

Review of Fisheries and Aquaculture Policies in Ghana



INITIATIVE ON
Aquatic Foods

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Introduction

This technical brief provides an overview of the formal policy context of Ghana's fisheries with a focus on aquaculture, which can be traced back to the 1950s (Abban et al. 2009). Despite the focus on inland fisheries, the policy architecture tends to bring both marine and inland fisheries under the same broader legislative frameworks. Formal policies entail governance arrangements such as laws, policies, plans and regulations. Informal policies are based on customs accepted by local traditional authorities; such local practices may or may not be accepted by formal authorities or the state (FAO et al. 2023).

Fish is the main source of protein for most of the households in Ghana (FAO 2016). Fisheries and aquaculture account for 4.5 percent of the National Gross Domestic Product (GDP) which is about 12 percent of the agricultural GDP (Alhassan and Akongyuure 2020; World Bank 2019). The sector is gendered – men mostly undertake the actual fishing, while women are engaged in postharvest activities (Appiah et al. 2021). Aquaculture production in Ghana largely focuses on the Nile tilapia and catfish, representing 43 percent of the freshwater fish production in Ghana (World Bank 2019). Majority of aquaculture farms employ the extensive culture system using cages, ponds, tanks, dams, dugouts and reservoirs for the fish culture. Aquaculture production offers an opportunity to increase fish supply especially in light of the declining fish catches from the marine sector. The country has a per capita fish consumption of 26 kg which is 6 kg above the global average of 20 kg/per capita (World Bank 2019). Fish is deeply central to Ghana, providing employment, nutrition and financial security (Akongyuure et al. 2017; Bene et al. 2015).

This technical brief is based on a literature review assessing the legal framework governing fisheries (specifically aquaculture) in Ghana. This entails deploying historical and current perspectives in surveying the laws and policies governing fisheries. Aquaculture has largely been governed by the fisheries legislations. This report also outlines the fisheries and aquaculture management plans and other frameworks which govern aquaculture management in Ghana.

Fisheries and aquaculture in the context of Ghana

Ghana is a country in West Africa with a total population of 30.8 million of which 50.7 percent are women and 49.3 percent are men (Ghana Statistical Services 2021).

Aquatic foods account for 60 percent of Ghana's national dietary intake of animal protein (Rurangwa et al. 2015; Chan et al. 2019), about four times higher than the global average (Hishamunda et al. 2009). Ghana is an exception in the African continent with its high per capita fish intake of 26 kg. The current national fish supply deficit – filled by imports – is about 640,182.47 metric tonnes (t) or 50.10 percent of the total fish production as per the 2021 Annual Performance Report from Fisheries Commission. Marine fish production was the major source of Ghanaian fish production but has been declining since the past two decades. Fish production has decreased from 420,000 t in 1999 to 393,970 t in 2021 (FAO, 2016, Fisheries Commission, 2022). On the other hand, inland and aquaculture fisheries production has been on the increase. Aquaculture production has seen a steady growth since 2008 with significant increases in recent years. Ghana's new National Aquaculture Development Plan (2022–2026) targets an increase in the market share of commercially farmed fish from 14 percent in 2021 to 25 percent in 2027.

The map of Ghana, indicating its location and the constituent regions, is shown in Figure 1.

