


Generic guidance in the design and  
implementation of an active  
EUS/TILV surveillance:  
12 point checklist

# Checklist #s 1-3

| Checklist #  | Requirements/Considerations   | Considerations |
|--|---|----------------|
| 1. Scenario setting  | Hazard/status of disease  |                |
| <b>2. Aims/Purpose of surveillance program</b>   | Status of TiLV in the country<br><a href="http://www.fao.org/fishery/nems/41072/zh">http://www.fao.org/fishery/nems/41072/zh</a>  | Scenario 1     |
| <b>3, Definition of population: pond, farm, location, region</b><br><br> | <ol style="list-style-type: none"> <li>1. Description of tilapia sector: culture practices (cultured period, systems, management/scale of operation, etc.)</li> <li>2. No. of registered farms (hatchery, grow-out ponds, cages) – database of farmers</li> <li>3. Species (esp. susceptible species but also be cognizant of other species)</li> </ol> Need some kind of enrolment/registration in the surveillance project<br>TiLV hotspots |                |
| <b>4. Clustering of disease</b>  | time (e.g. season, temperature), or animal subgroups (e.g. age, physiological condition)  |                |

# Checklist #s 4-5

| Checklist #        | Requirements   | Considerations   |                                    |
|--------------------|--|--|------------------------------------|
| 5. Case definition |  |  |                                    |
| 6. Diagnostics     | SoPs for Level I<br>SoPs for Level II<br>SoPs for Level III<br>Diagnostic team<br>Diagnostic laboratory<br>Materials | Days 1-3 Training course<br>Days 1-3 Training course<br>Days 1-3 Training course | Cross reference to Checklist No. 5 |

# Checklist #s 6-7

| Checklist #           | Requirements   | Considerations   |
|-----------------------|--|--|
| <b>7. Sampling</b>    | <p>Sampling frame: each country will prepare the population (#2), clustering (#3) and other details illustrated in a map</p> <p>Diagnostic team</p> <p>Surveillance team</p> <p>Requirement checklists (field and laboratory)</p> <p>Cost estimates</p>  | <p><b>Field survey materials</b></p> <p>6 sections in one field questionnaire form (<b>hatchery, grow-out ponds, cages</b>):</p> <ol style="list-style-type: none"> <li><b>1. Farm profile</b></li> <li><b>2. Farm technical details</b></li> <li><b>3. Clinical history (TiLV related questions and other environmental data))</b></li> <li><b>4. Field sample collection form: fish samples and water samples</b></li> <li><b>5. Socio-economic survey</b></li> <li><b>6. Other biosecurity-related questions</b></li> </ol> |
| <b>7. Methodology</b> | <p>Invitation letter to participate and enroll farms</p> <ul style="list-style-type: none"> <li>• Epidemiological unit: A tilapia farm</li> <li>• Unit of sampling: A mix of <b>30 moribund or sick tilapia</b> from ponds at the farm.</li> <li>• Total number of enrolled and participant farms: <b>40 to 60 tilapia farms</b>; which should be visited twice (total field visits = 80 to 120, per country - at least 1+ve farm, at 2% Prev).</li> <li>• 1st and 2nd semesters, 2019 (pre/post hot season?)</li> </ul> <p>Estimated goal for monthly field visits: approx. <b>3 tilapia farms per week (range of 2 to 4 farms)</b></p> <ul style="list-style-type: none"> <li>• Timeframe of sampling: 8 months, starting in March 2019.</li> <li>• Sampling proportional for the structure of the industry; only aquaculture settings. Predominant species(?)</li> <li>• e.g., 20 grow-out ponds, 20 hatcheries and 20 cages</li> </ul> |  |

# Checklist # 8-9

| Checklist #        | Requirements  |   |
|--------------------|---|---|
| 8. Data management | Database development (Excel)<br>Data management: <ul style="list-style-type: none"><li>• Storage</li><li>• Retrieval</li><li>• Analysis</li><li>• Interpretation</li><li>• Risk communication</li></ul> | Template to be provided for all forms (Checklist no. 5)<br>Classical epidemiological approach: quantify risk factors: other components contributing to the disease development (refer to Snieszko circle)<br>Fill up 2 by 2 table: Contingency table<br>Computation of risk factors (exposed vs non-exposed)<br>Compute: incidence (exposed); Incidence (unexposed) and relative risk |
| 9. Validation      | Done by statistical estimation of the level of confidence (not for this project)<br>– Se of surveillance program<br>Done by pilot trial (yes)<br>Done by expert/external evaluation (peer review): Yes  | 95% confidence is for international sensitivity of the system   |

