

FAO/ASTF Project: GCP/RAF/510/MUL:

Enhancing capacity/risk reduction of emerging Tilapia Lake Virus (TiLV) to African tilapia aquaculture: Intensive Training Course on TiLV

4-13 December 2018. Kisumu, Kenya

in cooperation with Kenya Marine Fisheries Research Institute (KMFRI) and Kenya Fisheries Service (KeFS)

Epidemiology Session Emergency Response Simulation Exercise for TiLV



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Food and Agriculture
Organization of the
United Nations

Heightened
Alert Phase

- TiLV Outbreak in a neighbor country

Phase 1

- From confirmation of the first case of TiLV in the country until reasonable evidence to estimate outbreak extent

Phase 2

- Surveillance and epidemiology provides timely evidence of outbreak extent to support decisions

Phase 3

- Recovery: surveillance and epidemiology indicates that TiLV is under control

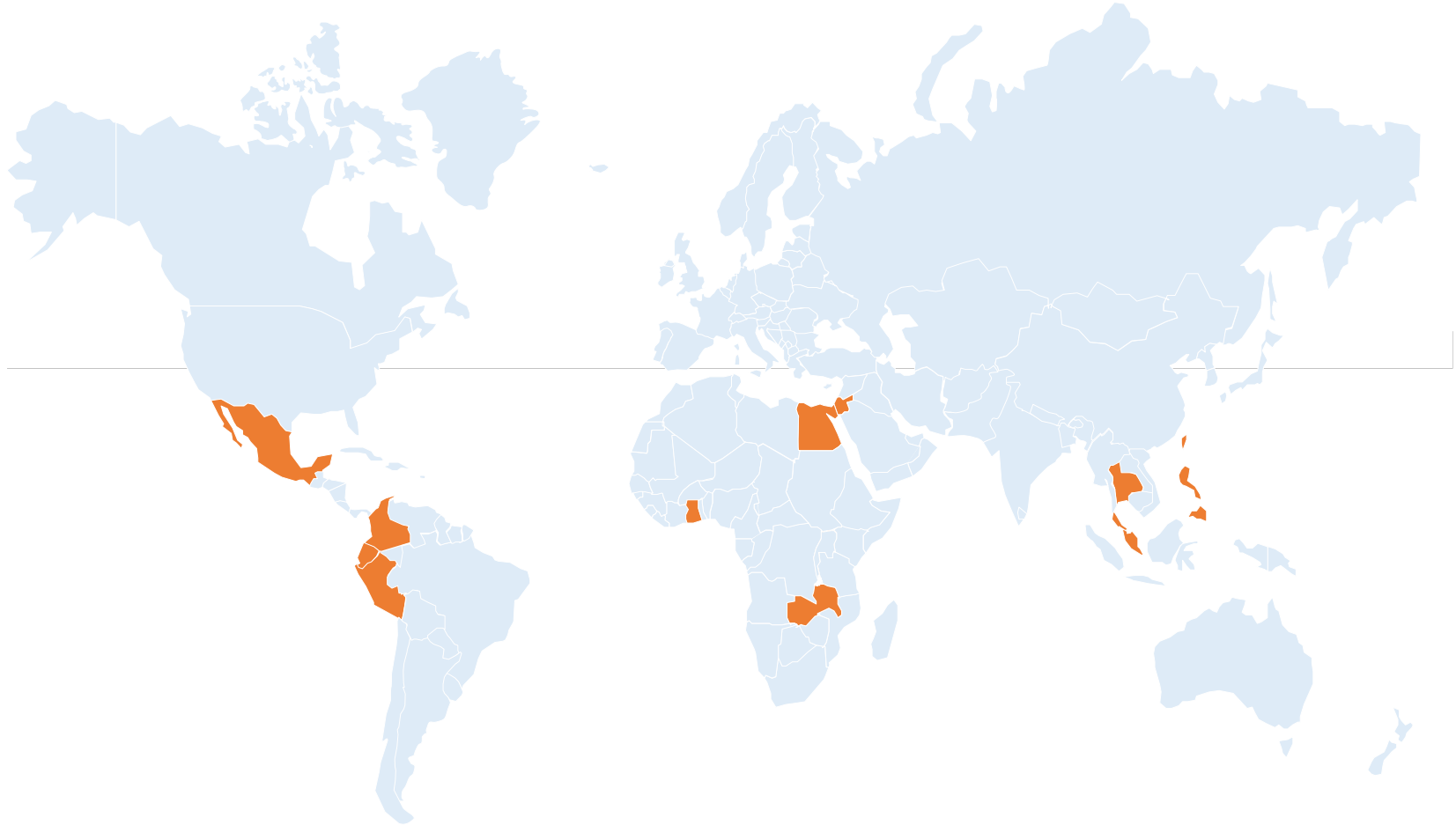
Phase 4

- Country back status of TiLV free, possibly with vaccination

Heightened Alert Phase

- TiLV Outbreak in a neighbor country

Tilapia Lake Virus Reporting – Up to Dec., 2018



Heightened Alert Phase

- Actions?

Heightened Alert Phase

