African Union

EUROPEAN UNION



SUSTAINABLE GROWTH OF AQUACULTURE IN AFRICA

(Strengths, Weaknesses, Opportunities and Threats)

Introduction:-

Aquaculture in Africa presents significant potential for food security FAO (2022), job creation AU-IBAR (2019), and economic development World Bank (2019) and Bene & Heck (2005). However, the sector also faces critical challenges that need to be addressed through coordinated and inclusive strategies Obiero, et al (2019).

SWOT Analysis of thematic areas on status of Aquaculture in Africa: -

To identify issues requiring policy introversion, production of knowledge products, and developmental support The SWOT analysis below provides an overview of the Strengths, Weaknesses, Opportunities, and Threats affecting the sustainable growth of aquaculture on the continent.

Strengths	**Weaknesses**
1. Abundant Natural Resources • Rich and diverse aquatic ecosystems: lakes, rivers, wetlands, coastal and marine zones suitable for aquaculture activities. • Biodiversity of indigenous and exotic fish species suitable for aquaculture. • Varied climatic and geographic conditions allowing year-round production across multiple zones. • Renewable energy sources such as solar and wind energy are available year-round across most locations on the African continent. • Raw material for feed ingredients such plant and animal products. • High number of people sucking work and livelihood opportunities. 2. Established Institutional Frameworks • Existing ministries of fisheries, agriculture, and environment. • Regional environmental governance and Development organizations (eg,. Regional Economic Community Institutions, Ecosystem management body (eg. lake victoria fisheries organization) • Research institutions and technical agencies with aquaculture mandates. • Aquaculture Education and research. 3. Establish Commercial technologies for African Conditions • Tilapia production system in Egypt, lake victoria and Ghana • Catfish aquaculture in Nigeria.	1. Weak of Aquatic Animal Health and Biosecurity Measures • Limited Knowledge and Expertise among farmers and local authorities regarding aquatic animal health and biosecurity. • Lake of aquatic health management systems (eg. poor disease surveillance and emergency preparedness. • Poor reporting structures, (eg. there are no clear epidemiological maps of fish diseases in the African continent). • Lake of the certification systems for farmed fish traceability, safety and quality. • No Policy Guidelines on the Use of Veterinary Inputs (Antibiotics, Chemicals and Biological materials, Feed Additives, etc) in Aquaculture in many African Countries. 2. Inadequate Infrastructure • Limited supporting infrastructure (eg. Laboratories, certified hatcheries, feed mills, Cold chains, transport and reliable energy supply). 3. Weak of aquaculture skills and experience across value chain. 4. Lack of quality seed • Poor genetics • Lack of hatcheries best management practices 5. Lack of Dedicated and Sustainable Funding • Aquaculture often underfunded in national budgets; • limited access to investment capital, especially for SMEs • The lack of specific insurance programs for small and medium producers.

- Universities and Centre of Excellences
- Stakeholders and industry associations and Networks (e.g World aquaculture society African chapter, National and Regional Associations)
- Strong NGOs and development partner presence (e.g., World Fish, FAO, GFCM and ANAF AU-IBAR).

4. Growing Youth Population
- Over 50% of Africa's population is under 25 years old, offering a dynamic and trainable workforce (AfDB "Youth at the Forefront" initiative).

5. Policy and Legal Foundations
- Existing continental, regional and national aquaculture policies and strategic plans (aligned with international best management practices (BMP)).

6. Regional and Continental Structures
- Support from Regional Economic Communities (RECs), Regional Fisheries Bodies (RFBs), and African Union frameworks (e.g., Policy Framework and Reform Strategy for Fisheries and Aquaculture in Africa (PFRS)).

7. Political Will and Government Engagement
- Increasing recognition of aquaculture in national development and food security agendas (eg. Most African countries have adopted a blue economy approaches to aquaculture development),
- Availability of investments incentives (eg. design land and water, infrastructure, investments subsidies, technical support and PPPs).

6. Low Public Awareness
- Limited understanding among investors, communities, media, and consumers about the opportunities, benefits and risks of aquaculture.

