



# TAAT Aquaculture Compact

## Highlights

- **Demonstration of proven aquaculture technologies with Better Management Practices (BMPs) has contributed to an increase in yield due to improved fish seed of *Oreochromis niloticus* and *Clarias gariepinus*.**
- **Fish farmers in Nigeria and Zambia recently obtained yields of 0.8 t/ha compared with 0.4 t/ha yield in other farms.**
- **Household incomes have increased to US\$ 1,800 from US\$ 923 at the beginning of the project; representing an increase of 95%.**
- **Production of about 127 million fingerlings by farmers with successful sex reversal rate of mono sex tilapia from 70-98% and greater than 50% higher survival rate of fingerlings.**
- **Beneficiaries reached are 253,367 in 12 countries, of which 23,441 farmers have adopted aquaculture technologies deployed.**

## What is the problem?

In Africa, aquaculture development has lagged behind the rest of the world due to poor-quality fish seed, inadequate supply of fingerlings, poor technical know-how, high mortality and low survival rate in the hatchery. Others include high cost of fish feed, post-harvest losses, inadequate extension services and training and poor market linkages. Inadequate domestic fish supply has therefore resulted to the importation of frozen fish to offset the gap in the domestic demand in Africa. This is due to the decrease in artisanal fish supply as a result of overfishing.

For instance, Nigeria's per capita fish consumption in 2015 was 17.5 Kg, therefore it required about 2.66 million tons of fish annually to satisfy the dietary requirement of her 180 million citizens. Unfortunately, the domestic fish production data in 2015 was 1,011,594mt (FMARD) of which aquaculture supplies 316,727 ton (31.31%). Nigeria has to import about 806,000 metric ton (FDF, 2015) valued USD \$ 1,126,428,414 annually into the country to augment the shortfall.

Nile tilapia (*Oreochromis niloticus*) followed by African catfish (*Clarias gariepinus*) and their respective hybrids are the most farmed fish species in Africa. Hence, the TAAT Aquaculture Compact strive to undertake interventions geared towards

improving productivity. This is through demonstrations of proven technologies, capacity building and provision of affordable and quality inputs. An increase in production, increases income, food security. The Compact is working to reduce post-harvest losses and increase value addition of the two species among the beneficiaries. The Compact is also working to ensure sustainability of the aquaculture farming. This will promote employment and livelihoods for the farmers with an emphasis on women and youth.



African catfish (*Clarias gariepinus*)



*Mono-sex tilapia (Oreochromis niloticus)*

## Compact description

The Aquaculture Compact continues to contribute to increasing aquaculture production of catfish and tilapia in Africa by strengthening Aquaculture Value Chain Actors (AVCAs). This has led to a higher productivity, increasing fish protein consumption, reducing post-harvest losses and increasing market opportunities. This involves working with an ecosystem of strategic value chain actors including private and public-sector partners, input suppliers, government institutions and fish farmer associations across target countries. The Compact is working in Benin, Burundi, Cameroon, Cote d'Ivoire, Democratic Republic of Congo, Ghana, Kenya, Malawi, Nigeria, Tanzania, Togo and Zambia.

## What are TAAT Aquaculture Objectives?

- Create enabling environment for adoption and scaling-out of proven aquaculture technologies
- Ensure that the value chains operate in synergy with assured market to catalyze private-sector investments in intermediate aquaculture production
- Facilitate effective delivery of technologies to aquaculture value chain actors
- Raise aquaculture production and productivity through identification and deployment of appropriate technologies

## What are the TAAT Aquaculture Technologies?

- Fast growing disease resistant fish seeds and improved fish rearing systems.
  - Mono-sex tilapia (*Oreochromis niloticus*)
  - Mass production of fingerlings in hapa
  - Fast Growing *Clarias gariepinus* and hybrid of *Clarias (Hetero-clarias)*

- In-Pond Raceway System
- Cage Culture System
- Recirculation Techniques
- Flow through techniques
- Raised pond technology
- Better Management Practices (BMPs)
- Quality low-cost fish feed using locally available raw materials
  - Formulation of low-cost feed
  - Feeding and management techniques
- Improved post-harvest technologies and product development
  - Solar tent drying Technology
  - Smoking Kiln Technology

## What have we achieved?

- Over 253,000 beneficiaries (31% female) have been reached in 12 countries
- More than 80 demonstration sites established for technology display
- 20,174 people have been trained on specific Aquaculture technologies
- Fish farmers had access to improved fish seed of over 127 million fingerlings
- 24,527 beneficiaries are currently accessing and using aquaculture technology products and services in the 12 countries
- Four extension manuals on aquaculture technologies have been written by Aquaculture Compact and are being reviewed for publication

The deployment and use of Better Management Practices (BMPs) has increased in yield with reduction in mortality rate over the traditional production practice. Secondly, profitability analysis of the Mono sex male tilapia in Zambia confirms the innovation to be profitable, viable and sustainable compared to mixed sex tilapia. The Return on Investment (ROI) was 28% and the cost benefit analysis was 1.22 in one cycle. In Nigeria, catfish seed production is economically viable because the benefit is 1.62 times the cost of investment. The Return on Investment (ROI) was 62% over a period of 2 months and cost benefit analysis was 1.62 in one cycle.

## Were there any key challenges or lessons learned?

- Poor linkages among the AVCAs (fish seed producers, farmers, fish processors, marketers, exporters, and other actors) for commercial production is a big impediment to the growth of the aquaculture.

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