



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



Disseminating Technologies for Small Holders: the TAAT Experience

Professor Bernadette Fregene
TAAT Aquaculture Compact Leader

Nigerian Aquaculture: Status, Prospects, and Future Growth Workshop
1 November 2022



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Presentation Outline



1. Introduction of TAAT Aquaculture Compact
2. Target countries
3. Implementation Strategy and Institutional Arrangement
4. Aquaculture technologies deployed
5. Key Achievements
6. Success Stories from Partners and Public Sector Engagements
7. Extension Manuals as Information Sources
8. TAAT Aquaculture Compact Videos
9. Lesson Learnt
10. Way Forward
11. Acknowledgement



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

TAAT Aquaculture Compact



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



- Technologies for African Agricultural Transformation (TAAT) program, funded by the AfDB
- Aquaculture Compact is led by the WorldFish Centre
- Aligns with the AfDB Blue Economy Flagship activities: aquatic foods, fish value chains, and integrated resource management
- Objectives:
 - Create an enabling environment for aquaculture technology adoption
 - Facilitate effective delivery of technologies to Aquaculture Value Chain Actors (AVCAs)
 - Increase aquaculture production and productivity through the identification and deployment of quality tilapia and catfish seeds, production of low-cost fish feed and value addition



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

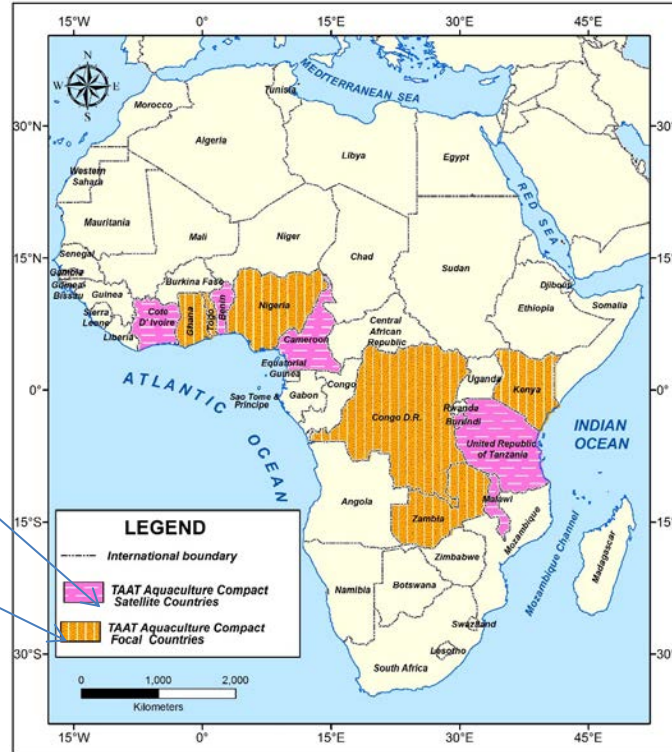


AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



Burundi
Cameroon
Cote d'Ivoire
Republic of Benin
Tanzania
Togo

DRC
Ghana
Kenya
Malawi
Nigeria
Zambia



TAAT Aquaculture Compact Target Countries



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Implementation Strategy and Institutional Arrangement



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



Technologies for African
Agricultural Transformation

Institutional Arrangement

- Identification of Lead Partner: NARS, Association of AVCAs
- WF Sub-Contract Agreement with National Partners
- Monitoring and Assessment

Implementation Strategy

- Outreach Campaign and Awareness
- Capacity Building
- Demonstrations of proven Aquaculture Technologies
- Dissemination and deployment of technologies
- Taking technology to scale



AfDB Country Engagement mission for RMCs: DR Congo, Togo, Cote d'Ivoire, Republic of Benin, Malawi and Rwanda



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Aquaculture Technologies Demonstrated and Disseminated



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



Technologies for African
Agricultural Transformation

- Quality fish seed
- Low-cost fish feed
- Value added fish products



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Production System: I-Pond Raceway System



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



- Airlift is used to create water current in cell to remove fish waste outside the cell.
- Continues aeration with oxygen required
- Intensify production in 2% of pond water volume



Benefit

- Increase Stocking Density
- Avoid fish stress (disease)
- Increase fish growth
- Improved FCR



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Cage Culture System

- It is easy to install
- Inspection of fishes and their feeding is much easier
- Treatment of disease is much simple than that of pond culture.
- In emergencies it can be removed from one place to another.
- Since the cage is meshed, the fishes inside have less chances of being attacked by predators.
- Harvesting is very simple



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPEMENT



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Mass Production of Fingerlings in Hapas

- Production on a per unit area is high.
- Assurance of uniform fry of relatively the same age
- Minimised mortality rate of fry
- Stock fish in Ponds



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPEMENT



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Key Achievements



AFRICAN DEVELOPMENT
GROUPE DE LA BANQUE
DE DEVELOPPEMENT

- Increased access to improved 177 Million fingerlings produced
- Supported farmers with over 10,000 improved brood stock for fingerlings production to increase productivity in 10 targeted countries
- Increased productivity and management practices of fish farmers through Deployment of 13 proven Aquaculture technologies in 12 countries.



