

Accelerating Aquaculture Development through Improved Tilapia Seed Distribution (TiSeed) - GHANA

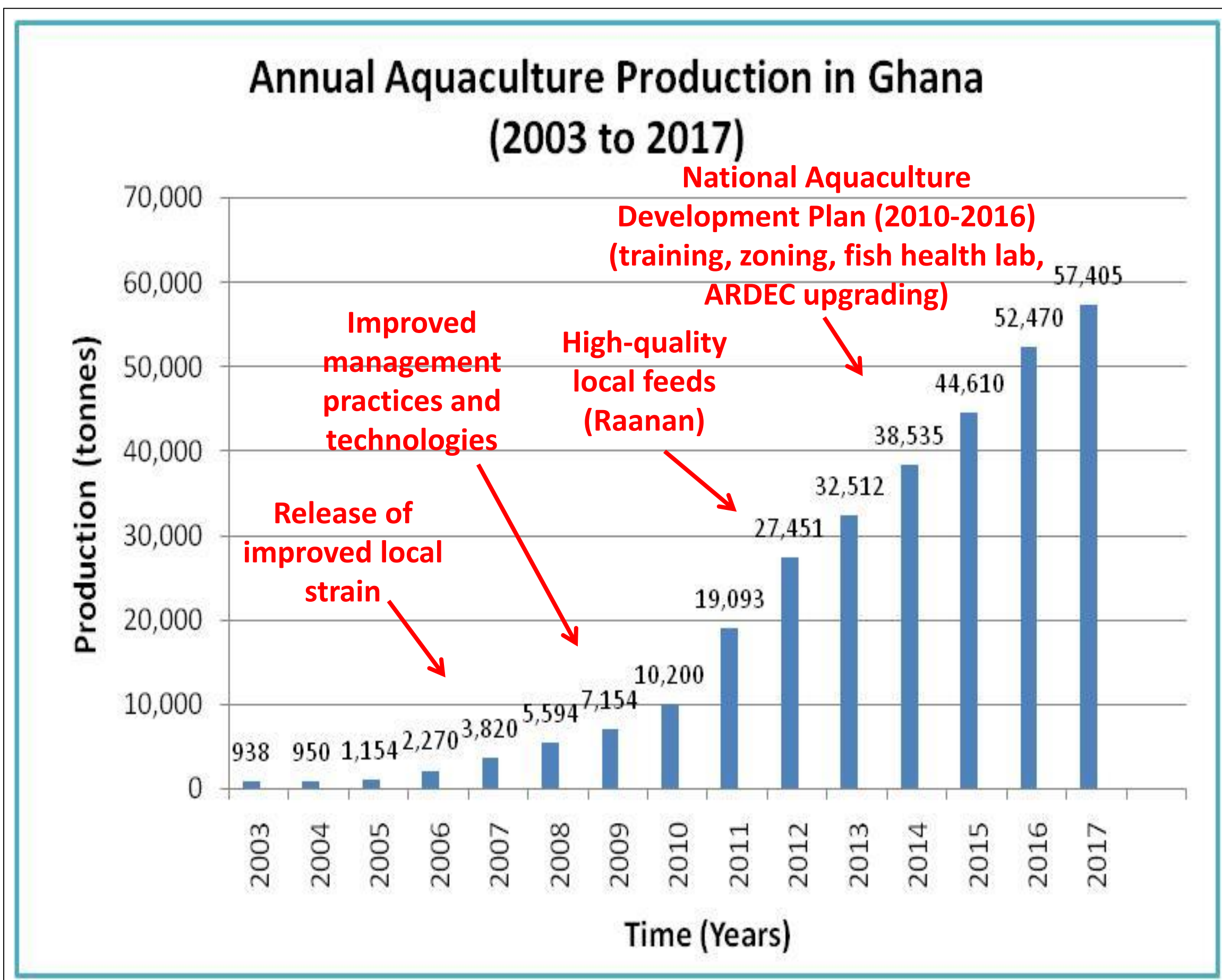
Consortium Members

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- **Nhuong Tran, Olivier Joffre, Trinh Quoc Trong** (Scientists); **John Benzie** (Principal Scientist), WorldFish
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- **Matthew Oyih, Emmanuel Aryee** (Division Heads); **Peter Ziddah** (Fish health expert), Fisheries Commission
- **Godfred Alimo** (S-HOINT Ltd) & **Patricia Safo** (Crystal Lake Fish Ltd)



