Moving Forward through Lessons Learned on Response Actions to Aquatic Animal Disease Emergencies in Zambia

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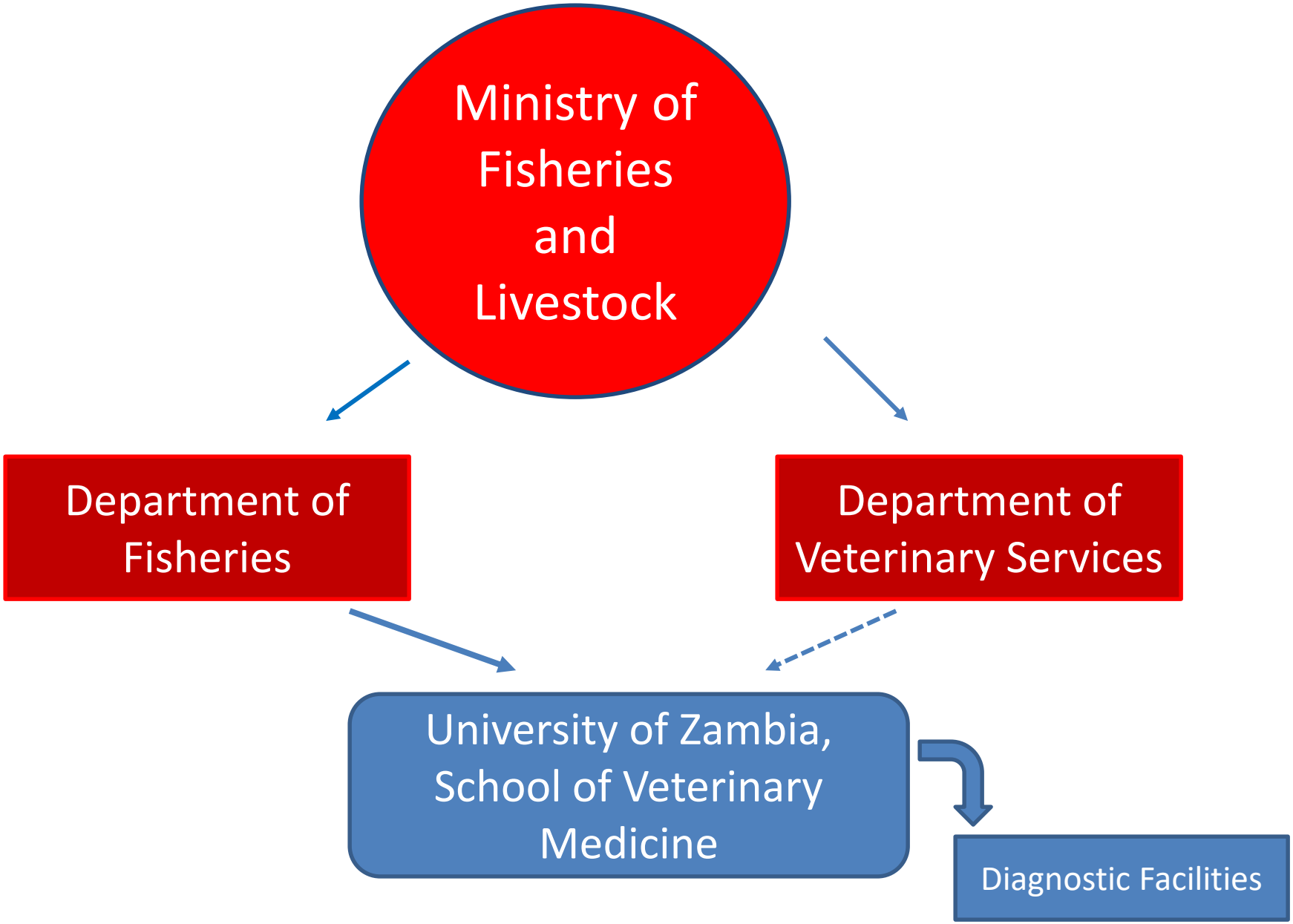
Round-Table Discussions: Moving Forward through Lessons Learned on Response Actions to Aquatic Animal Disease Emergencies FAO Headquarters, Rome, Italy 16th December 2019

