

FARMING FOR FISH

Success factors for expanding Africa's aquaculture sector

Aquaculture is the fastest growing food sector in the world, accounting for more than half of the fish and seafood products consumed globally in 2021. Beyond improving food security, the sector holds significant potential to boost employment and rural development. However, aquaculture remains in its infancy across most of Africa. Production is highly concentrated in a few countries—notably Egypt, which ranks among the world's largest producers. Increasing demand for fish products promises high potential for growth. However, purposeful policy shifts are needed to transform subsistence operations into commercial enterprises. This policy brief draws on insights from Egypt, Nigeria and Kenya to identify success factors that could contribute to scaling the sector across the continent.

Egypt's relationship with aquaculture stretches back millennia. Domestic demand for fisheries products, in particular tilapia, is strong. A deep dive into Egypt's aquaculture reveals useful lessons for other African countries looking for strategies to boost domestic production. While Egypt has been successful in establishing facilities in harsh and dry environments, challenges related to sustainability of production remain, such as water use and pollution.

Nigeria is Africa's second largest producer of aquaculture products, cultivating mainly African catfish in line with local preferences. Nigeria provides an interesting example of a country with extremely high demand that is unable to be satisfied by its domestic fisheries industry and imports combined.

Kenya is the continent's eighth largest producer, mainly of tilapia followed by African catfish. While production volumes are still low, Kenya has achieved strong relative growth over the past decade, driven in large part by cage fisheries. Nevertheless, Kenyan producers have struggled to keep up with demand.

Lessons from the country studies

Production trends

In all three countries, demand for fish and seafood products outstrips supply and shortfalls are being met by imports. This reality presents an opportunity to boost production levels and improve linkages to consumers.

POLICY RECOMMENDATION

In addition to increasing production capacity, promote investments in transportation and cooling infrastructure, quality control, and trade integration.

Policies and governance frameworks

Egypt demonstrates how sector-specific national frameworks and strategies that are aligned with international and regional policies create a robust foundation for sustainable aquaculture growth. These must be supported by government institutions to ensure intentions are equipped to be actioned.

POLICY RECOMMENDATION

Implement dedicated policies and related institutions to promote the aquaculture sector, based on a sound understanding of supply and demand structures.

Natural resources

All three countries are well endowed with natural resources (including marine and freshwater resources) that can support a productive aquaculture sector, but the full potential remains underutilized. Marine aquaculture is underdeveloped in all three countries despite long shorelines. Government support will be required to strategically develop the underused areas.

POLICY RECOMMENDATION

Map high-potential areas for aquaculture development and develop strategies for expansion in these areas, based on an assessment of geophysical and market opportunities, challenges, competition with other sectors, and sustainability considerations.

Technologies and innovation

While all three countries have been making progress in the adoption of innovative solutions in the aquaculture sector, the potentials of technological progress both at the production level and along the value chain remain underutilized.



POLICY RECOMMENDATION

Increase local research capacities to develop new or adapt existing technologies to improve productivity and commercialization of the aquaculture sector.

Feed and seed

Local production of feed and seed is generally insufficient. In particular shortfalls of feed need to be met with expensive imports. The quality of inputs is also a concern for fish farmers, as is access to ingredients for feed manufacturers and hatcheries.

POLICY RECOMMENDATION

- Invest in decentralized feed and seed production to ensure easy access, lower input prices and income generation in rural areas, supported by quality control and capacity building initiatives.
- Promote breeding programmes for locally farmed fish species and foster related knowledge exchanges between countries.

Markets

The aquaculture sector is primarily focused on domestic markets and heavily concentrated on species of local preference. Quality requirements in higher-income markets prevent producers from taking advantage of market opportunities. Supply gaps are generally closed by imports from non-African countries which undermines the development of the local industry.

POLICY RECOMMENDATION

Foster national, sub-regional, and continental market integration to benefit from market opportunities, including facilitation of fisheries trade through the African Continental Free Trade Area (AfCFTA).

Private sector role

Government support to foster private sector participation in the aquaculture sector is crucial to overall success. The example of Egypt, where national strategies are explicitly geared towards supporting the private sector, shows the potential benefits of promoting strong public-private partnerships (PPPs).

POLICY RECOMMENDATION

Provide an enabling environment for private sector engagement in the aquaculture sector. Examples include support for PPPs, access to finance, infrastructure, quality control, and capacity building.

Food security and employment

While fish and seafood play an important role in the case study countries' national diets, per capita consumption rates in Kenya and Nigeria are still low compared to regional and global averages. Fish can be an important source of affordable animal-sourced protein, in particular among lower income groups. Fish health management is essential to ensure the production of safe aquaculture products. The sector also has high potential to boost employment at the production level and along the value chain.

POLICY RECOMMENDATION

- Promote sustainably farmed fish and seafood as a high-quality, affordable and locally produced source of protein.
- Collect disaggregated data on employment in the aquaculture value chain, including spill-over effects on other sectors, to better understand employment potentials and guide investments into skill development, especially among women and youth.

The policy brief is based on the study:

Walakira, J., Hinrichsen, E., Tarus, V., Langi, S., Ibrahim, N. A., Badmus, O., Aziz A. and Baumüller, H. (2023): Scaling aquaculture for food security and employment in Africa – Insights from Egypt, Kenya and Nigeria. ZEF Working Paper No. 223. Bonn: Center for Development Research.

The study is available at www.r4ai.org.

PARI implementing partners: ZEF/University of Bonn, University of Hohenheim, the Forum for Agricultural Research in Africa (FARA) and its national partners, the African Growth and Development Policy Modeling Consortium (AGRODEP) facilitated by AKADEMIYA2063, and research collaborators in India.

PARI is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ).

IMPRINT

Center for Development Research (ZEF)
Genscherallee 3 | 53113 Bonn | Germany
E-Mail: presse.zef@uni-bonn.de
Phone: +49-(0)228 - 73 18 46
Brief prepared by: Andrew Aziz
Layout: Yesim Pacal (ZEF PR)



zef
Center for
Development Research
University of Bonn