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WorldFish CGIAR

Asia–Africa BlueTech Superhighway

Leveraging South–South collaboration to deliver a triple win for nature, people and climate

Nigeria

The challenge

Nigeria, with its 853 km coastline and numerous tidal lagoons, has been ranked third globally in the number of people dependent on marine resources for their nutrition (Selig et al. 2019). Its people rely on fish for 50% of their protein intake (Subasinghe et al. 2021). Nevertheless, the country has not utilized its coast's significant marine aquaculture potential. Despite being Africa's second-largest aquacultural producer, Nigeria imports almost half of its fish supply at a cost of more than $1 billion a year (FAO, 2017). Fish farmers rely heavily on freshwater ponds, and struggle with expensive inputs and fierce competition for water and land. With access to the right technologies and know-how, coastal producers have significant room to produce marine aquatic foods under more sustainable conditions. That would significantly improve the economic and food security situation for millions of Nigerians. It would also raise the adaptive capacity of coastal communities to address the serious environmental challenges they face.

Asia–Africa BlueTech Superhighway (AABS)

- A seven-year initiative, from 2023 to 2030, to transform aquatic food systems in Asia and Africa by leveraging South–South collaboration
- AABS is implemented by WorldFish in collaboration with a host of partners
- It aims to improve food and nutrition security, create increased employment and income opportunities and sustainably manage marine and coastal resources to mitigate and adapt to climate change

Phase 1: 2023–2027 in Bangladesh, Kenya, Mozambique, Nigeria and Tanzania

Overall project benefits by 2030

- An increase in aquatic food production of up to 500,000 metric tons in target countries, sustainably increasing incomes of 300,000 people by 2030
- At least 150,000 women and youth benefiting from increased income by 2030
- Up to 1.4 million hectares of the coastal zone brought under sustainable management

Donor: UK International Development, under the UK's Climate and Ocean Adaptation and Sustainable Transition (COAST) program of The Blue Planet Fund

Asia–Africa BlueTech Superhighway in Nigeria

Asia–Africa BlueTech Superhighway (AABS) will help Nigeria address its fisheries and aquaculture challenges by leveraging South–South collaboration to improve sustainability, resilience and prosperity in coastal communities. Through evidence-based models and partnerships, AABS will enhance the adaptive capacities of small-scale fish workers and farmers, mitigating the effects of climate change and increasing the sustainability of fish production. By focusing on Nigeria's vulnerable coastal regions, the initiative will not only support the government's goals but also ensure that the livelihoods of these communities are more secure and equitable.

AABS will implement one work package in Nigeria:

- **Integrated Multi-Trophic Aquaculture (IMTA)**—adapting and implementing IMTA tailored to local context in Africa and Asia

The South–South collaboration on these topics will be underpinned by **country-to-country knowledge exchange**—a forum that will convene stakeholders from across the target countries to share challenges and solutions and to learn from each other. The forum will offer a unique space for decision-makers and implementers to connect with peers in other countries, enable co-creation of actionable knowledge products and foster new ideas and innovations in a country-led environment—key to sustaining project outcomes

Integrated Multi-Trophic Aquaculture

Adapting and implementing IMTA tailored to local contexts in Asia and Africa

AABS will contribute to the conservation and sustainable use of coastal and marine ecosystems, nutrition, food security and livelihood improvement through the development and scaling of IMTA systems. These are climate-smart, nature-based systems that integrate fish farming with complementary marine species such as shellfish and seaweed, that feed on the organic and inorganic fish waste respectively.

Objectives

- Conduct a comprehensive analysis of the context of IMTA.
- Develop new IMTA systems through research and innovation.
- Validate context-specific IMTA business models.
- Scale IMTA systems within and beyond project countries.

AABS will scale the number of IMTA nature-based enterprises along Nigeria's coast. The project will build on the early successes of IMTA in Bangladesh and Vietnam, including through partner knowledge exchange visits, and adapt and scale lessons learned to identify, pilot, develop and scale sustainable IMTA systems.

Strategy

- AABS will begin with a **comprehensive environmental assessment**, identifying aquatic food species native to Nigerian environments, ones already being used by farmers, and the best combinations of finfish, bivalves and seaweed to produce within specific communities. The assessment will also look at the potential socio-economic, nutritional and environmental effects of such systems, and the Nigerian policy and regulatory environment that can support them.
- **Farmer surveys** will assess the current level of willingness to adopt IMTA systems, including the income thresholds and other factors necessary to incentivize farmers to try them. The surveys will also collect farmers' perspectives on the key risks and challenges they would face with IMTA systems.
- **Market assessments** will gather information on what species can be sold to consumers and what marketing might be needed. For instance, while there are 79 varieties of seaweed found in Nigeria, consumption is rare, and this market would need to be developed.
- Once these fundamentals are established, the project will **pilot different combinations** of finfish–bivalve–seaweed production in different areas of the country for 24 months per pilot, seeking to identify the most viable and profitable options for scaling. For instance, while there is long experience with mussel–seaweed combinations in Asia, in Nigeria various species of clams and cockles are more widely consumed and may have a place in local IMTA systems.

Partnership

- Lagos State University (LASU)

Find out more

Blog: Nature-positive, resilient coastal livelihoods through integrated multitrophic aquaculture in Nigeria

"If you don't know what you have in the water, you can't manage it."

– Nigerian stakeholders at the AABS kick-off workshop, Penang, Malaysia

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Scan for more information

Why invest in aquatic foods in Nigeria?

Aquatic food systems have a large and distinct sphere of impact

Provides **food, nutrition and livelihoods**

#3 Nigeria's global rank in number of people dependent on marine resources for nutrition (Saba et al. 2024)

13 kg Annual fish consumption per capita (Allen et al. 2017)

10 million Nigerians are actively engaged in different categories of fisheries' operations (Ogunji & Wuertz, 2023)

3–4% Share of national GDP from fisheries and aquaculture (Ogunji & Wuertz, 2023)

Is an engine for **economic growth**

185% Increase in Nigeria's aquatic food production since international standards for fisheries were set in 1995 (FAO, n.d.)

7.5% Projected increase in Nigeria's aquaculture production between 2022 and 2032 (FAO, 2024)

Reduces **carbon footprint** and **environmental stress**

Around the world, aquatic food systems produce nutrient-dense foods with lower emissions than land-produced livestock (Nordhagen, 2020).

Small fish and bivalve aquaculture stresses the environment less than chicken, the most efficient major terrestrial animal-source food (Oceana, 2023).

About WorldFish

WorldFish is a leading international research organization working to transform aquatic food systems to reduce hunger, malnutrition and poverty. Collaborating with global, regional and national partners, WorldFish delivers scientific innovations, evidence to inform policy, and knowledge to enable equitable and sustainable impact for millions who depend on fish for their livelihoods. As a member of CGIAR, WorldFish contributes to building a food- and nutrition-secure future and restoring natural resources. Headquartered in Penang, Malaysia, with country offices across Africa, Asia and the Pacific, WorldFish strives to create resilient and inclusive food systems for shared prosperity.

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