Background

- Zambia has embarked on a massive aquaculture expansion drive. This means the industry is growing at a much faster rate than we think.
- As a result, the risk of diseases is growing.
- The country has had disease outbreaks in capture fisheries and aquaculture establishments.
- The diseases being Streptococcosis/Lactococcosis in aquaculture and Epizootic ulcerative Syndrome in capture fisheries

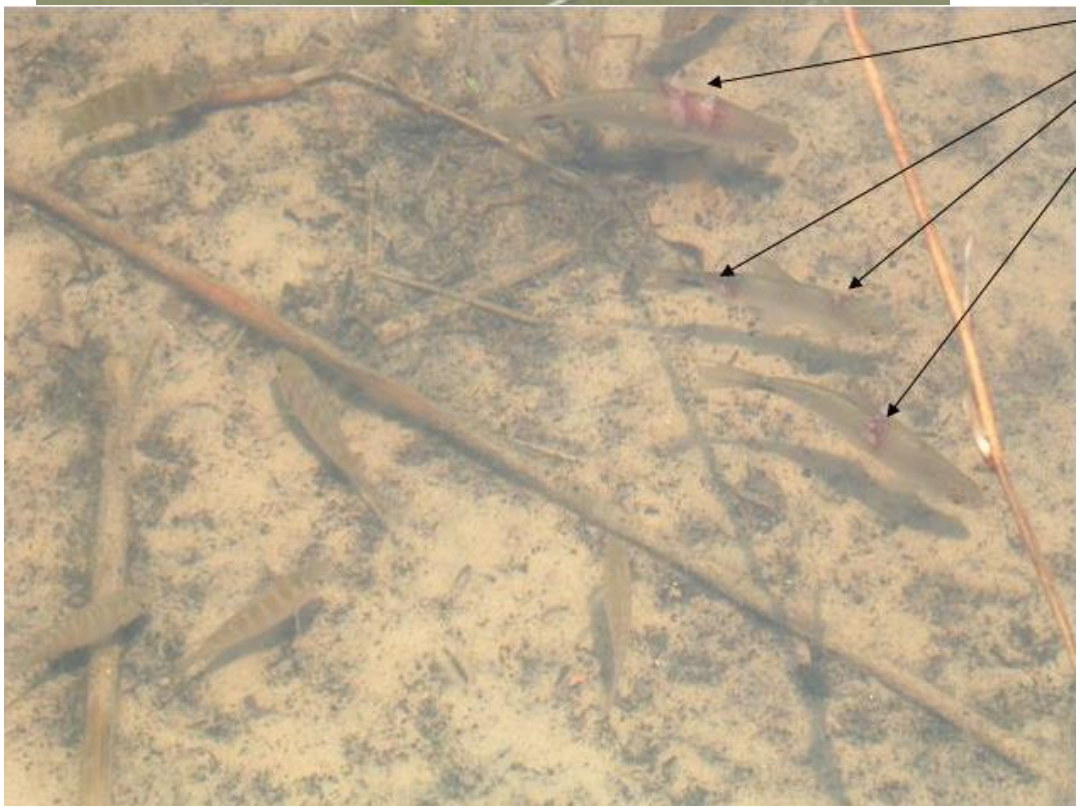
Africa and Zambia location map

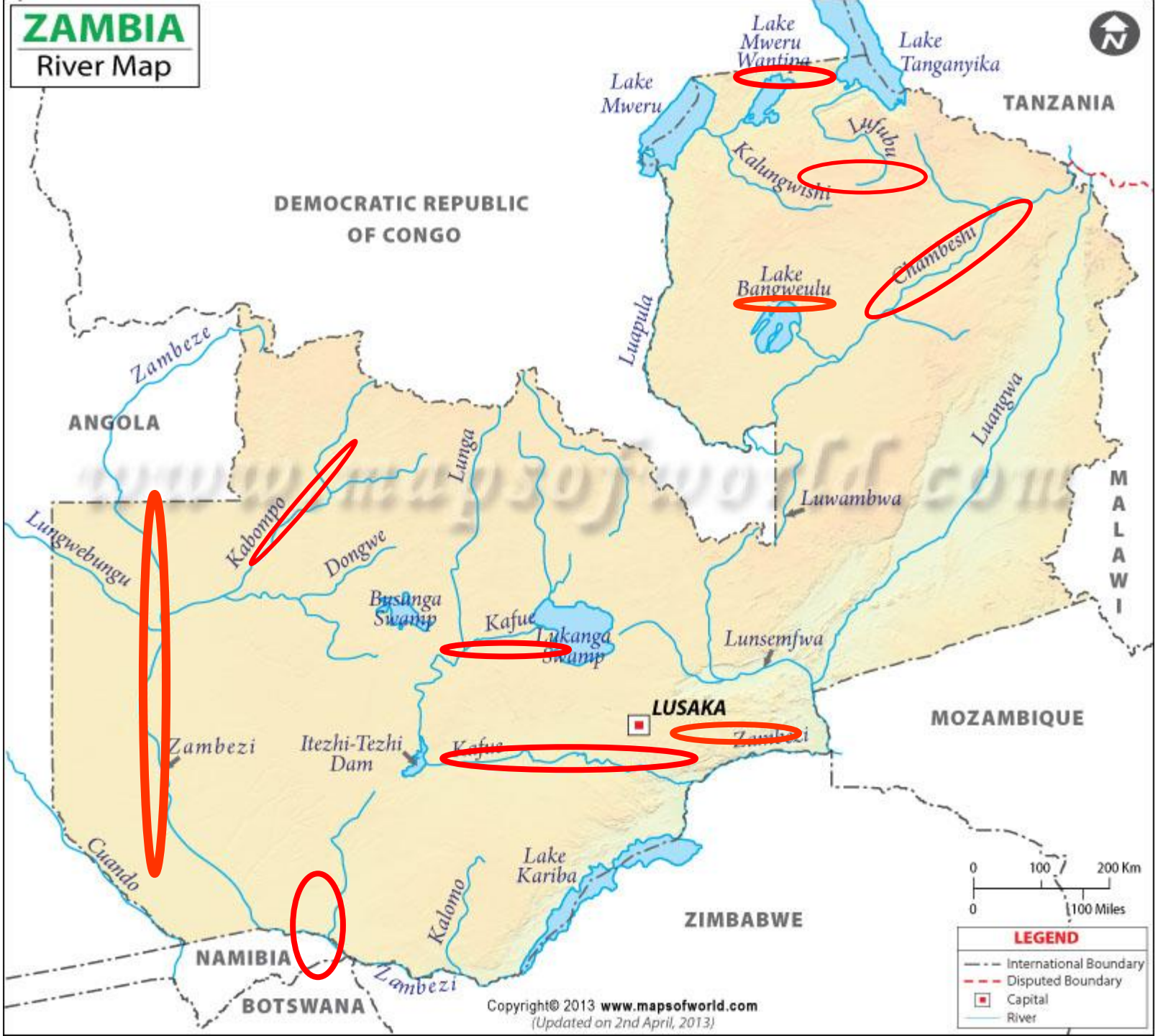
Institution role and relevant structure dealing with aquatic mass mortality events



Examples of MME

Scenario 1 Capture fisheries




ZAMBIA
River Map
Lake Mweru Wantipa
Lake Tanganyika
Lake Mweru
TANZANIA
Lufubu
Kalungwishi
DEMOCRATIC REPUBLIC OF CONGO
Chambeshi
Lake Bangweulu
Luapula
Zambeze
ANGOLA
Luangwa
Lunga
Luwambwa
MALAWI
Lungwebungu
Kabompo
Dongwe
Busanga Swamp
Kafue
Lukanga Swamp
Lunsemfwa
LUSAKA
MOZAMBIQUE
Zambezi
Itezhi-Tezhi Dam
Kafue
Zambezi
Cuando
Lake Kariba
Kalomo
ZIMBABWE
NAMIBIA
Zambezi
BOTSWANA
0 100 200 Km
0 100 Miles
LEGEND
International Boundary
Disputed Boundary
Capital
River
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(Updated on 2nd April, 2013)

Central issue

- Mass mortalities of fish
- Clinical signs of deep reddened hemorrhagic ulcers and focal areas of skin inflammation

