

Country report: aquatic animal health management in Thailand

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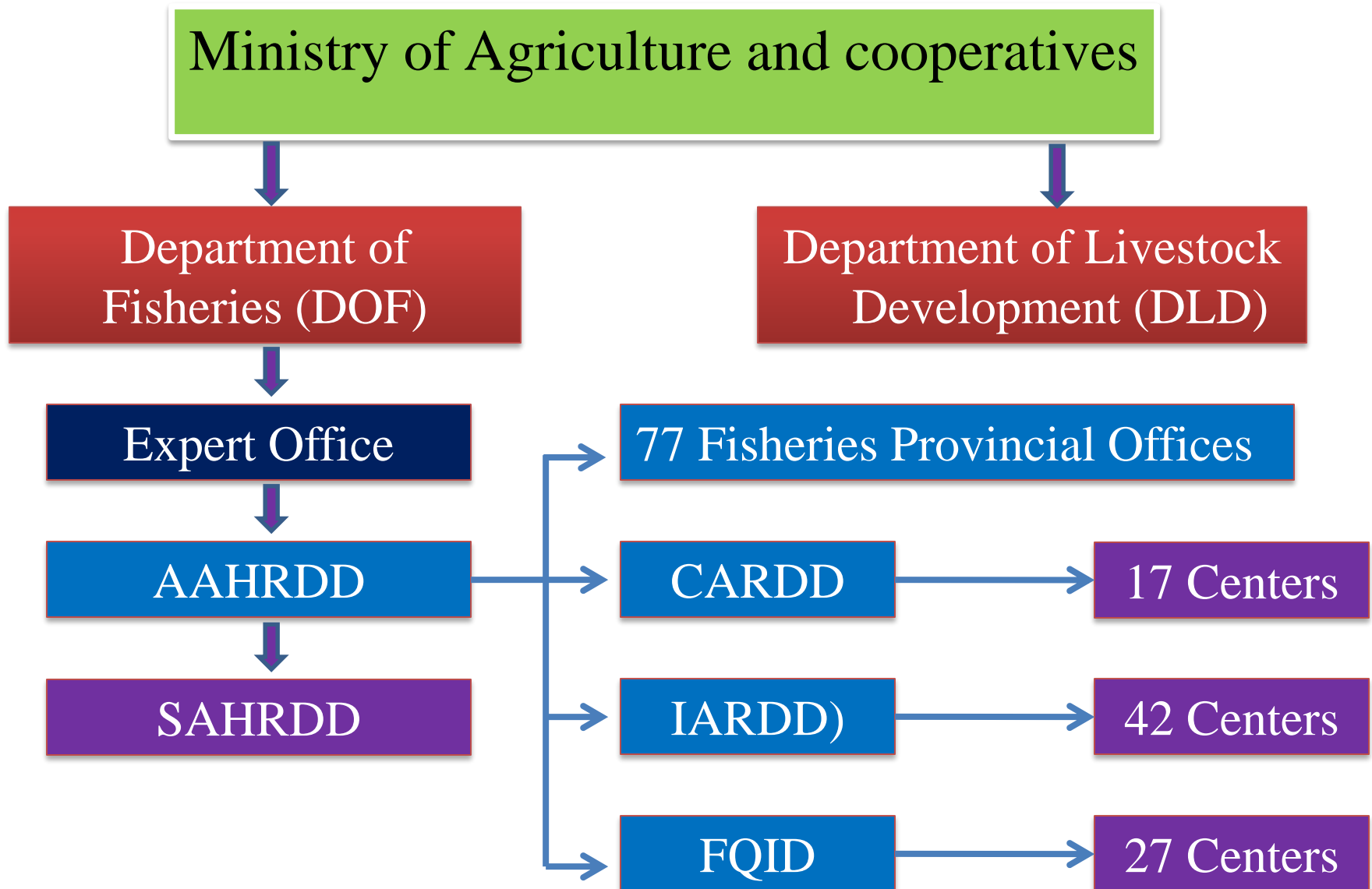
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Topic to be present

