



POLICY BRIEF

THE PROMISE OF CAGE AQUACULTURE FOR FOOD SECURITY AND PROFIT: BALANCING GROWTH AND ENVIRONMENTAL CONCERNS

Unlocking the Potential and Sustainably Managing Cage Aquaculture for Food Security and Profit

1. WHAT IS AT STAKE?

Cage fish farming, currently taking place in the regional trans-boundary water bodies and inland Small Water bodies (SWBs) that abound in Africa, is akin to mining gold in the form of fish. Cage aquaculture has the potential to significantly increase fish supply in Africa, however, if not done in a sustainable manner, will pollute the water bodies (lakes, dams, rivers, reservoirs) and production will collapse. The sustainable management of cage aquaculture operations remains paramount if the rush for the “blue gold” is to thrive and unleash its full potential. The benefits include enhanced livelihoods, food and nutrition security; wealth generation; inclusive employment opportunities; poverty reduction; and improved African economic growth. It is an opportune time for a public sector intervention to ensure that cage aquaculture growth is sustainable to prevent possible ecological collapse. This policy brief is intended to guide member states, regional fisheries bodies, policy-makers, industry players, and stakeholders in formulating regulatory frameworks and establishing best management practices for cage aquaculture in Africa.

2. PROBLEM STATEMENT

In order to balance social and economic drivers with environmental management concerns, the following issues need to be addressed;

- Conflict between water resource users.
- Water quality issues due to nutrients pollution from fish feeds and waste.
- Biodiversity issues including alien fish introduction and the degradation of natural fish habitats.
- Biosecurity and fish health management issues.

The drivers informing the need for a fish aquaculture policy are summarized in Figure 1.

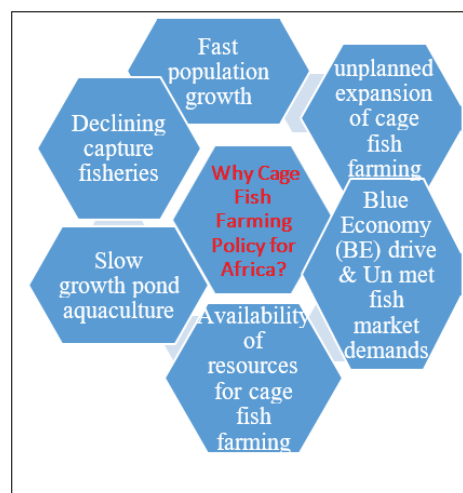


Fig. 1: Drivers for an Africa Cage Fish Farming Policy. From LVFO 2021.

3. AFRICA'S CAGE CULTURE POTENTIAL

Africa has a huge aquatic natural resources endowment for cage aquaculture in the form of the great lakes (e.g. Lakes Victoria, Tanganyika, and Malawi), dams, reservoirs and major river systems such as the Congo, Volta, Nile and Zambezi, Kagera among others.

Currently, cage aquaculture in Africa is carried out on over 18 inland water bodies with 263 installations and 20,000 cages (Figure 2). Lakes Victoria, Kariba, Volta and River Volta host about 83% of cage aquaculture installations on inland waters and are major areas for cage aquaculture expansion (Musinguzi et al., 2019).

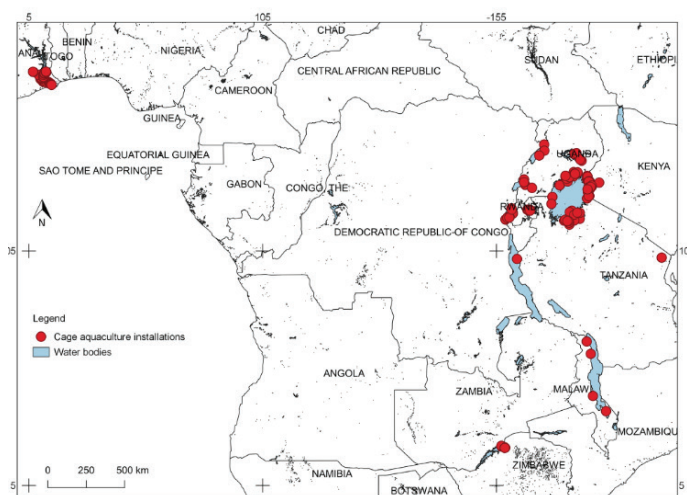


Fig. 2: Distribution of cage aquaculture installations on African Inland waters (Musinguzi et al., 2019)

4. POLICY INTERVENTIONS

In order to promote economically efficient, gender sensitive and environmentally responsible cage aquaculture development, the following policy interventions are recommended:-

- Develop best management practice guidelines and regulatory framework for cage aquaculture.
- Provide allocated zones for cage aquaculture (AZA), and establish efficient permitting process for farms.
- Conduct environmental, social impact and carrying capacity assessments of identified AZA.
- Facilitate access to finance.
- Establish fish health management, fish disease diagnostic and water quality monitoring infrastructure and extension services.