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Key Achievements



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPEMENT



- Aquaculture Value Chain actors impacted 36,248 through capacity building at country
- Beneficiaries (31,955) accessing and effectively using technology products and services across the 12 targeted countries
- Establishment of 88 demonstration site across the 10 targeted countries
- Outreach campaigns and promotional activities (17) organized for technology adoption in targeted countries
- Direct Aquaculture value chain actors (632,239) reached across the participating countries



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Gender Involvement

- 31% of women engaged across the Value chain
- 69% men engaged in Aquaculture Compact activities



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Djam Wilfred Chiatoh, Nirex Farms Ltd, Yaoundé- Cameroon

- Nirex Farm owned and managed by an experienced young entrepreneur
- Farm established in 2016
- Newly introduced to mono sex male tilapia technology
- Increased technical skills in production of mono-sex tilapia fingerlings
- Adopted and produced 230,000 mono sex tilapia in 2019
- Adoption of mono sex male tilapia after training by Nirex farms are >70 fish farmers
- Additional income of USD 27,000 after adoption



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPEMENT



Technologies for African
Agricultural Transformation



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

TIGOI FISH FARM Vihiga County- Kenya

- Tigoi Fish farm is owned and managed and by a woman (Zinath Deen)
- Established in 2012
- Increased annual production from 120,000 to 360,000 mono sex tilapia fingerlings in hapas
- Annual Income from USD 16,649 to USD 49,440
- Increase in yield – 240,000 fingerlings valued at USD 33,000
- Strengthened skills of over 38 fish farmers including youth and women



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPEMENT



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Youth Enterprise- Ibadan Nigeria

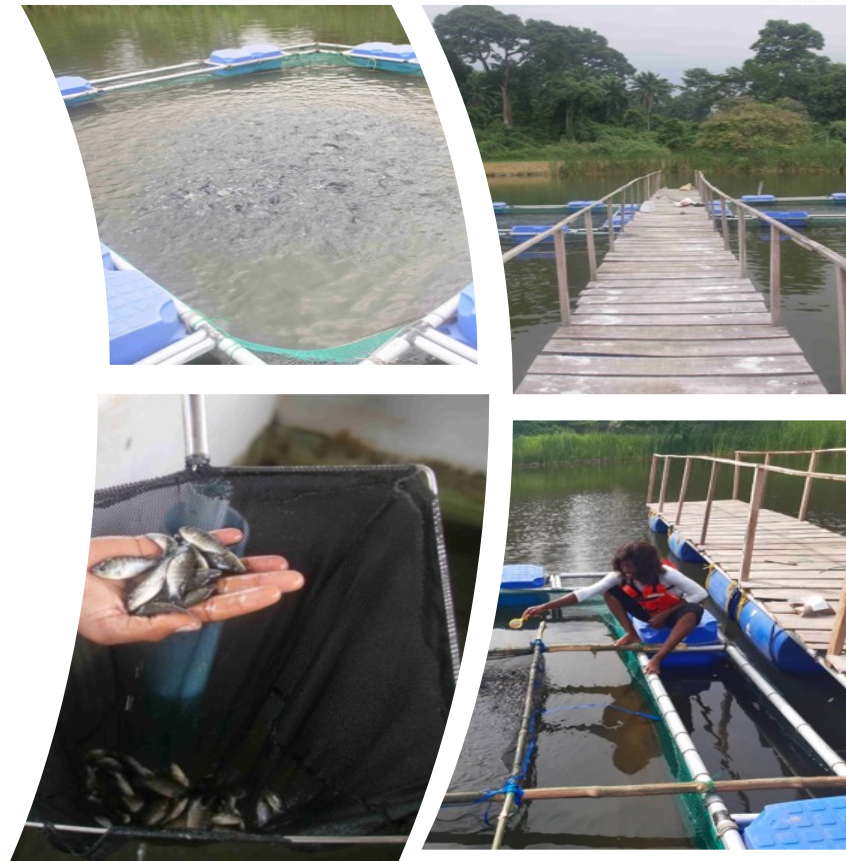
- Farm managed by young female entrepreneur, Ohwofasa Faith Oghenefogho
- Non-existence of tilapia culture prior to Aquaculture Compact intervention
- Adopted the technology and produced 10,000 monosex Tilapia in six (6) months
- Additional income of USD 625
- Trained >30 Youths including new entrepreneurs on monosex Tilapia fingerlings production
- Started a new business for production of monosex tilapia for consumption using cage culture



