



World Organisation
for Animal Health



Training of National Focal Points for Aquatic Animal Health (Cycle IV)

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Zambia: AAH Networking

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Presented at the Training of National Focal Points for AAH

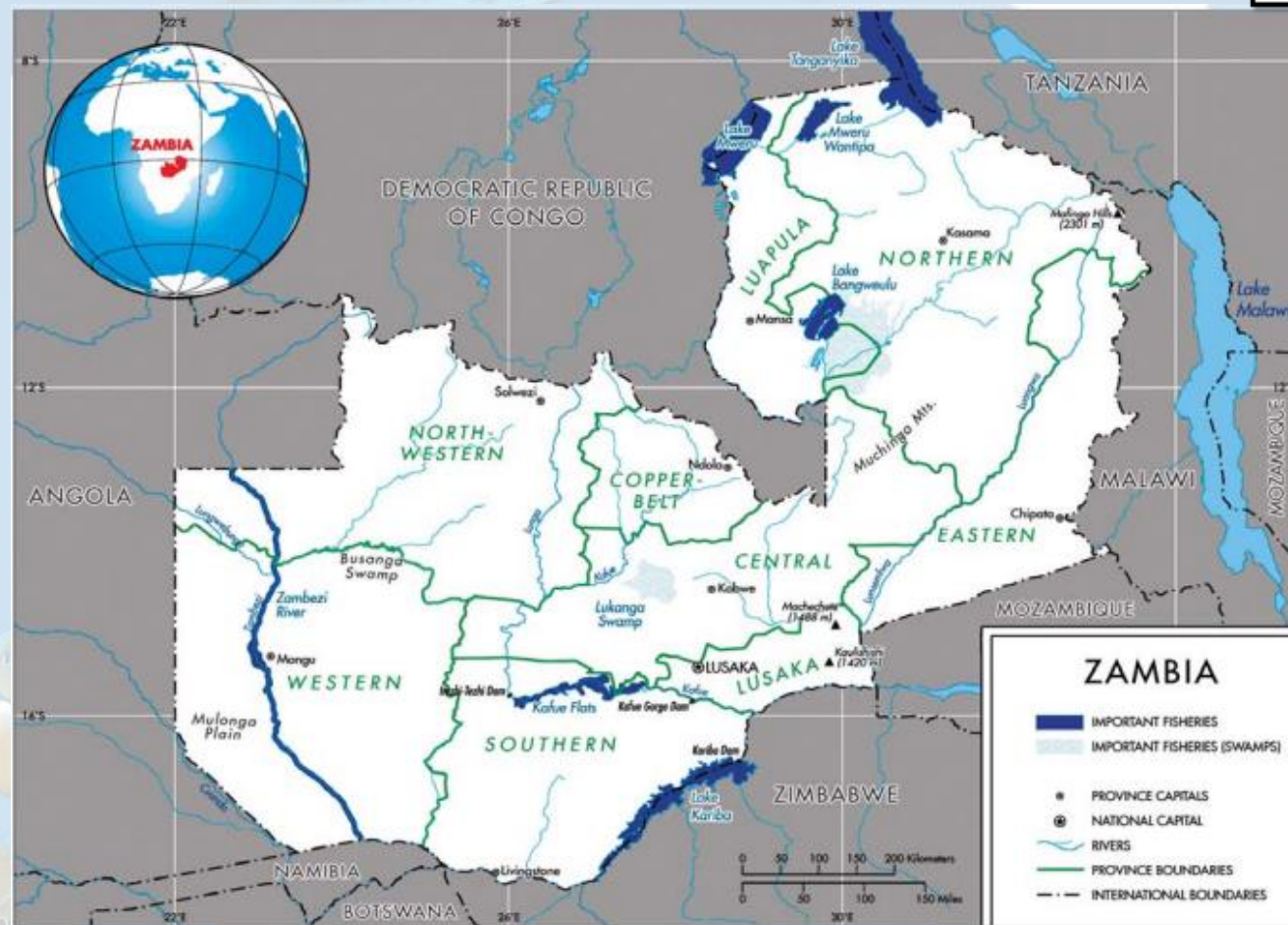
Onomo Hotel Hotel, Kigali Rwanda

4th October, 2023

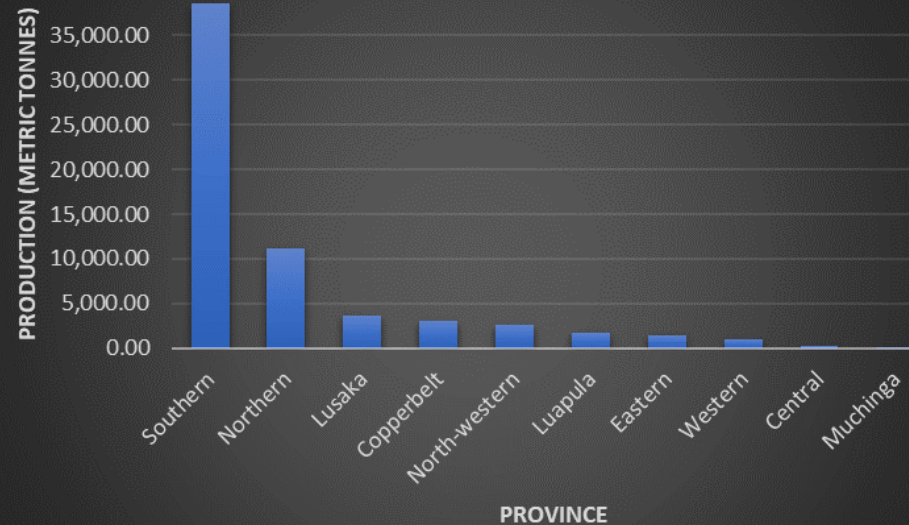
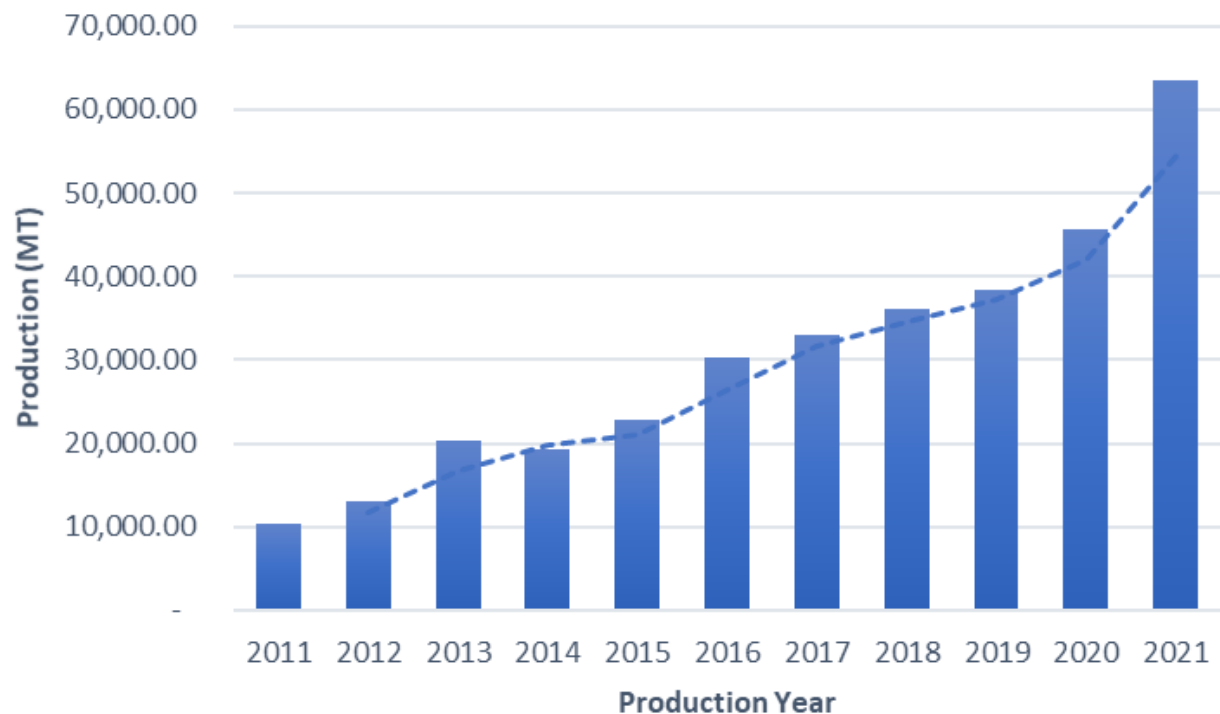