Synergies with other initiatives

- FISH's programs on seed distribution systems
- PIM's programs on seed systems and on inclusive value chain development
- Women's Empowerment in Agriculture Index (WEAI) and Women's Empowerment in Fisheries (WEFI)
- AUDA/NEPAD's Agricultural Technical and Vocational Education and Training (ATVET) Program



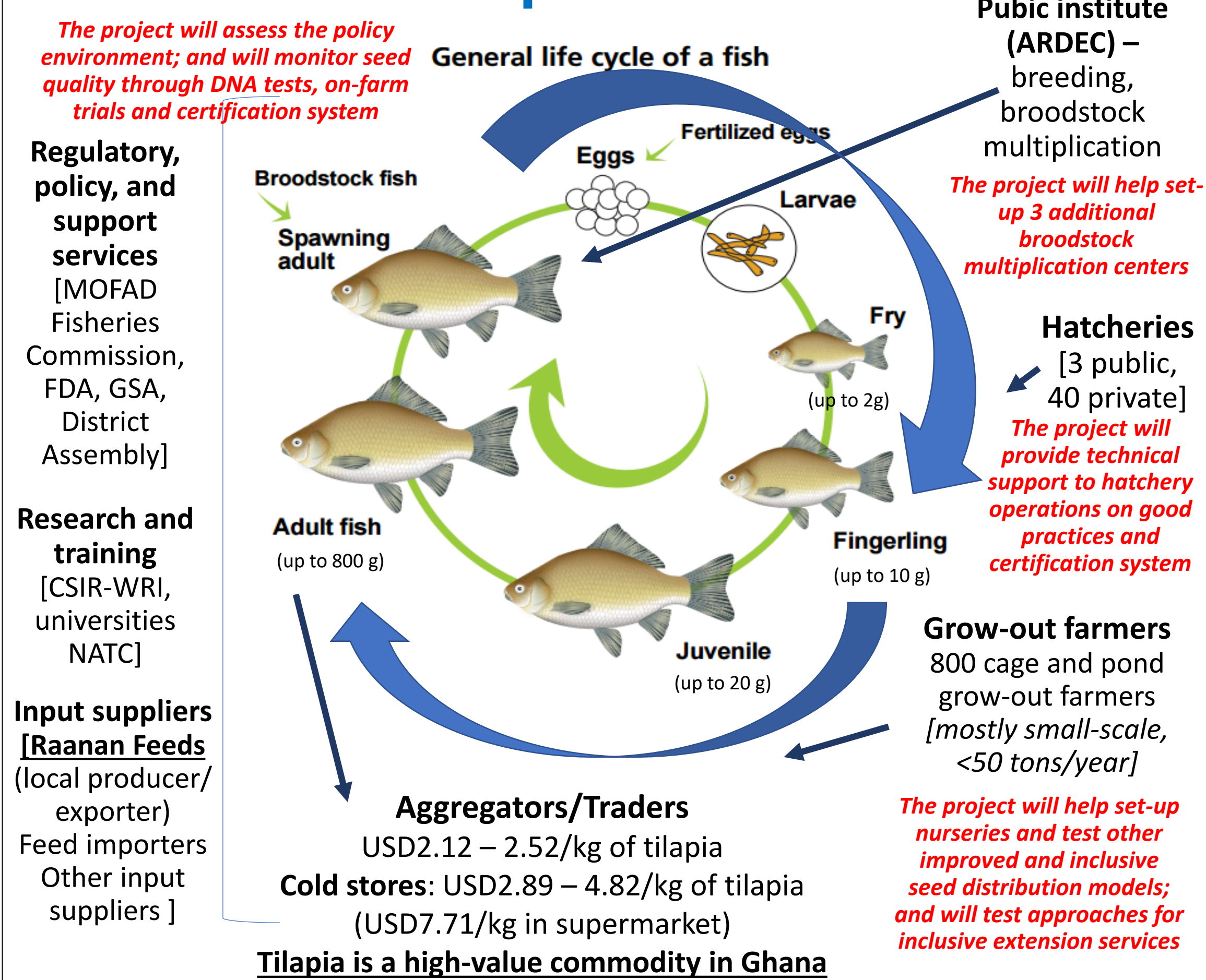
Different aquaculture systems

- Extensive, semi-intensive and intensive systems
- Polyculture (e.g., tilapia and catfish) and monoculture