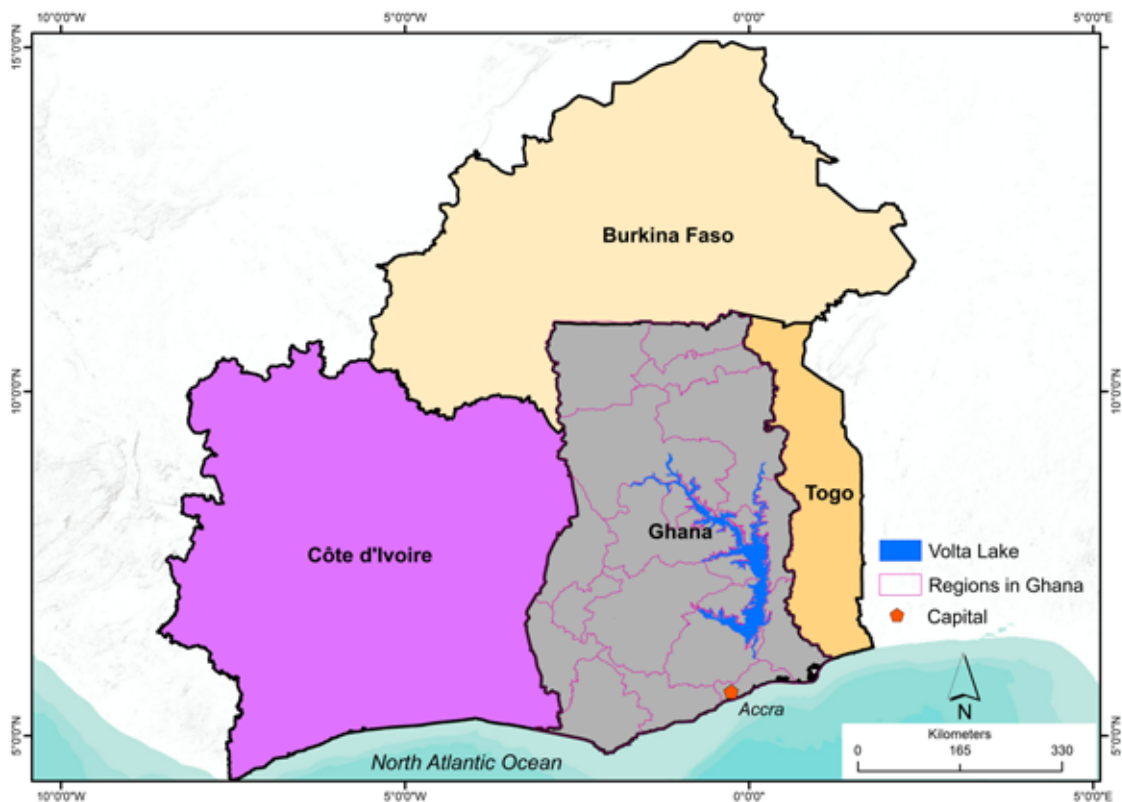
Aquaculture production in Ghana has grown from 5,590 t in 2008 to 76,630 t in 2018. Due to the incidence of infectious spleen and kidney necrosis virus (ISKNV) which attacked most cage fish farms on the Volta Lake, aquaculture production dropped to 52,360 t in 2019.

In the following year (2020), aquaculture production increased to 64,010 t which could be a result of government intervention to the sector by the provision of free vaccines to the affected fish farms. The aquaculture production further rose to 89,375.48 t in 2021 (Fisheries Commission 2022). Unlike capture fisheries, aquaculture is only expanding, with the potential to increase further (Statista 2023). Aquaculture growth was largely driven by large-scale cage aquaculture (Ragasa et al. 2022; Ragasa et al. 2018). In Ghana, tilapia remains the most popular cultured fish, with cage culture accounting for the largest share of fish production. Catfish output has witnessed major growth recently, with production reaching a high of 20,660.95 t in 2021 compared to 16,321.96 t in 2020 and 13,063.41 t in 2019 (Ghana Statistical Service (GSS), 2023).

Small-scale pond aquaculture has great promise for smallholder farmers to be engaged and derive livelihoods, with profit margins of about 27 percent (Ragasa et al. 2022). The Government of Ghana views aquaculture as enabling increasing fish production while creating employment and wealth creation opportunities (Fisheries Commission 2022). As a result, initiatives such as Aquaculture for food and Jobs (AfJ) were introduced, and the National Aquaculture Training Center was established in 2023 to create jobs and increase domestic fish production.