# Checklist # 11 Human and Financial Requirement

Cross reference to Checklist No. 5 ad 7

| Checklist # 11                 | Requirements   | Cost estimate (in USD)    |
|--------------------------------|--|---------------------------|
| Field survey materials         | Fish samples (n=xx)<br>Consummables – <b>Oil, E-tickekts, rent-car</b> | Per trip:<br>Per trip:    |
| Laboratory test materials      | Histopathology lab test<br>Consummables                                | Per trip<br>Per slide     |
| Small equipment                | Water quality kit<br>GPS<br>Pocket PCR                                 |                           |
| Diagnostic Team                | Composition (3-4)  | Training:<br>Field travel |
| Surveillance Team              | Composition (3-4)  | Training:<br>Field travel |
| Awareness meetings for farmers | 3 x  |                           |
| Other miscellaneous expenses   |  |                           |
| <b>Total Cost</b>              |  |                           |

# Checklist # 10-12

| Checklist #                         | Requirements    |  |
|-------------------------------------|-----------------|--|
| 10. Quality assurance               | To be discussed |  |
| 11: Human and financial requirement | To be discussed |  |
| 12. Surveillance in the big picture | To be discussed |  |

# Guide for Sampling Schedule: (indicate system: ponds)

| Activities                           | Jan 2020   | Feb        | Mar        | Apr        | May        | June       | Jul        | Aug        | Sept       | Oct        | Nov        | Dec        | Jan 2021   | Feb        |
|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Preparatory work                     |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Training                             |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Pilot test and sampling map          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Field sampling                       |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Data entry                           |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| xxxx                                 |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| xxxx                                 |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Water temperature for TiLV (28-30 C) | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 18 to 22°C | 18 to 20°C | 20 to 22°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C |
| Culture Period (month)               |            | 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8          | 9          | 10         | 11         | 12         | 1          |

Cross reference to Checklist No. 5 and 7

# Guide for Sampling Schedule: (indicate system:, hatchery)

| Activities                           | Jan 2020   | Feb        | Mar        | Apr        | May        | June       | Jul        | Aug        | Sept       | Oct        | Nov        | Dec        | Jan 2021   | Feb        |
|--------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Preparatory work                     |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Training                             |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Pilot test and sampling map          |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Field sampling                       |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Data entry                           |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| xxxx                                 |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| xxxx                                 |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
| Water temperature for TiLV (28-30 C) | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C |
| Culture Period (month)               |            | 1          | 2          | 3          | 4          | 4          | 6          | 7          | 8          | 9          | 10         | 11         | 12         | 1          |

Cross reference to Checklist No. 5 and 7

# Guide for Sampling Schedule: (indicate system: cages)

| Activities                           | Jan 2020   | Feb        | Mar        | Apr                                      | May        | June       | Jul        | Aug        | Sept       | Oct        | Nov        | Dec        | Jan 2021   | Feb        |
|--------------------------------------|------------|------------|------------|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| Preparatory work                     |            |            |            | Cross reference to Checklist No. 5 and 7 |            |            |            |            |            |            |            |            |            |            |
| Training                             |            |            |            |  |            |            |            |            |            |            |            |            |            |            |
| Pilot test and sampling map          |            |            |            |  |            |            |            |            |            |            |            |            |            |            |
| Field sampling                       |            |            |            |  |            |            |            |            |            |            |            |            |            |            |
| Data entry                           |            |            |            |  |            |            |            |            |            |            |            |            |            |            |
| xxxx                                 |            |            |            |  |            |            |            |            |            |            |            |            |            |            |
| xxxx                                 |            |            |            |  |            |            |            |            |            |            |            |            |            |            |
| Water temperature for TiLV (28-30 C) | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C                               | 22 to 28°C | 18 to 22°C | 18 to 20°C | 20 to 22°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C | 22 to 28°C |
| Culture Period (month)               | 1          | 2          |            | 3  | 4          | 4          | 5          | 6          | 7          | 8          | 9          |            |            |            |