- Discontinue all imports of susceptible animals and animal products from the affected country into your country.
- Work collaboratively and collaborate with neighbor countries to establish Control Areas around Infected Premises and Contact Premises.
- Also to implement controlled stop movement of susceptible animals in the Control Area and restrict other movements (vehicles, animal products, etc.) as appropriate (except as permitted in accordance and business continuity plans or equivalent plans/permitting processes in place in the neighbor countries).

Heightened Alert Phase

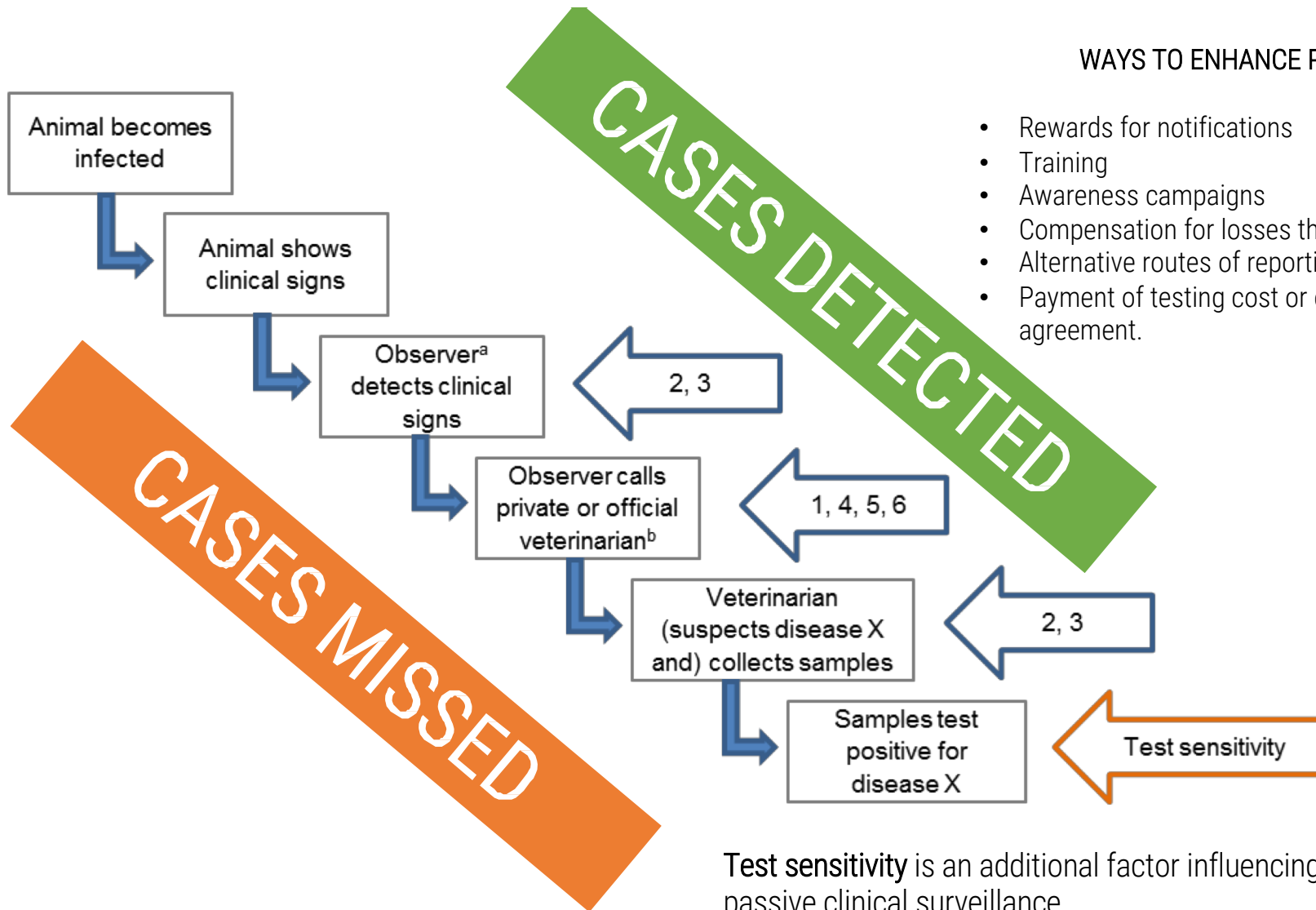
- Advise State authorities to ensure that their premises ID data is up to date and to be prepared for fish tracing.
- Activate Incident Management Teams as needed.
- Implement an enhanced national TiLV surveillance plan for the Control Area(s) and Free Area.
- Collaborate with neighbor countries to enforce biosecurity protocols within the Control Area.
- Activate veterinary countermeasures animal vaccines, antivirals, or therapeutic products, supplies, equipment, and response support services needed to respond to damaging animal disease outbreaks.