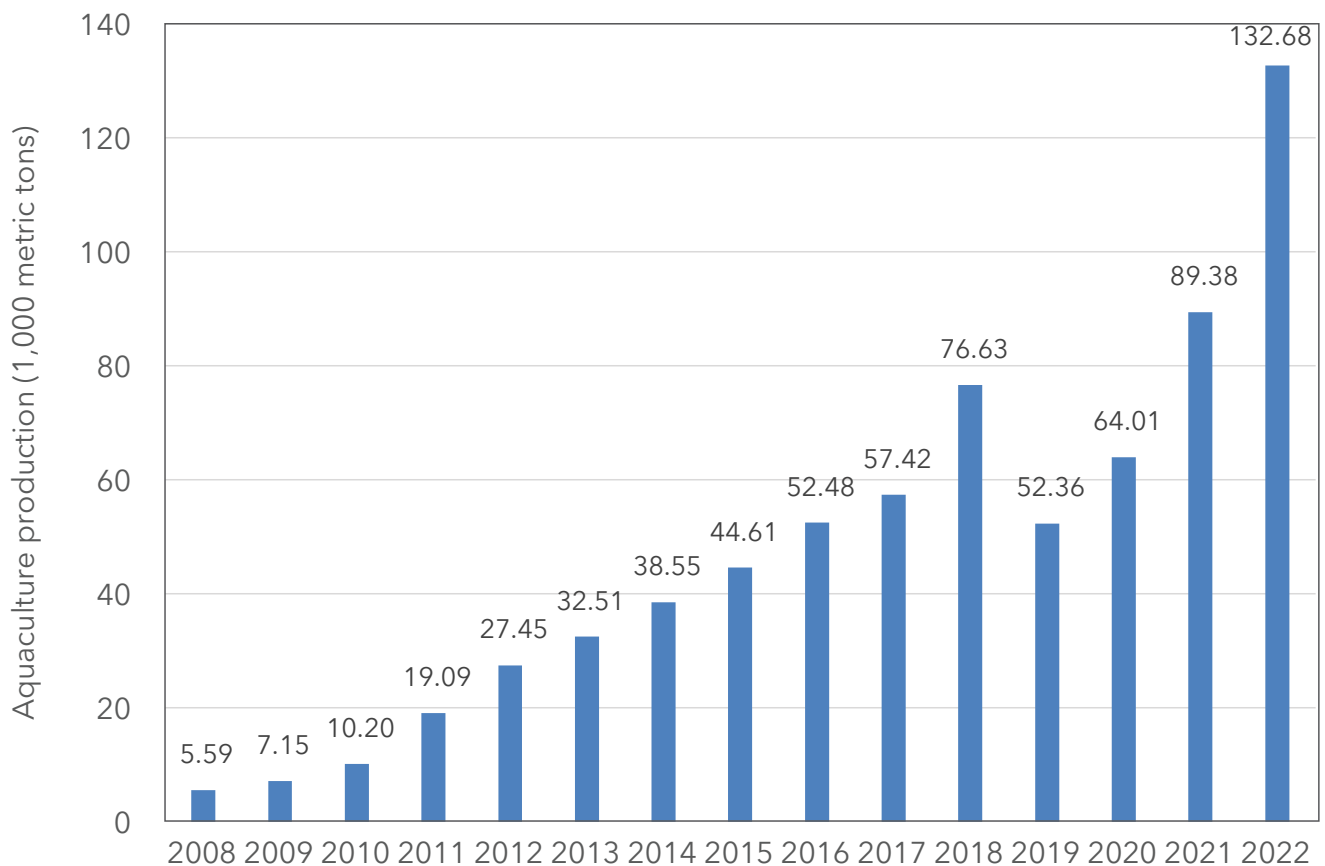
Figure 2 shows the aquaculture production figures in Ghana.

FIGURE 1. Map of Ghana showing the neighbouring countries and the administrative regions.



Source: Map created by Komlavi Akpoti, International Water Management Institute, Ghana.

FIGURE 2. Aquaculture Production from 2008 to 2021.



Source: <https://www.statista.com/statistics/1118781/aquaculture-production-in-ghana/> and Fisheries Commission 2022.

The expansion of aquaculture according to Ragasa et al. 2022 and Fisheries Commission 2022 is attributed to the following reasons:

1. The availability of an improved local tilapia (the Akosombo strain) since 2005.
2. Pro-aquaculture government policy support initiatives – pro-aquaculture policies successfully aided the growth in the aquaculture sector witnessed from early 2010s.
3. Improved hatcheries and grow-out production systems.
4. Presence of high-quality feeds in the local market (Ragasa et al. 2018).
5. Market availability due to demand exceeding supply (Fisheries Commission 2022).

Aquaculture contribution to the economy

The contribution of fisheries to the GDP has been declining from 1.49 percent in 2013 to 1.04 percent in 2021 (Fisheries Commission 2022). Table 1 details the contribution of aquaculture to the GDP.

Fisheries legal architecture

The evolution of the key Fisheries Legal Framework in Ghana and its implication on aquaculture has been summarized in Table 2.

Table 1. Fisheries and Aquaculture contribution to Ghana’s Gross Domestic Product.

Subsector	2013	2014	2015	2016	2017	2018	2019	2020	2021
Marine	1.04	0.92	0.99	0.92	0.77	0.62	0.60	0.67	0.68
Inland	0.37	0.34	0.36	0.32	0.21	0.21	0.20	0.19	0.26
Aquaculture	0.08	0.09	0.11	0.11	0.13	0.12	0.08	0.08	0.10
Total	1.49	1.35	1.46	1.35	1.11	0.95	0.88	0.94	1.04

Source: Fisheries Commission 2022.

Learnings from fisheries and aquaculture policies and governance landscape

The brief technical review of the fisheries and aquaculture policy terrain in Ghana as well as insights from the current IWMI-FC- CSIR WRI ongoing piloting of the aquaculture interventions in four small water infrastructure (dams) help underscore the following thematic discussion points.