- 11 inland capture fisheries; 4 in the Congo basin, 7 in the Zambezi basin
- Capture fisheries comprise off-shore and inshore fisheries characterized by Clupeid and mixed species (cichlids, squeakers, catfish, characins), respectively
- Compliance to Regulations among artisanal fishers < 30%
- 39,259 fish ponds ≈ 600 Ha
- 1,304 fish-cages and pens
- 05 Major cultured species
 - *Oreochromis niloticus*
 - *Clarias gariepinus*
 - *O. andersonii*
 - *O. macrochir*
 - *Cyprinus carpio*



Aquaculture Production: Status



- Highest production is attributed to commercial cage production on Lake Kariba
- Tilapia (*Oreochromis* species) account for over 90% of cultured species
- Production continues to grow at an annual rate of $\approx 30\%$
- Increased access to financing in the sub-sector through ZAEDP/CEEC Seed-Fund facility
- Increased investment in fish-feed and fingerling production (304 Million)



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Fish-cages on Lake Kariba



Emergent fish-farmers harvesting fish from pond infrastructure



□ Aquaculture Production: Status



Fish harvest from fish cages on Lake Kariba



- Zambia has reported a rapid growth of the aquaculture industry, supported by increased investment in the sector, which has allowed farmers to adopt improved aquaculture practices
 - Currently the top producer of farmed Tilapia in the SADC
- Loss due to disease outbreaks is one of the limiting factors for economic development of many aquaculture enterprises in many countries of the world (Stentiford *et al.*, 2012; Tavares-Dias & Martins, 2017)
 - EUS in capture fisheries only until 2022 (diagnosed on a fish farm with poor biosecurity)
 - Bacterial pathogens commonly encountered in aquaculture
 - TiLV: Not detected

Shared Actions between Departments in Addressing Issues Relevant to Managing Diseases of Aquatic Organisms



- Following the first outbreak of EUS on the Zambezi River (2006/2007), An emergency investigation team was convened comprising experts from University of Zambia School of Veterinary Medicine, DVS and DoF
 - Financial resources were provided by the Min. of Fisheries and Livestock through DoF
- The team established that the main predisposing environmental factors associated with that EUS outbreak was the acidification of ground water during drought years and eventual contamination of surface water during the floods of 2006/2007
 - The Water Affairs Department played the crucial role of providing flood records



Positive outcomes

- FAO provided resources for:
 - Further disease surveillance and documentation: Infection with *Aphanomyces invadans*
 - Capacity building for field officers on:
 - Disease identification, sample collection, preservation and submission
- Further, FAO strengthened capacity of UNZA School of Vet. laboratory to diagnose EUS in the Zambezi River basin which covers Angola, Namibia, Botswana, Zimbabwe and Mozambique
- Helped create contact with the WOAHA EUS reference lab in Thailand
- WOAHA provided information on standards in EUS diagnosis

Shared Actions Between Departments in Addressing Issues Relevant to Managing Diseases of Aquatic Organisms



- Ministry of Fisheries and Livestock recognized the need for some form of aquatic animal health (AAH) and disease management system to be put in place
- They were also alive to the fact that this cannot be achieved by one department as it requires a multisectoral collaborative approach
- They saw it necessary to have a health specialist (Veterinarian with MSc. in Fish Pathology) work directly under the Department of Fisheries. That way the two departments could leverage on each other's strengths
 - DVS not conversant with fish handling, etc
 - DoF no health expertise



- Collaboration between Norwegian University of Life Sciences, University of Zambia and other Universities in Africa, on NORAD-funded projects-“Training and Research in Aquatic and Environmental Health in Eastern and Southern Africa” (TRAHESA) and “Enhanced Capacity for Aquatic Resources in East and South Africa (ECARESA)”.
- Academic degrees in AAH at MSc. and PhD levels
 - Increased number of people specializing in AAH in the country





- WorldFish became a strong collaborator (2017)
 - Started giving support in carrying out preliminary pockets of surveillance particularly for EUS and TiLV
- Sponsored a MFL officer to attend a meeting on TiLV preparedness in Penang, Malaysia
 - Lots of networking with other aquatic health experts
- Support towards capacity building of Zambian DVS and DoF staff at their facility in Abbasa, Egypt. This facilitated for more networking among AAH health stakeholders from different countries
 - More personnel have been exposed to basic AAH management procedures



