

Aquatic Health Information Brief: Ghana



Summary information

Customs and borders

1. International airports (1):

a. Kotoka International Airport

2. Official Land border crossing points (48)

3. Bordering countries (3):

Togo, Burkina Faso and Cote D'Ivoire

4. Coastal customs ports (2):

Tema and Takoradi

Veterinary services

<https://mofa.gov.gh/site/directorates/technical-directorates/veterinary-services>

Key contacts supporting national aquatic health management

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Main fish pathogens and health conditions detected in Ghana

- Streptococcus agalactiae* 1b, 1a, III - 1b – in 2015/2016, leading to collapse of number of small- and mid-scale farming businesses. *Streptococcus iniae* also detected. *Streptococcus spp.* associated with high mortalities in cages and hatcheries around Lake Volta.
- Flavobacterium columnaris* - minor outbreaks in farms during season transition in March/April and October/November.
- Aeromonas spp.*, *Edwardsiella spp.* – minor outbreaks seen in catfish farms.
- Range of common ectoparasites including Trichodinids/Gill flukes/Myxozoan parasites.
- Intestinal Parasites *Ascaris*, *Argulus*; Fungal: *Saprolegnia*.
- Infectious Spleen and Kidney Necrosis Virus (ISKNV) - outbreak on Lake Volta between Oct 2018 and Feb 2019. Led to 70% kill of standing crop of many cage farms on the Volta Lake and river below.

Private sector background

Before 2015 there was relatively limited use of chemicals or treatments for fish disease, except by larger companies. However, post 2015 there is far more widespread use of chemical and pharmaceutical treatments – often unregulated – around the Volta Lake and nearby hatcheries, cages and ponds. These include antibiotics, probiotics and, since 2018, licenced vaccines. Formalin, methylene blue, salt, potassium permanganate, copper sulphate etc. are also used – mainly in hatcheries. There is some use of natural treatments e.g., neem, garlic etc. on farms and heat shock treatments by several hatchery operators. In 2016 French pharmaceutical company Virbac introduced *Streptococcus agalactiae* vaccine starting with strain 1b then later including 1a, and have been vaccinating fish commercially in Ghana since allied to feed supplier Cycle Farms. Raanan Feeds also provide fish health training and advice as part of their customer service. UK Ridgeway Biologicals and Dr Gustavo Ramirez have delivered diagnostics and autogenous vaccine development on farms. Some Ghanaian consultants advise on husbandry and fish health related problems. This can range from reducing stress through better management practices, to farm biosecurity, and different treatments including prophylaxis.

Private sector background

ASA/WISHH has provided fish health technical support to farms through experts like Dr Jeff Terhune, Karen Veverica and John Domozoro.

The Ghana Chamber of Aquaculture have been piloting a fish farmers insurance scheme since late 2021, and run a series of webinars on fish health with external aquatic animal health experts. The Fisheries Commission (FC) has organized training programmes for farmers on husbandry/fish health i.e. understanding occurrence of diseases in aquatic environment, biosecurity, use of drugs and chemicals in aquaculture.

Infrastructure and Legislation: FAQs

1. Does the government have a specialised unit for aquatic health?

Yes. The Fish Health Unit originally set up in 1998. Now with four new veterinarians posted from VSD to the FC to cover regional areas.

2. Are aquatic health diagnostics laboratories accessible and affordable to the majority of aquaculture farmers?

No dedicated facilities operational yet, but FC are using Accra Vet Laboratory. With assistance of NORAD, the Norwegian Veterinary Institute, WorldFish, and University of Ghana, FC are establishing three fish health diagnostics labs in Accra, Koforidua, and Akosombo under AHA project. Labs should be functioning and operational by December 2022. World Bank supported a dedicated lab in Accra and rehabilitated Koforidua, Kumasi and Takoradi vet labs to include dedicated aquatic health sections. Recently NORAD/Norwegian Veterinary Institute supplied some of necessary lab equipment.

3. Does the government have any bans or limitation on introducing live fish into the country – or moving live fish within country?