- Promote the participation of Public-Private Partnerships (PPP) in cage fish farming investments and governance platforms.
- Facilitate the establishment of shore based infrastructure for logistics such as; the provision of quality seed, fish processing and services to the cages operations (e.g. feed storage, cages services and service vessel access).
- Promote capacity building of value chain actors.
- Facilitate empowering interventions for gender and youth inclusion in cage aquaculture opportunities.
- Provide incentives for the establishment of farmer cooperatives to enable economies of scale for the collective buying of input supplies and marketing of products.

5. PRIORITIZATION OF CRITICAL POLICY AREAS

5.1 Legislative Framework

No	What are the issues	What are the problems/challenges related to the issue	Recommendation/strategic approach
1	Legislative Framework	<p>Policy:</p> <ul style="list-style-type: none"> • Fragmented or lack of policies in some countries • Policy and legal framework responsiveness to dynamics of Cage Aquaculture (<i>primary policies include fisheries, water, navigation, environment</i>) • Inadequate Regulations/ Laws Guidelines Standards and Good management practices 	<ul style="list-style-type: none"> • Where absent put in place. • Where fragmented harmonize under AU (of policy framework) • Continuous Gap Analysis and Updating • Establish appropriate thresholds on minimum acceptable environmental parameters for Intensive Cage farming

5.2. Critical inputs

What are the issues	What are the problems/challenges related to the issue	Recommendation/strategic approach
Critical inputs	<p>Seed:</p> <ul style="list-style-type: none"> • Inadequate quantity of seed • Quality of seed e.g. genetics, growth performance and unregulated translocation of genetic material • Limited availability of improved genetics <p>Feed:</p> <ul style="list-style-type: none"> • Domestic feed industry is poorly developed • The cost of feed is high • Quality of locally produced feed is still below standard 	<ul style="list-style-type: none"> • Encourage Private Public Partnerships to bridge the gap between demand and supply • Enhance capacity to develop pathway towards improve genetics • Dedicated training on feed formulation and practice in Cage culture system • Capacity building on human technical and technological training in genetics improvement

5.3 Capacity building

No	What are the issues	What are the problems/challenges related to the issue	Recommendation/strategic approach
3.	Capacity building	<ul style="list-style-type: none"> Institutional capacity- infrastructural, Technological Capacity, Financial-access to finance and credit, Technical- appropriate Scientific innovation and technology 	<ul style="list-style-type: none"> Mandatory needs assessments before conducting the training Organize an elaborate cage culture curriculum at a competent center of excellence and private sector Enabling the financial institutions gain awareness of the peculiarities of intensive cage culture as a viable business, development financing and Angel investors to understand the dynamics of aquaculture financing Improve infrastructure capacity to produce quality inputs

5.4 Gender, youth and Marketing

No	What are the issues	What are the problems/challenges related to the issue	Recommendation/strategic approach
4.	Gender, Youth	Inadequate Gender and youth inclusion in the value chain.	<ul style="list-style-type: none"> Gender and youth empowerment in the response to inequalities along the value chain
5.	Marketing	<ul style="list-style-type: none"> Underdeveloped supply chains Inadequate cold chain facilities and logistics Inadequate traceability systems Lake of value addition Low consumer awareness and acceptability of aquaculture products. Tariff and nontariff barriers Inconstancy of quality, quantity and price 	<ul style="list-style-type: none"> Harmonize trade policy between countries Harmonize definition of quality throughout the economic blocks Promote aggregated production strategies like aqua-parks across the continent

6. WAY FORWARD AND RECOMMENDATIONS

1. The AU-IBAR should facilitate cooperation between Regional Bodies and Member States for the development of sustainable cages aquaculture.
2. Member States should facilitate special interventions to engage the private sector and financial institutions in cage aquaculture development and investment.
3. African regional fisheries and catchment bodies should facilitate the harmonization of policies and legislation governing cage aquaculture.
4. Encourage research by Centers of Excellence (CoEs) into feed, seed, and integration of complementary aquaculture species, (for example, aquatic plants) to reduce the environmental nutrient load from cage aquaculture.
5. Member States should encourage cage aquaculture skills capacity building initiatives including short courses, on-farm internships and on-the-job mentorship.

7. ACKNOWLEDGEMENT

Members of the Aquaculture Training

8. BIBLIOGRAPHY

- LVFO 2021. Cage Fish Farming Policy for the East African Community. Final Draft Report
- Musinguzi et al., (2019) full reference
- The aquaculture training report