ZAEDP Component 4: Aquatic Animal Health Management Improved-Technical Support from FAO



- FAO supported the leader of the AAH component to attend a round-table discussion on emergency preparedness and contingency planning
 - More networking with experts from institutions such as NVI and CEFAS
- Supported development of EUS and TiLV active surveillance plans using the 12-point checklist for surveillance of diseases of aquatic organisms





National Committee on
AAH Management
comprises individuals from
WorldFish, the Private
Sector, Academia and the
Government

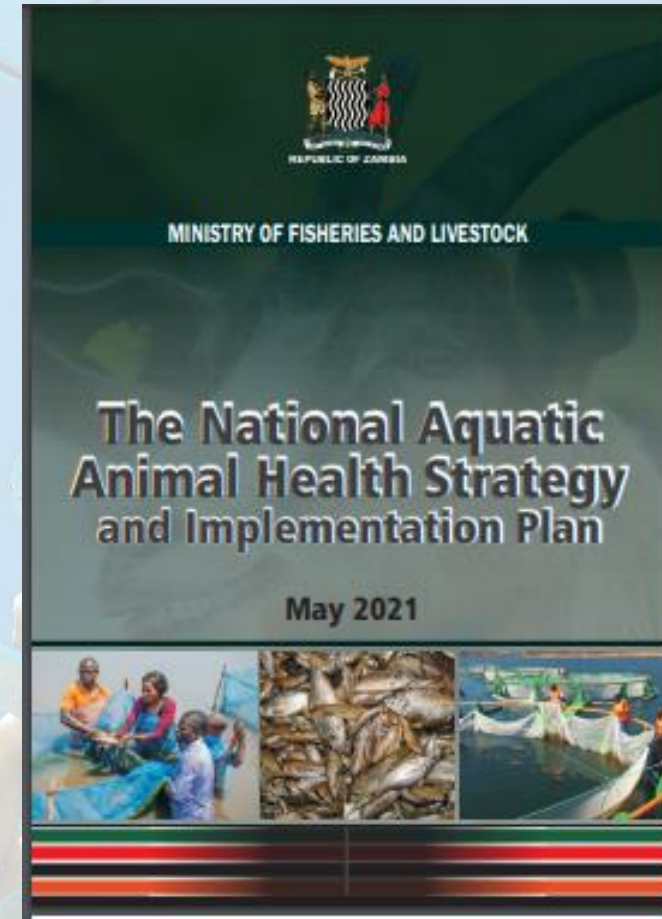




ZAEDP Component 4: Aquatic Animal Health Management Improved-Technical Support from FAO



- Committee developed the first ever Aquatic Animal Health Strategy for Zambia (May 2021)
 - Developing and implementing surveillance plans on important diseases such as EUS and TiLV



- Establishment of first ever laboratory dedicated to AAH
- Development of the National Pathogen List
- Approval of first ever AAH unit in Zambia
 - WorldFish drove the process



Collaborative Activities



□ On-going Collaborations



- Implementing Progressive Management Pathway of Aquaculture Biosecurity PMP/AB. We will be drawing on experiences from countries where FAO gave guidance in the operationalization of the PMP/AB
- Vaccine research. In collaboration with UNZA School of Vet
 - Bacterial pathogens affecting small-scale producers on Lake Kariba



□ New Collaborations



- CEFAS Under the Animal Health System Strengthening Project
 - Two colleagues in Zambia on a scoping mission
- AMR and AMU research- through APHA: Fleming Fund Fellow?
- Support towards targeted TiLV surveillance: To demonstrate freedom?
- Review of current Veterinary Para-professionals curriculum: day one aquatic animal health competences
- Train field staff in aquaculture hotspots: biosecurity and disease investigation (level I diagnosis)- Oct/Nov 2023
- Train lab staff: laboratory techniques including histopathology (Jan / Feb 2024)
- Twinning?
- Positive controls for EUS and TiLV for molecular diagnoses: establishment of assays for TiLV and EUS
- Development of regulations to help enforce the law and to support implementation of elements of the AAH strategy pertaining to movement of live fish, border controls
- Review early detection systems
- Establishment of pathogen-free zones





Thank you for your Attention!

