

RESEARCH AREA

1. Aquaculture Systems Development and Innovation Design and optimization of integrated aquaculture models (fish–rice–pig–poultry), hatchery technologies, and breeding protocols. Scientific outputs demonstrate improved productivity and sustainability in tropical aquaculture systems.

2. Fisheries Stock Assessment and Biodiversity Monitoring Application of analytical techniques to evaluate fish population dynamics, biodiversity indices, and ecosystem health. Research informs national and regional fisheries management policies.

3. Environmental Impact Assessment (EIA) and Aquatic Ecology Scientific studies on pollution, heavy metal contamination, and hydrological impacts on aquatic ecosystems. Consultancy reports and peer-reviewed work contribute to ecological restoration and watershed management.

4. Blue Economy and Policy-Oriented Research Integration of fisheries and aquaculture within the global Blue Economy framework. Contributions to AU-IBAR and FAO projects emphasize sustainable marine resource governance and policy reform.

5. Fish Nutrition and Alternative Feeds Experimental trials on maggot meal, black soldier fly larvae, plant-based diets, and probiotics. Publications highlight feed efficiency, immune modulation, and growth performance, advancing sustainable aquafeed innovation.

6. Aquatic Animal Health and Biosecurity Laboratory and field-based research on fish pathology, histopathology, and disease prevalence. Development of biosecurity protocols and disease management strategies for aquaculture systems.

7. Socio-Economic and Value Chain Research Empirical studies on aquaculture market structures, trade flows, and livelihood impacts. Value chain assessments provide evidence for rural development and agribusiness competitiveness.

8. Climate Change Adaptation and Risk Management Scientific contributions to resilience strategies for aquaculture under climate variability. Advisory roles on climate analytics strengthen global adaptation frameworks for food systems.

9. Capacity Building and Knowledge Transfer Development of training manuals, extension curricula, and innovation platforms. Leadership in vocational and professional training programs enhances human capital in aquaculture and fisheries.

10. Integrated Natural Resource Management Multidisciplinary research on watershed health, river ecology, and transboundary resource governance. Contributions to AfDB and Nile Basin Initiative projects emphasize ecosystem-based sustainability.

11. Fish Genetics and Breeding Programs Applied research in selective breeding and hatchery management, focusing on genetic improvement of catfish and tilapia strains. Innovations enhance growth rates, disease resistance, and production efficiency.

12. Nutrigenomics and Functional Nutrition Emerging work linking diet composition with physiological and immune responses in aquaculture species. Feed trials with probiotics and alternative proteins provide pathways toward gene–diet interaction studies.

13. Project Cycle Management and Evaluation Scientific leadership in donor-funded projects (AfDB, FAO, USAID), covering identification, appraisal, implementation, monitoring, and evaluation. Contributions include technical reports, socio-economic impact assessments, and sustainability frameworks.

14. Aquatic Biodiversity Conservation and Ecosystem Services Research on conservation strategies for inland and coastal ecosystems. Scientific outputs highlight the role of fisheries in maintaining ecosystem services and biodiversity under anthropogenic pressures.

15. Innovation in Aquaculture Technology and Systems Design- Development of cage culture systems, water quality monitoring tools, and integrated farming technologies. Consultancy and field trials demonstrate scalable innovations for commercial aquaculture enterprises.