Heightened Alert Phase

- Identify the strain(s) of TiLV (if available) and consult with neighbor countries to decide whether to activate a vaccine bank.
- Enhance surveillance for TiLV at the country harvesting plants and ports of entry.
- Conduct tracing and surveillance of species imported from the TiLV affected country within the last two incubation periods (28 days) prior to the date of first infection of the index case.
- Initiate stamping-out of contact farms in the country (unless the number, or the size, of the farms precludes stamping-out quickly enough to stop disease spread).

Phase 1

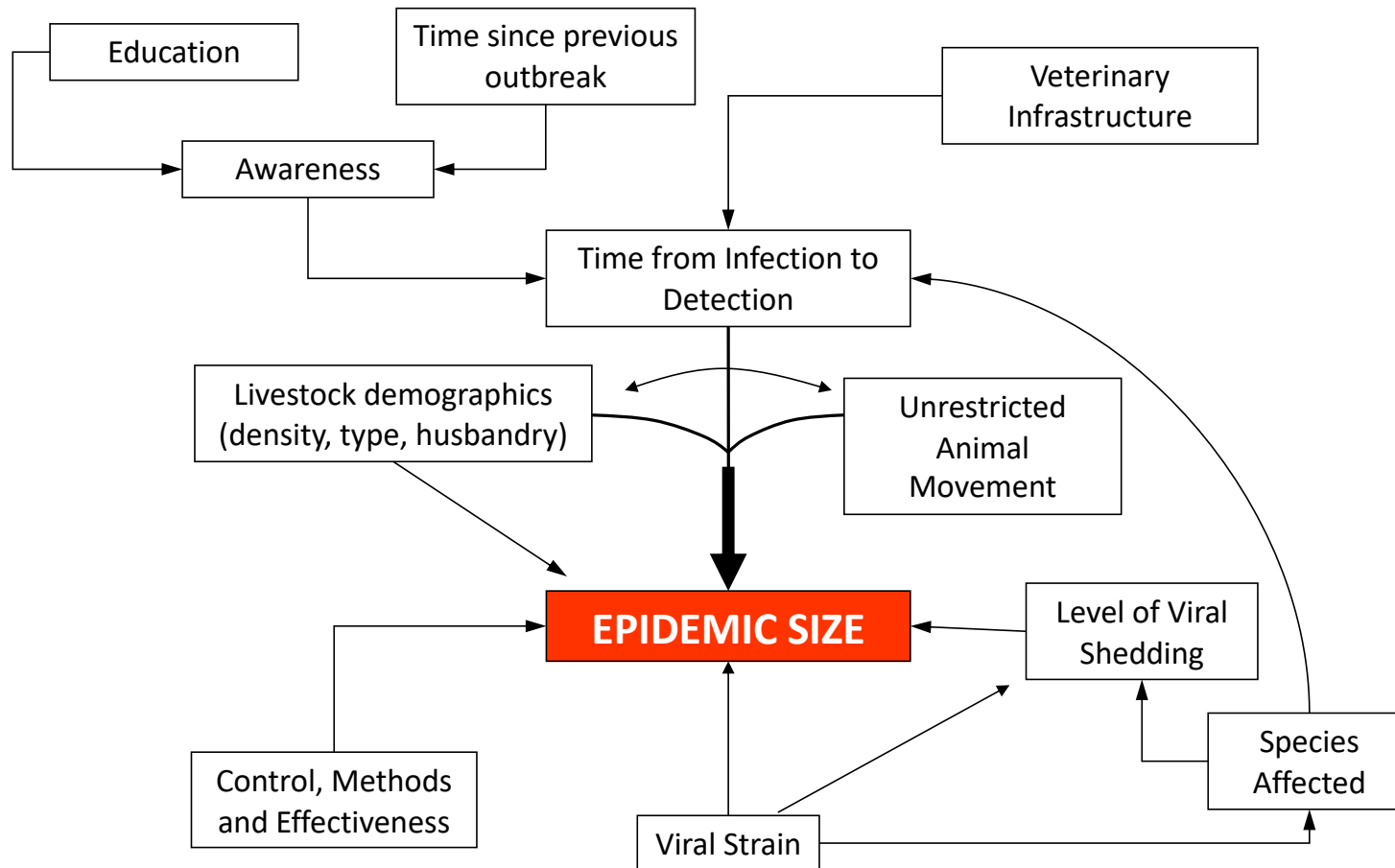
- The period of time from the confirmation of the first TiLV case in the country until there is reasonable evidence to estimate the extent of the outbreak.
- The transition to Phase 2 should be accomplished as soon as possible, with a goal of less than 4 days (96 hours).