Sound Policies - Link with Practice

Ghana has robust policies and legal frameworks which govern the fisheries and aquaculture sectors. The policies, however, need to be enforced and implemented for better development outcomes. For instance, the policies recognize the importance of science and innovation within the fisheries sector to further enhance aquaculture productivity. However, the Ministry of Fisheries and Aquaculture Development (MoFAD) lacks adequate resources to ensure increased productivity. At times, even the allocated budget, already low, is not fully disbursed to MoFAD which further undermines the aquaculture activities. While MOFAD tends to have one of the smallest budgets in Ghana, on occasion it does not receive its full allocation from the Ministry of Finance.

Table 2. Key legislation governing the fisheries sector in Ghana.

Legislation	Main Objective	Aquaculture Implication
Fisheries Act, 2002 (Act No. 625 of 2002) <i>(Appealed the Fisheries Law 1991 other than Part I, and the Fisheries Commission Act, 1993)</i>	Establishment of the Fisheries Commission, its roles, powers and functions. Development of fisheries management and development of fishery plans. Establishment of the Fisheries Development Fund	Licensing Fisheries Fund - "36 (c) to provide assistance to small scale fishery co-operative enterprises."
Fisheries (Amendment) Act, 2014 (Act No. 880)	Introduced international conservation and management areas. Introduces Illegal, Unreported, and Unregulated fishing and established fines for such activities.	Main focus is on marine and international fishing.
Wholesale Fish Marketing Act, 1963 (Act No. 156)	Designated fish markets largely for marine fisheries.	
Fisheries Regulations, 2010 (L.I. 1968).	These regulations aimed to operationalize Act 625.	Established Permit Requirements before aquaculture activity establishment. Provided guidance on aquaculture production and circumstances which result in the cancellation of permit. Regulates the importation of fish species.
Fisheries (Amendment) Regulations (L.I. 2217 of 2015)	Further tightened licensing and international cooperation in controlling illegal and unreported fishing.	Main focus is on international fishing and cooperation.
Guidelines for the registration & licensing of fishing vessels (industrial and semi-industrial) in Ghana	Stipulated detailed guidelines for fishing vessel construction, acquisition, registration and fishing permits	Largely not applicable for aquaculture.
Fisheries Regulations, 1979	Addressed fishing methods, regulations and also stipulates the requirements for importing live fish into Ghana, as well as sea worthiness of boats.	Importation of live fish has implications on aquaculture.
Fishing Boats (Certificate of Competency First Class and Second Class Engineers) Regulations, 1974	Provided for the qualifications and certification for fishing vessel engineers.	Largely for marine fisheries
Fishing Boats (Certificate of Competency as Skippers and Second Hands) Regulations, 1972.	Qualifications and certification of skippers and second in hand.	
Ministerial Directive Regarding the Implementation of Closed Seasons for Industrial Trawlers under The Fisheries Management Plan of Ghana (2015-2019)	Aimed to enforce the closed season for fishing by the industrial trawlers in line with the 2015-2019 fisheries management plan.	Not applicable
Draft Aquaculture Development Plan (GNADP) 2022-2026	Enhanced aquaculture production which is responsive to the current political, social, and economic context.	Increased aquaculture investment and production. Eased the registration for aquaculture projects.

Source: Compiled from Acts, FAO Database and Fisheries Commission 2022.

Importance of Innovative and Applied Research

Breeding of fish is key to ensure that aquaculture productivity is high.

The Fisheries Commission does not seem to receive the adequate financial support despite the establishment of the Fisheries Fund. This further undermines the effectiveness of the aquaculture interventions given the potential contribution of this sector. The Akosombo tilapia strain, which has been a success in Ghana, now needs to be upgraded. There is need for continuous research into fish breeding to ensure that the sector has quality fish seed with good growth performance, disease resistance, and tolerance to a wide range of temperature fluctuations. New culturable species are also needed to increase variety and keep the industry vibrant.

Policy Harmonization

Cross sectoral policy harmonization is a major concern to ensure that, for instance, the aquaculture policies are aligned with the customs and import regulations for keeping feeds cost affordable because feed accounts for more than two-thirds of the input cost for the aquaculture farmers. Smart subsidies to enhance local quality fish feeds production in partnership with the Fisheries Commission and CSIR WRI might be a potential long-term solution in light of the government prioritizing aquaculture production. Small-scale fisheries benefit through discounted fuel costs under the National Premix Fuel Committee Regulations (L.I. 2233) despite the persistent fish decline in the marine sector. Special targeted subsidies could be planned within the aquaculture sector. These would require to be critically evaluated to safeguard against further distortions within the broader market and negative impacts on the resource base.

