, such as catfish farming.

The comparative work undertaken in the four countries defined the following key elements of success.

- A demonstrably viable business model – in Nigeria, aquaculture is seen as aspirational and smallholder farmers are queuing up to become cooperative members because the successful value chains are clearly visible.

- Committed individuals – those operating in successful value chains are professional, dedicated and passionate about aquaculture. This means that farms are well managed and profitable, the value chain is resilient, and actors in the value chain actively seek knowledge and innovation, and develop a voice. The net impact (as seen particularly in Nigeria) is that the value chain becomes an investment of choice.
- Location is important – in Nigeria, China and Ghana, productive activities are clustered and located close to areas of high population, but this is not the case in Malawi.
- Value chain governance is critical – this includes inputs (quality, choice and market intelligence); research linked to innovation and value addition; demand-driven extension, the driving factor being professionalism; and public–private partnerships based on commitment to achieving mutual goals.
- A responsive and supportive public sector – providing an enabling environment that promotes sustainable, transparent growth, ensures the quality of inputs, and works closely with the private sector.

Policy recommendations

- **Government support to create an enabling regulatory environment will provide the foundation for attracting investment.** An enabling environment is needed to ensure the quality of inputs and the equitable and sustainable use of natural resources. Building on this foundation, the responsibility for demonstrating a viable business model lies with the private sector.
- **It is critical to visibly demonstrate the viability of the business model.** For example, one of the Malawian farmers who visited Nigeria has now started to produce catfish, with plans to initiate trial exports to South Africa in the near future. Results from initiatives like this should be monitored and disseminated. The project has produced an 8-minute video demonstrating the potential for successful aquaculture in Africa: https://youtu.be/NSfify1gclo.
- **Catfish culture is potentially a more suitable option than tilapia production for small-scale aquaculture in Malawi, and should be trialled.** Catfish are much more resilient to less rigorous farming regimes, and are native in Malawi so there is no issue with the import of exotic species. There are potential domestic and regional export markets, including a large potential market in South Africa serving the West African diaspora.
- **Location is an important success factor.** Public–private partnerships are particularly effective in developing aquaculture zones or clusters. Southern Malawi has the highest population density in the country and good climatic conditions for aquaculture. The possibility of developing aquaculture using the Eriwe model should be explored in the Lower Shire Valley – the region's major investment programme, the Shire Basin Development Programme, has already expressed an interest.
- **Voice is also important.** Ghana and Nigeria both have influential producer associations, and the current performance of aquaculture in these countries raises their level of influence. So a virtuous circle emerges – a growing aquaculture sector gains national significance; an increasingly professional fish farming community is better able to contribute to creating the environment for growth; and the government is increasingly incentivised to be responsive to the needs of the sector.

I went to Nigeria last year, I learnt – wow – that was a shock to me. Because when I saw the extent, and the progress that Nigerians are doing, I said, that is a revolution.

Lucky Penumlungu, Malawian fish farmer

Partners

China
Freshwater Fisheries Research Center (FFRC), Chinese Academy of Fishery Sciences, Wuxi

University of International Business and Economics, Beijing

Ghana
Water Research Institute (WRI), Council for Scientific and Industrial Research, Accra

Malawi
Lilongwe University of Agriculture and Natural Resources

Nigeria
Sustainable Environment and Fisheries Foundation (SEFFA), Abuja

UK
Natural Resources Institute (NRI), University of Greenwich

Contact

John Linton
Lead Researcher
J.Linton@greenwich.ac.uk

Elle Harrison
Programme Coordinator
ElleH@landell-mills.com

www.agritt.org
twitter.com/agriTTprogram

UKaid from the British people
Ministry of Commerce and Ministry of Agriculture
FARA