January 2023

Aquatic Health Information Brief: Kenya

Summary information

Customs and borders

1. International airports (3):
a. Jomo Kenyatta International Nairobi,
b. Moi International
c. Mombasa

2. Official land border crossing points (9):
Tanzania: Isebania/ Sirari, Namanga
Uganda: Malaba Port Victoria, Busia
Ethiopia: Moyale
Somalia: Dhobley (Lower Juba), el Wak, Lafey, Liboi

http://www.kenyafisheriesservice.go.ke/standards-trade/

3. Bordering countries (5):
Tanzania, Uganda, Ethiopia, Somalia, South Sudan (Ilemi triangle)

4. Coastal customs ports (1):
Kilindini harbour, Mombasa

5. For export/import live fish 3 documents are required:
a. Certificate of Compliance (Issued by KFS)
b. Export Permit (also KFS)
c. Fish Health Certificate (Issued by Directorate of Veterinary Services)

https://kilimo.go.ke/live-fish/

Key contacts supporting national aquatic health management

Fisheries Service	**1. Stanley Tonui, Fish Inspection and Quality Assurance Officer:** stanleytonui97@yahoo.com stanleykipdawn@gmail.com Tel: +254 724266857 **2. Paul Mumina, Senior Fisheries Officer:** paulmumiki@gmail.com **3. Dr Mary Opiyo, Kenya Marine Fisheries Research Institute (KMFRI):** marybede@gmail.com	**Universities and research institutes**	**1. Professor Paul Gichohi Mbuthia, Associate Professor Pathology and Microbiology University of Nairobi:** pgmbuthia@uonbi.ac.ke **2. Dr Elick Otachi, Senior Lecturer Parasitology Egerton University:** elick.otachi@egerton.ac.ke
		Customs border	**1. Dr Willis Aduda Mboya, Busia One Stop Border Post:** adudaw@gmail.com Tel: +254 725696343
Veterinary Services	**1. Dr Naftaly Mwaniki, Senior Assistant Director Veterinary Services:** mwanikinaftaly@yahoo.com **2. Dr Joyce Thaiya, Senior Assistant Director Veterinary Services:** thaiyajcw@yahoo.com	**Private sector**	**1. Dr William Kibet:** willysboris@gmail.com Tel: +254 726321430 **2. Ms Joyce Lugonzo:** Tel: +254 722251640

Main fish pathogens and health conditions detected in Kenya

Data on fish diseases is still limited. Recorded and published cases of fish pathogens are as follows: Fungal: Saprolegnia. Parasitic: White spot disease, fish lice (Argulus), Neascus, Scutogyrus *(Scutogyrus gravivaginus, Cichlidogyrus (C. halli, C. tilapiae, C. sclerosus)*. Bacterial: *Aeromonas hydrophila, Pseudomonas fluorescens and P. aeruginosa, Edwardsiella tarda, Flavobacterium columnare, Mycobacterium fortuitum, Streptococcus iniae*. Viral: Infectious Hematopoietic Necrosis Virus (IHNV) in Rainbow trout. Mugimba et al (2018) reported detection of Tilapia Lake Virus (TiLV) in farmed and wild fish in Lake Victoria.

Private sector background

Kenyan freshwater aquaculture has commercialised in the last seven years, especially grow-out of tilapia in cages in Lake Victoria and associated hatcheries. This follows many years of government and donor-funded projects aiming to develop inland small-scale pond culture of tilapia and catfish. The limited production and intensity of these systems meant that fish diseases were never a significant problem. Cage culture of tilapia is characterised by the presence of a few larger farms (one producing several thousands of tonnes, supplying local markets), a handful of mid-scale units producing 50 - 500MT annually and hundreds of smaller cage farms each producing very small volumes. The growing commercialisation, intensification and proximities of these cage farms presents warnings for the future and a call for effective regulation monitoring and development of fish disease infrastructure within the country. In last four years there have been reported mortalities in cages but investigation into causes has been limited and investment in solutions tends to be something only the largest farmers explore. To date most mortalities recorded within cages have been attributed to lake stratification and water quality problems. The reported 2018 detection of TiLV is being further assessed by an FAO-led screening and molecular-based testing programme for TiLV in Lake Victoria. It should be noted there are also a number of, primarily Dutch-supported, recirculating aquaculture system (RAS) grow-out farms for tilapia around Nairobi and Western region, a small trout farming sector centred around Mount Kenya, and a growing coastal mariculture sector producing milkfish, tilapia, mud crab and potential new aquaculture species such as rabbitfish, and seaweed cultivation.

Infrastructure and Legislation: FAQs

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

Presently most of the existing expertise (and publications related to aquatic health) come from the Kenya Marine Fisheries Research Institute (KMFRI).