WAYS TO ENHANCE PASSIVE SURV.

- Rewards for notifications
- Training
- Awareness campaigns
- Compensation for losses the farmer incurs
- Alternative routes of reporting
- Payment of testing cost or other kind of mutual agreement.

Test sensitivity is an additional factor influencing sensitivity of passive clinical surveillance



Phase 1

- Actions?

Phase 1

- Establish Control Areas around Infected Premises and Contact Premises.
- Activate and deploy appropriate Incident Management Teams.
- Implement controlled stop movement of susceptible animals in the Control Area and restrict other movements in the Control Area (vehicles, etc.) as appropriate (as permitted by specific TiLV response and business continuity plans).
- Implement an enhanced national TiLV surveillance plan for the Control Area(s) and Free Area.
- Enforce biosecurity protocols within the Control Area.
- Activate veterinary countermeasures (if local resources have been exhausted).

Phase 1

- Initiate stamping-out of infected and contact farms (unless the number, or the size, of farms precludes stamping-out quickly enough to stop disease spread).
- Identify the strain(s) of TiLV and consult neighbor countries to decide whether to activate the Vaccine Bank.
- Activate Information Center and coordinate with public hotlines and media resources.
- Activate emergency response teams or notify to be on “standby.”

Phase 2

Surveillance and epidemiology provides timely evidence of the extent of the outbreak (characterized as one of six types) to support planning and decision making by Incident/Area teams.

Type 1: Focal TiLV outbreak

- Focal area of infection limited to one State or small region with low to moderate farms numbers on relatively small premises.
- Epidemiologic investigation and surveillance indicates that it has not spread beyond the initial few premises.
- The Infected Premises have not had extensive fish movement and are not too large to depopulate quickly.
- Rapid stamping-out is feasible.

Type 1: Focal TiLV outbreak

- Actions?

Type 1: Focal TiLV outbreak

- Continue strict quarantines/movement controls for live animals, vehicles, etc. within the control area
- Continue stamping-out with rapid depopulation, disposal, cleaning, and disinfection of Infected and Contact Premises.
- Design and implement surveillance to obtain data, and then apply to the OIE for recovery of TiLV-free status without vaccination.

Type 2: Moderate Regional TiLV outbreak

A few focal areas of infection limited to a region with low to moderate fish numbers on small to medium size premises.

Depending on fish density, sufficient vaccine and resources can be made available to vaccinate designated susceptible fish to reduce virus transmission.

Epidemiologic investigation and surveillance indicate TiLV has not spread beyond the region.

The Infected Premises have not had extensive fish movement out of the Control Area and are not too large to depopulate quickly.

Type 2: Moderate Regional TiLV outbreak

Actions?