7. Lake of affordable and sustainable quality feed

8. Lack Strategic Environment and Social Impact Assessment Guideline for Climate-Smart Aquaculture Development

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Opportunities

1. Achieve food and nutritional security for African continent.
   - Aquaculture has the potential to eliminate fish supply deficit.
   - Fish has a high nutritional quality which essential nutrients for child development and health.
2. Growing Intra-African Trade
   - The African Continental Free Trade Area (AfCFTA) creates opportunities for regional markets, incentivizing increased aquaculture production and value addition.
   - Rapid urbanization and rising middle-class populations increasing demand for affordable, healthy fish protein.
3. Supportive International Guidelines and Partnerships
   - Alignment with WOAH, FAO, GFCM and AU-IBAR strategies for aquatic animal health, sustainable aquaculture, and investment readiness.
4. Potential for Indigenous Species and Value Chain Development
   - Untapped potential in farming native species (e.g., catfish, tilapia, and marine finfish).
   - Expanding value chains (e.g., fish feed, cold chain, processing and value addition).
5. Development Regional None State Actors Networks
   - Promote establishment of non-state actors, such as:
   - ✓ Regional Aquatic Animal Health Networks
   - ✓ Producer Associations, women's groups, and youth aquapreneurs.

Threats

1. Threats to biosecurity and biosafety due to uncontrol movement of live fish.

2. Climate Change and Environmental Variability

Global warming, aquatic temperature fluctuations, increased frequency of extreme weather events, (floods and drought) and habitat degradation affect aquaculture systems.

3. Pollution and Water Quality Degradation
- Industry pollution.
- Non-point sources of pollution (e.g., agriculture runoff, urban waste) reduce water quality in key aquaculture zones.

6. Technological Innovation - Advances in feed formulation, breeding programs, and recirculating aquaculture systems (RAS), integrated Agri-Aquaculture system (IAAS) and Integrated Multi trophic Aquaculture system (IMTA). - Renewable energy and Climate Smart systems - Artificial intelligence. 7. Aqua feed industry development - The projected increase in demand for aqua feeds creates opportunities for regional fish feed industry development	

Conclusion

Africa is well-positioned to expand and modernize its aquaculture sector, leveraging its natural resources, youthful population, established commercial aquaculture technologies and growing regional markets.

However, to realize these potentials, Africa must address existing weaknesses particularly in biosecurity, infrastructure development, and governance and guard against all emerging threats.

With strong political will, sound partnerships, and strategic investment, aquaculture can become a cornerstone of Africa's food systems transformation and Blue economy development. To do this, Africa will need a strong continental strategy, Regional strategies and National strategies all aligned to the African Union Policy Framework and Reform Strategy for fisheries and Aquaculture (PFRS) and African Fisheries reform Mechanism (AFRM).

Policy Recommendations

1. Establish national, regional and continental aquatic animal disease surveillance and response systems, harmonization of strategy.
2. Create contingency plans and strengthen diagnostic lab network services.
3. Encourage Implementation of biosecurity and biosafety frameworks to regulate germplasm and live aquatic organisms' movement.
4. Establish quarantine measures and traceability systems.
5. Promote sustainable aquaculture practices through farm best management practices, environmental assessments and zoning.
6. Facilitate public-private partnerships and financing for climate-resilient and bio-secure aquaculture infrastructure.
7. Providing incentives for sustainable aquaculture systems which are water and energy efficient. (eg., biofloc systems, recirculating aquaculture systems (RAS), Integrated Agri-Aquaculture Systems (IAAS), Integrated Multi-Trophic Aquaculture (IMTA),), solar systems and waste treatment technologies.
8. Encourage regional coordination through the RECS, AU-IBAR and regional management bodies to harmonize policies and share knowledge and best practices.
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For more information:
African Union – Interafrican Bureau for Animal Resources (AU-IBAR)
Kenindia Business Park Museum Hill, Westlands Road
P.O. Box 30786-00100 Nairobi, Kenya Tel:+254 (20) 3674 000
Email: ibar.office@au-ibar.org Website: www.au-ibar.org