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

Most fish disease diagnoses are done for research purposes (at universities, research institutes) or on demand by private entities. Swedish government funded 2017 project (https://www.makiber.com/en/proyecto/laboratorio-control-de-calidad-en-kenia/) constructed and fully equipped laboratories at Nairobi, Kisumu and Mombasa. These are managed by Kenya Fisheries Service (KeFS), but are yet to be commissioned. These labs will be actively involved with fish quality control and fish health diagnoses for parasitic, bacterial, fungal and viral infections (http://www.kenyafisheriesservice.go.ke/laboratory-services/) in accordance with ISO 17025. They will also conduct analysis of fish, water, sediments and fish feeds for chemical, parasites, and microbiological parameters to ensure compliance with fish safety and quality requirements.

Other non-specialist public laboratories include:

a. Kenya Bureau of Standards (KEBS) Nairobi (ISO 17025 accredited) undertakes limited fish pathogen testing. Contact: info@kebs.org
https://www.kebs.org/index.php?option=com_content&view=article&id=94:microbiology-laboratory&catid=30&Itemid=161

b. Directorate of Veterinary Services (Kabete veterinary laboratories, Nairobi). The lab conducts diagnoses on animals, including some on aquatic animals. Contact: Tel 020 8043441.

General private laboratories include:

a. ILRI (International Livestock Research Institute) Nairobi livestock research.
Contact: ILRI-Kenya@cgiar.org

b. Bureau Veritas International organisation Kenyan branch: testing, inspection and certification. https://www.bureauveritas.ke

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

Live tilapia imports from any country into Kenya were banned in 2018 following the peer reviewed paper purportedly detecting Tilapia Lake Virus (TiLV) in Lake Victoria. The ban is still in force. Frozen fish (tilapia) from China was banned in late 2018 (November 2018 and the ban lifted by January 2019). https://www.theeastafrican.co.ke/tea/business/kenya-lifts-china-fish-ban-to-boost-supply-1412576

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

Not stand-alone, but contained in: (1) Fisheries Management and Development Act (2016) section 54, 55, 67; (2) Animal Diseases Act Cap 364, section 3, 4, 9 and 14; (3) National Veterinary Policy 1.4.7, 2.1.2; (4) Health policy 2012-2030, (5) Legal Notice 78 of 2020 - Verification of Conformity to Kenya Standards of Imports Order Sections 3, 5, 6, 7; (6) National Oceans and Fisheries Policy 2008; (7) Aquaculture policy 2011; (8) National Policy on Prevention and containment of antimicrobial resistance; (9) Antimicrobial use regulated mainly under the Pharmacy and Poisons Act (Cap 244), Food, Drugs and Chemical Substances Act (Cap 254), Medical Practitioners and Dentists Act (Cap 253), Animal Diseases Act (Cap364), Public Health Act (Cap 242), Pest Control Products Board (Cap 346), Veterinary Surgeons and Veterinary Paraprofessionals Act (Cap 366).

Further reading

1. Mary A. Opiyo, Esther Marijani, Patricia Muendo, Rezin Odede, William Leschen, Harrison Charo-Karisa, 2018. A review of aquaculture production and health management practices of farmed fish in Kenya. International Journal of Veterinary Science and Medicine, Volume 6, Issue 2, December 2018. Pages 141-148.
https://www.sciencedirect.com/science/article/pii/S2314459918300796

2. K K Mugimba, A A Chengula, S Wamala, E D Mwega, C J Kasanga, D K Byarugaba, R H Mdegela, S Tal, B Bornstein, A Dishon, S Mutoloki, L David, Ø Evensen, H M Munang'andu, 2018. Detection of Tilapia Lake Virus (TiLV) infection by PCR in farmed and wild Nile tilapia *(Oreochromis niloticus)* from Lake Victoria. Journal of Fish Diseases, Volume 41, Issue 8, August 2018. Pages 1181-1189.
https://onlinelibrary.wiley.com/doi/abs/10.1111/jfd.12790

3. Kyule-Muendo, D, Otachi, E, Awour, F et al., 2022. Status of fish health management and biosecurity measures in fish farms, cages and hatcheries in Western Kenya. CABI Agric Biosci 3, 18 (2022).
https://cabiagbio.biomedcentral.com/articles/10.1186/s43170-022-00086-7

4. Hearty M, 2022. Curbing Antimicrobial Resistance in Farmed Fish in Kenya. Science Africa, April 2022.
https://scienceafrica.co.ke/2022/04/11/curbing-antimicrobial-resistance-in-farmed-fsh-in-kenya

5. Govt of Kenya 2021. The State of Aquaculture in Kenya.
https://www.kmfri.co.ke/images/pdf/reports/State_of_Aquaculture_in_KE_2021_Report_fnal_report_Published.pdf

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