In 2014 frozen tilapia import was banned as protective measure to support industry growth and mitigate against disease incursion.

In 2018, a Directive banned all imports of live fish (ornamental or aquaculture) from 1 July – 31 Dec 2018. This followed reports of unknown fish mortalities on local farm and aimed to protect the country against Tilapia Lake Virus (TiLV) emerging elsewhere.

In Dec 2018, upon report of large mortalities in Volta Lake area, FC invoked Regulation 56 which requires a fish farmer to obtain a permit to move any live fish including fingerlings, from one farm to another. Regulation 56-6 of Fisheries Regulations Act 2010 (L.I 1968) specifically states: "Commission may refuse to give permission for transfer of (live) fish if the fish to be transferred come from: (a) an infected establishment, or (b) a district that has an outbreak of disease. In reality the enforcement of these bans proved to be challenging due to inadequate govt staff/resource allocated for monitoring and surveillance. Also, difficult to enforce as no operational fish diseases diagnostic lab in country and the majority of fish farmers remain unregistered with the government.

4. Does the government have any specialist legislation on aquatic health?

No specialist legislation exists on aquatic animal health, however, Fisheries Regulations 2010, L.I.1968 has some legislation on disease control measures. "Executive Instruments" can be issued by the minister under Diseases of Animals Act, 1961 ACT 83, as recommended by the aquatic animal health policy guidelines i.e., suspension of live/dead fish movements from farm experiencing large mortalities temporarily, or ban on tilapia imports. This Act is regarded as outdated for aquaculture as the sector minister referred to in the Act is the minister for Agriculture and not Fisheries and Aquaculture. Regulation 56 of Fisheries Regulations 2010, L.I 1961 is usually invoked to enforce these bans on fish health grounds. An Aquatic Animal Health Policy was developed which received Cabinet approval in 2018 with an implementation plan. In 2012, the Guidelines on Aquaculture were developed, but have not become a legal instrument.

Further reading

1. Chutchai Piewbang *et al*, 2022. Dual infections of tilapia parvovirus (TiPV) and tilapia lake virus (TiLV) in multiple tilapia farms: Their impacts, genetic diversity, viral tropism, and pathological effects *Aquaculture Volume 550*, 15 March 2022, 737887.

2. Leschen W, Duodu S, and Addo S, 2022. National Fish Health Case Study for Ghana. Illustrated 26 pp, accompanied with summary video February 2022 SARNISSA, University of Ghana, Msingi East Africa.
<https://thefishsite.com/articles/landmark-ghanaian-fish-health-case-study-released?fbclid=IwAR3hvOkv5WHqibNXKHhtvcJ0MvBVJSN86NzxoQ8XTrqPpsEaqD9FTFW2Gg>

3. Li Y W, Liu L, Huang P R, Fang W, Luo Z P, Peng H L, Wang Y X, Li A X, 2013. Chronic streptococcosis in Nile tilapia, *Oreochromis niloticus* (L.), caused by *Streptococcus agalactiae* *Journal of Fish Diseases* First published: 17 August 2013.
<https://doi.org/10.1111/jfd.12146>

4. Mona Dverdal, Kofitsyo Cudjoe, Edgar Brun, 2018. Investigation of tilapia mortality in Ghana. Norwegian Veterinary Institute ISSN 1890-3290 Report 17: 23pp.

5. Ramirez Paredes G *et al*, 2019. First detection of Infectious Spleen and kidney Necrosis Virus (ISKNV) associated with massive mortalities in farmed tilapia in Africa. *Emerging diseases of aquatic animals* July 2019.

6. Verner-Jeffries *et al*, 2017. *Streptococcus agalactiae* Multilocus sequence type 261 is associated with mortalities in the emerging Ghanaian tilapia industry. *Journal of Fish Diseases*.

This brief was produced as part of a series across a selection of sub-Saharan African countries. It was produced by a small team from ThinkAqua and Casammak Aquaculture and reviewed by local experts. Support for the data collection survey was provided by the Food and Agriculture Organization of the United Nations.

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