Type 2: Moderate Regional TiLV outbreak

- Establish Area Command to coordinate multiple Incident Management Teams in the affected region.
- Consider allowing movement of non-infected fish (including vaccinates) according to the Secure Food Supply Plans.
- Fish must meet vaccination withdrawal period (if it applies) and be able to pass ante-mortem inspection to be harvested.
- Continue rapid stamping-out of Infected and Contact Premises.

Type 2: Moderate Regional TiLV outbreak

- Consider establishing a Containment Vaccination Zone and/or Protection Vaccination Zone with eventual depopulation and disposal, or slaughter, of vaccinated fish.
 - **Vaccinate-to-kill:** killing means any procedure which causes the death of an animal that does not enter the human food chain.
 - **Vaccinate-to-slaughter:** slaughter means any procedure which causes the death of an animal by bleeding where the animal may enter the human food chain.
 - **Vaccinate-to-live:** the animal is allowed to live out its useful life-span.
- Officially identify all vaccinated fish for surveillance and monitoring purposes.
- Design and implement surveillance to obtain data, then apply to the OIE for recovery of TiLV-free status while allowing vaccinated fish to live out their useful lives.

Type 3 – Large regional TiLV Outbreak

- Multiple areas of infection are detected in a region, or the type, number and/or size of infected and contact farms are too great to depopulate quickly enough to suppress disease spread.
- Depending on the epidemiological situation, there may not be sufficient vaccine and resources available to vaccinate designated susceptible fish to reduce virus transmission.

Type 3 – Large regional TiLV Outbreak

- The number of susceptible fish may be too great to consider only a vaccinate-to-kill strategy—a vaccinate-to-slaughter and/or vaccinate-to-live strategy may also be needed.
- There is a reasonable likelihood that the response strategy, including vaccination, will bring the outbreak under control.

Type 3 – Large regional TiLV Outbreak

- Actions?

Type 3 – Large regional TiLV Outbreak

- Establish Area Command to coordinate multiple Incident Management Teams in the affected region.
- Continue strict quarantines/movement control for live animals and vehicles, etc. within the Control Area.
- Stamping-out of Infected and Contact Premises may need to be discontinued. Some Infected and Contact Premises (or severely affected individual animals) may be depopulated based on epidemiologic or humane considerations.

Type 3 – Large regional TiLV Outbreak

- A vaccinate-to-live policy may be considered to reduce the shedding and spread of the virus.
- Officially identify all vaccinated fish for surveillance and monitoring purposes.
- No new vaccinations will be administered more than 28 days after the last known new case of TiLV is detected.
- Design and implement surveillance to obtain data, then apply to the OIE for recovery of TiLV-free status while allowing vaccinated fish to live out their useful lives.

Type 4 – Widespread or National TiLV Outbreak

- Widespread areas of infection are detected involving too many farms or farms that are too large to depopulate quickly enough to suppress disease spread.
- Sufficient vaccine and resources are not available to vaccinate all designated susceptible fish in the affected regions (Control Areas).
- The number of vaccinated fish is too great to consider a vaccinate-to-kill or slaughter (only) policy.
- Implement a vaccinate-to-live policy with continued vaccination after the last case to ensure suppression of virus transmission.

Type 4 – Widespread or National TiLV Outbreak

- Actions?

Type 5 – Catastrophic TiLV Outbreak

- Widespread areas of infection are detected involving a large portion of the country.
- Sufficient vaccine and resources are not available to quickly vaccinate all designated susceptible fish in the affected regions.
- The number of fish is too great to consider only a vaccinate-to-kill or vaccinate-to-slaughter strategy in isolation. Vaccinate-to-kill, vaccinate-to-slaughter, and vaccinate-to-live policies may need to be implemented for regions and species, as vaccine availability dictates.
- It becomes apparent that TiLV is widespread, and will not be eradicated within a year.

Type 4 – Widespread or National TiLV Outbreak

- Actions?

Type 6 – Continental TiLV Outbreak

- Widespread areas of infection are detected involving a large portion of the continent.

Phase 3

- Recovery: Surveillance and epidemiologic evidence indicates that the outbreak is under control [and maybe a plan is implemented to regain TiLV-free status (possibly with vaccination)].

Phase 4

- The country is declared free of TiLV (possibly with vaccination). The government continues to work to convince trading partners to accept exports of fish and fish products.

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