Ponds constitute the largest number of farmers
Hapas installed in ponds
Cages contribute 90% of total production

Actors in the Tilapia seed chain



Impact activities

The project combines research, impact evaluation, capacity strengthening, working with government and private sector, and facilitation of stakeholder platforms

- Technical support to Nucleus Breeding Centre, 30 hatcheries, 3 multiplication centers, and 6 nurseries
- Water quality and molecular analysis of tilapia seed
- Broodstock performance and seed culture trials and monitoring
- Testing business models for sustainable provision of technical support and seed distribution
- Facilitating stakeholder platforms and networks to enhance communication and coordination
- Conducting farm surveys, interviews, feasibility and profitability analysis, effectiveness analysis, experiments, and impact evaluation to inform researchers, regulators, and industry
- Supporting 3 MS students on breeding and molecular genetics and hatchery management

Activities to enhanced project sustainability

- Working with private hatcheries, multiplication centers and nurseries, and provision of technical support to ensure long-term feasibility and sustainability
- Strengthening technical and institutional capacity of various actors (broodstock and multiplication centers, hatcheries, nurseries, farmers)
- Facilitating finalization and pilot implementation of certification processes to provide long-term quality improvement to the entire tilapia sector
- Improving productivity and profitability at farm level to ensure good returns and sustainable enterprises
- Testing cost-effective extension services to ensure information provision will continue after the project
- Facilitating platforms and networks for strengthening coordination among various actors and sustaining collective action beyond the project
- Generating data and rigorous analysis for stakeholders' networks to use to lobby for investors, donors and government support for the aquaculture sector

Project objectives and description

Development goal: To improve productivity and profitability of small-scale tilapia cage and pond farming.

Project outcome indicators: Increased productivity of 400 small-scale tilapia farmers (by 20% for cage, 15% for pond) and reduced fingerling mortality by 50%.

Two research objectives and their components

1. To improve the quality and service level of public and private hatcheries

- Generating an understanding of seed quality presently being used
- Developing and disseminating best practice guidelines and quality standards for hatcheries
- Building the capacity of hatchery operators and small-scale farmers in sustainable hatchery and seed management
- Supporting hatchery registration and certification system

2. To increase access to and adoption of high-quality fish seed and good aquaculture practices for new or existing producers, with specific attention for women and youth

- Analyzing the tilapia seed supply chain, assessing its accessibility to existing producers and identifying options to improve the integration of women and youth
- Examining farmers' current use, perception and experience with fish seeds, and measuring demand and willingness to pay for high-quality fingerlings
- Developing and assessing improved models for seed dissemination
- Identifying gender-inclusive and pro-youth approaches to training and information system
- Modeling and identifying factors and constraints in improving farm productivity and profitability

Major activities and timeframe

YEAR 1 (Q1-Q2) - Exploratory research and baseline studies

- Launch meeting (Feb 19, Accra)
- Review of certification system and training/extension materials (Q1)
- Capacity assessment of hatcheries (Q1)
- Baseline farm survey design and implementation (Q1-Q2)
- Qualitative seed system and seed value chain analysis (Q2)
- Review and selection of seed distribution & extension business models (Q1-Q2)

YEAR 1 (Q3) to YEAR 3 (Q2) – Interventions for total of 2 years

- Broodstock management; accreditation support
- Action research on business models
- Water quality and molecular analysis of tilapia seed
- Broodstock performance and seed culture trials and monitoring of seed quality
- Farmers' training and extension services
- MS students enrollment and thesis completion

YEAR 3 (Q3-Q4) – Impact evaluation results and project closing

- Endline survey and impact evaluation (quantitative and qualitative)
- Documentation of processes, viability and lessons

YEARS 1-3: Facilitation of stakeholder platforms and networks to enhance communication and coordination and dissemination and publication of research results