Problem investigated/examined

- Epizootic Ulcerative syndrome

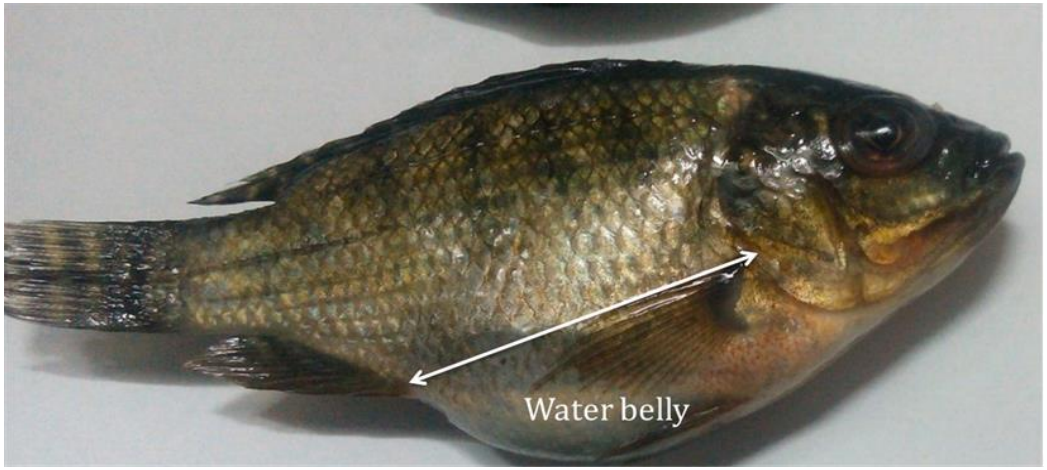
Parameters Examined

- Water quality
- pH
- Dissolved oxygen
- Turbidity

Scenario 2: Massive mortalities and huge losses (Aquaculture establishment)

Central issue

- The fish had bulging bellies and protruding eyes. Clinical signs of deep reddened hemorrhagic ulcers were also observed
- The affected fish was very sluggish.
- The fish were observed to swim in spinning orientation before dying.
- Unilateral corneal opacity
- Skin ulcerations



- Abdominal cavity filled with pink peritoneal fluid
- Exophthalmia
- Cyanotic liver
- Inflamed kidneys
- Congested spleen

Problem investigated/examined

- Epizootic Ulcerative syndrome
- Streptococcosis/Lactococcosis

Parameters Examined

- Water quality
- pH
- Feed quality

Description of the response actions taken and the outcomes/findings/conclusions/any follow-up work

Scenario 1:

Response/Actions taken

- Fish movement restrictions
- Fishing Ban
- Fishing gear movement ban
- No sale of fish from affected areas
- Sample collection, diagnostic tests to determine pathogen involved
- In aquaculture establishment, stumping out.

Outcomes/findings

Disease identified followed by reinforcing of the above responses

Conclusions

Strengthening of legislation to minimise impact of disease on other water bodies

Follow up work

Surveillance and awareness campaigns

Scenario 2:

Response/Actions taken:

- Sample collection, diagnostic tests to determine pathogen involved
- Some farms no action

Outcomes/findings

Some farms apply Biosecurity measures

Conclusions

Routine visits to determine cause and reason of disease occurrence

Follow up work

Monitoring and surveillance

Implications of response actions taken and the outcomes/findings/conclusions/any follow-up work in terms of effectiveness, cost

Scenario one:

- Response minimised disease occurrence and disease spread, but could not be stopped entering new water bodies.
- Losses could not be stopped.

Scenario two:

- In some farms, there was application of Biosecurity measures.
- Adjustment in stocking density

Lessons learned and improvements

Scenario one:

- Disease surveillance and monitoring is important
- Disease awareness to the communities earning their livelihood from the fishing industry
- Capacity for extension workers to collect samples for disease confirmation
- Capacity for disease diagnosis in fishing zones

Scenario two:

- Introduction and implementation of Farm Biosecurity
- Introduction of legislation on aquaculture
- Implementation of research/study findings
- Capacity in disease diagnosis for early response

Five minimum emergency preparedness response requirements that need to be in place

- Diagnostic capacity (Reagents availability in the laboratory)
- Approved annual budgets for aquatic health implementation.
- Availability of materials and resources for fish disease surveillance and monitoring
- Development of legislation that allows extension staff to collect and ship fish samples for disease diagnosis (Quarantine regulations, reaction time guide and formulation of sampling guidelines)
- Communication systems from the fishing zones or aquaculture establishments.

THANK YOU !!!!!