- Organization responsible for AAH
- Legislation
- Policy and planning
- Disease diagnostics
- Disease surveillance/monitoring
- Farm biosecurity
- Control of domestic movements of LAA and other activities that may spread pathogens
- Disease reporting
- IRA

- Research
- Training
- Early warning
- Early detection
- Early response
- contingency planning
- International trade in live aquatic animals
- Linkages and Cooperation

CA on various aspects of aquatic animal health responsibilities



- DOF: Department of Fisheries
- DLD: Department of Livestock Development
- AAHRDD: Aquatic Animal Health Research and Development Division
- SAAHRC: Songkhla Aquatic Animal Health Research Center
- CARDD: Coastal Aquaculture Research and Development Division
- CARDC: Coastal Aquaculture Research and Development Center
- IARDD: Inland Aquaculture Research and Development Division
- IARDC: Inland Aquaculture Research and Development Center
- FQID: Fish Quarantine and Inspection Division
- Animal Epidemic Act is used for both terrestrial and aquatic disease control.
- the mandatory destruction of infected aquatic animals is in accordance with the criteria and procedures prescribed in the Notifications by DG of DLD

Legislation

- **legislation** in place dealing with aquatic animal health
 1. Royal Ordinance on Fisheries
 - Impose on registration and various standards
 2. Animal Epidemic Act
 - This Act is operated by DLD
 - DOF staffs have been appointed by the Minister of Agriculture and cooperatives to be [inspectors](#) and [veterinarians](#) to execute the Animal Epidemic Act for aquatic diseases prevention and control
 - The aquatic animals and diseases are listed under the Act

Legislation

- **National pathogen list** for aquatic animal diseases
 - criteria for inclusion of a disease in the national list:
 - It has been shown to affect the health of cultured or wild aquatic animals resulting in significant production losses.
OR
 - The OIE listed disease OR
 - The disease in import requirement of the trade partner
 - 34 diseases under Notification of Ministry of Agriculture and Cooperatives on “Additional Epidemic in accordance with Animal Epidemics Act B.E. 2558 (2015)”

Legislation

- For the purpose of prevention and control of epidemics, if there is the listed disease or suspicion or aquatic animal sick or dead from an unknown cause a veterinarian shall have the power:
 - to order for an owner of aquatic animals or carcasses to notify to competent authorized,
 - to order an owner of aquatic animals or carcasses to confine the aquatic animals or carcasses at an appropriate place as may be necessary for examination,
 - to summon vehicles for inspection or enter buildings or any other places for disease examination, sample collection or protection of epidemics. In this regard, the veterinarian shall have the power to order requiring an owner of vehicles, buildings or any other places to clean up and disinfect the pathogens or carriers in accordance with the prescribed methods.

Policy and planning

- DOF is the agency responsible for national aquatic animal health policy and planning.
- One of its responsibilities is promoting and increasing the quality of aquatic animals and their products throughout the production chain to meet Thai standards and international standards.
- The agency under DOF directly responsible for aquatic animal health is AAHRDD.

- official policy been expressed in
 - Ministerial Regulation Division of Department of Fisheries, Ministry of Agriculture and Cooperatives B.E. 2559 (2016)
 - Royal Ordinance on Fisheries B.E. 2558 (2015)
 - Animal Epidemic Act. B.E. 2558 (2015)
 - Department of Fisheries Action Plan
 - Thailand National Strategy for Aquatic Animal Health
 - Contingency Planning for Aquatic Animal Disease Control Manual

Disease diagnostics

- laboratory diagnostic capability:
 - DOF has 2 national reference laboratories, AAHRDD in Bangkok and SAAHRC in Songkhla, and
 - 19 regional laboratories (CARDIC, IARDC) in different areas around the country
 - PCR laboratory in SAAHRC and Bacteriology laboratory in AAHRDD have been accredited under ISO/IEC: 2005 since 2011
 - All 21 laboratories are responsible for
 - diseases diagnosis service for farmers
 - diseases surveillance

Disease diagnostics

- AAHRDD and SAAHRC, there are aquatic animal clinics that receive the samples and distribute to laboratories (bacteriology, PCR, histology, cell culture, water quality)
- DOF has continuously supported expertise and facilities required for all laboratories to diagnose different diseases and encouraged them to achieve accredited laboratory.