Multiple Use Systems

Multiple Use Systems which are holistic need to be incorporated for more efficient and productive aquaculture sector. Existing policies tend to be largely sector-specific. It is interesting to note that under the 1V1D initiative, the main thrust was on domestic water supply, livestock watering and crop irrigation with no considerations for aquaculture. With more than 300 additional small water reservoirs constructed in the northern regions of Ghana under the initiative, it could have offered opportunity for other uses such as aquaculture. The next phase of the 1V1D initiative should consider incorporating aquaculture in its design and implementation. This will allow future dams to ensure suitability for aquaculture production. It can increase the basket of benefits coming from small water infrastructure and will also contribute toward further improvements in nutrition and financial income streams, particularly in northern Ghana where access to fish is limited.

Innovative Financing Models for Aquaculture

The Government of Ghana developed a number of programmes, including the AfJ. The success of the programmes hinges on the availability of private sector financing, especially in light of limited state resources. It is, therefore, important to ensure that the programmes

developed also map out the funding sources from the private sector. Such plans can include stakeholder engagements to explore different funding mechanisms for the proposed programmes. Considering the risk associated with culturing fish, assisting farmers to engage and explore tailored insurance schemes is crucial.

One Health Perspective

Diseases are a major setback for the aquaculture, and more broadly, for the fisheries sector. However, it is important to understand such diseases within the larger purview of fish and human disease interactions to develop holistic solutions for addressing fish diseases.

Gender Equality and Social Inclusion

Aquaculture should offer an opportunity for increasing opportunities for women, youths and other marginalized communities in line with Sustainable Development Goal 5. The Government of Ghana has identified this gap as part of AfJ. However, for more informed gender inclusion, evidence of gender barriers needs to be provided for women, youths and other vulnerable communities to generate benefits from technical aquaculture innovations. Unlocking such identified barriers will ensure that the technical solutions are grounded within the social context where the innovations are being introduced. Such an approach will avail more sustainable aquatic investment solutions.

Disconnect Between Policy and Implementation

One of the confounding challenges in Ghana, and sub-Saharan Africa at large, is the large number of policy instruments which have been developed but remain unimplemented. While policies are important, they are not sufficient to bring about on-ground transformation of men, women and youths. A number of reasons have been offered, of which one is the lack of financial resources to implement the mandate that the law provides. Within the broader fisheries sector in Ghana, the enforcement of marine fisheries permit system is an example. This has not been very effective due to limited capacity and resources to patrol the Ghanaian waters. Feed costs are a major expenditure within the aquaculture sector, covering more than 70 percent of the total production cost. However, not enough funds have been invested to ensure that Ghana's fish feed requirements are produced locally and reduce the impact on foreign exchange demands and price volatility risk on aquaculture farmers. Other reasons provided at the sub-Saharan level are that policy initiatives are sometimes inspired from the international level; there may be insufficient capability and willingness to enforce them at national level.

Quality Fingerling Production and High Feed Cost

Productivity of aquaculture is impacted by the quality of the fingerlings that the farmers are able to access as well as the high cost of fish feed. In Ghana, fingerling production will not be able to cater to the projected increase in aquaculture production. Plans to increase

both public and private quality fingerling production – located strategically across different parts of the country – are thus vital. The role of the private sector needs to be promoted because the share for fingerling production by the private sector has ballooned from 1 percent to 90 percent (Abban et al., 2009). Similarly, the private sector and farmers should be trained and assisted in quality local feed production to reduce the high input cost. While increased fingerling production and local feed production are welcome, the regulatory role of the state must be further enhanced to guarantee compliance with standards and good practices which might end up being compromised in pursuit of profits. The recently held aquaculture conference from 26 to 27 April 2023, revealed that some ongoing fish vaccination activities could only muster limited engagement of the state.

Conclusion

This technical brief has outlined some of the broader issues on fisheries, and more specifically on aquaculture in Ghana. Aquaculture can significantly contribute to offsetting the declining rate of marine and inland capture fisheries. Beyond good policies, practical implementation strategies and resources are necessary for the effectiveness of fisheries and aquaculture policies in Ghana. This calls for a strategic policy and practice reflection to secure the promotion of individual and collective action for enhancing aquaculture production. Encouraging multiple use systems under the 1V1D programme and the AfJ will offer nutrition, employment and income opportunities for women, youths and other vulnerable members of the community. Policy harmonization and sustainable financing mechanisms will also ensure the sustainability of the project.



Women from the Nansoni community, a beneficiary group of the IWMI aquaculture pilot, showcasing their first cycle of fish harvest in May 2024 (photo: Sander Zwart).

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Cover photo: Youth in Nansoni preparing for fish harvesting in May 2024 (*photo:* Big Point Ghana).

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