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPEMENT



Technologies for African
Agricultural Transformation



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPEMENT



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Royd Mukonda: Mukasa Agrosolution and Fish Farm Kabwe, Zambia

- Increased technical skills in production of mono-sex tilapia fingerlings
- Increased production per month from 250,000 to an average of 500,000 tilapia fingerlings
- Increased annual income from \$61,000 to \$183,000
- Increased customers data base
- Attract >200 new entrepreneurs and private investment
- Strengthen skills of over 500 fish farmers including youth and women
- Successful sex reversal rate from 70-98%



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

More Success Stories



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



- <https://youtu.be/LSfMLDLuwG0> : TAAT: Facilitating access to improved fish rearing systems to feed Africa
- <https://youtu.be/IONZ1oyk1PM>: Towards self-sufficiency in inland fish production in Africa
- [WORLD FISH TRAINING MANUAL VIDEO.mp4 - Google Drive](#)
- <https://youtu.be/fC9tMxHvAqE>: TAAT : Faciliter l'accès aux systèmes d'élevage de poissons améliorés pour nourrir l'Afrique (Pt 2)
- <https://youtu.be/aimssfmCMBg>: Boosting fish production through value addition



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Extension Manuals as Information Sources



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



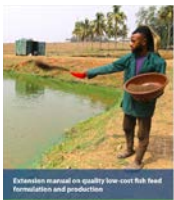
Extension Manual on Mono sex Tilapia Production and Management

<https://www.worldfishcenter.org/publication/extension-manual-monosex-tilapia-production-and-management>



Extension Manual on Production of quality low catfish seed

<https://www.worldfishcenter.org/publication/extension-manual-production-quality-catfish-seed>



Extension Manual on Quality Low-Cost Fish Feed Formulation and Production

<https://www.worldfishcenter.org/publication/extension-manual-quality-low-cost-fish-feed-formulation-and-production>



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

TAAT Aquaculture Compact Videos



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPEMENT



- <https://youtu.be/LSfMLDLwC0> : TAAT: Facilitating access to improved fish rearing systems to feed Africa
- <https://youtu.be/IONZ1oyk1PM>: Towards self-sufficiency in inland fish production in Africa
- [WORLD FISH TRAINING MANUAL VIDEO.mp4 - Google Drive](#)
- <https://youtu.be/fC9tMxHvAqE>: TAAT : Faciliter l'accès aux systèmes d'élevage de poissons améliorés pour nourrir l'Afrique (Pt 2)
- <https://youtu.be/aimssfmCMBg>: Boosting fish production through value addition



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Lessons Learnt



AFRICAN DEVELOPMENT BANK GROUP
GROUPE DE LA BANQUE AFRICAINE
DE DEVELOPPEMENT



- Alignment of activities with other national development projects for greater impact: AFDB-Zambia; IFAD-Kenya; IFAD-DRC; Côte d'Ivoire-IFAD; ,
- Timely disbursement of funds results in the faster implementation of activities at the national level
- Involvement of Private sector for scaling technologies and increased productivity
- Supporting fish processors, particularly women, in reducing post-harvest loss and increasing the development and consumption of fish products
- Virtual meetings, e-extensions, one-on-one extensions, and other forms of online communication are effective tools for engaging with partners, especially during a pandemic.



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Way Forward

- Self sufficiency in fish production is required to feed Africa
- Deployment of proven aquaculture technologies for adoption and scaling
- Stenghtening skills of Aquaculture Value Chain Actors in BMPs, processing, marketing and business development.
- Grants are limited; need to advocate for countries to take loans for aquaculture development and scaling.
- Private-Public-Partnership should be encouraged for technology scaling because aquaculture is private sector driven



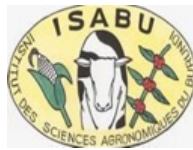


FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Acknowledgement

- This work is financed by African Development Bank (AfDB):
- Implemented in partnership with:



USAID
FROM THE AMERICAN PEOPLE



BILL & MELINDA
GATES foundation



MISSISSIPPI STATE UNIVERSITY™
GLOBAL CENTER FOR AQUATIC
HEALTH AND FOOD SECURITY



BILL & MELINDA GATES foundation



MISSISSIPPI STATE UNIVERSITY™ GLOBAL CENTER FOR AQUATIC HEALTH AND FOOD SECURITY