Disease surveillance/monitoring

- Passive surveillance
- Active surveillance:
 - for demonstrating diseases free status of country or farm (24 diseases) in accordance with OIE Aquatic Code
 - If there is positive result, the species susceptible to that disease in that epidemiological unit would be subjected to health improvement, containment, farm disinfection and/or disease eradication
 - prevalence survey:
 - carried out to seek information for decision making for prevention and control program

Farm biosecurity

- If the diseases of concern or suspicion or unexplained mass mortality occurred, the farmer must notify to the competent authority.
- To prevent the introduction of disease into the farm, the aquatic animals to be introduced into the farm should be from the source that has the same or higher level disease free status.
- The new introduced aquatic animals should be contained for a period of time

Control of domestic movements of LAA and other activities that may spread pathogens

- Live aquatic animal
 - every time purchasing, the aquatic animal fry movement document (FMD)/ aquatic animal movement document (MD) should be gained
 - Animal Epidemics Act imposes the owner of sick animal which is known to be infected with an epidemic or unknown cause to confine all sick animals within the area where they are and may not move from that area.

- Waste disposal
 - The standards for quarantine facility for live aquatic animal and quarantine facility for aquatic animal product
 - wastewater of quarantine facilities must be treated using an appropriate chemical disinfection method before it is released
 - the aquatic animal carcasses must be destroyed using either sanitary landfill or incineration
 - other disposal must be destroyed using an appropriate disinfection method
 - The standards for aquaculture establishment for export also include the procedures for disinfecting wastewater, aquatic animal carcasses and other disposal

Disease reporting

- legal obligations of farmers, aquatic animal health management professionals, diagnostic laboratories to report any abnormal mortalities/morbidity to government authorities
 - Farm standard (GAP standard and farm establishment for export standard) imposes farm to notify the competent authority when the listed disease or suspected disease or abnormal mortality or unknown caused disease occurs.
 - Animal Epidemic Act imposes aquatic animal owner to notify the inspector or veterinarian when
 - 1) there is an animal, which is known to be infected with an epidemic, sick or dead;
 - 2) there is an animal sick or dead from an unknown cause;
 - 3) in the same village or adjacent area, there is an animal sick or dead with the same symptoms during a seven-day period.

IRA

- DOF had conducted IRA for some species
 - Pacific white shrimp
 - crayfish
 - Grouper

The results of IRA can be useful for consideration on import permission and risk management.

Research

- There are many fields of research on aquatic animal health
 - development of disease diagnosis,
 - disease prevention and disease control
- The staffs involved
 - all Fisheries Biologists and Technicians from AAHRDD and SAAHRC
 - some staffs from CARDC and IARDC
 - Universities

Training

- DOF has sent its staffs to study at M.Sc. or Ph.D. in areas related to AAH both in country and abroad.
- AAHRDD and SAAHRC have provided training course in areas related aquatic animal health for Fisheries Provincial Offices, CARDC, IARDC every year.
- In fiscal year 2018
 - Disease diagnosis for international trade
 - Diagnostic techniques
 - Disease monitoring and reporting
 - Registration of aquaculture establishment for export

Early warning system

- DOF maintains early warning system by
 - attend the meeting and workshop where there is occurrence of new disease,
 - communication with researchers in other countries,
 - regularly checking local /regional/international disease report database, scientific literature and newsletter,
 - Accessing internet such as NACA, OIE or other website,
 - communicate with CA of trade partner when the serious disease or pathogen is detected from the imported aquatic animal, and
 - regularly reporting disease situation to regional and international system.

Early detection system

- DOF has frequently conducted training courses for fish farmers, traders and DOF staffs from Fisheries Provincial Offices, AAHRDD, SAAHRC, IARDC, CARDAC, IFRDCs, CFRDCs, IAAHRI, FQIC to recognize signs of the listed disease, emerging disease, or unexplained mortality.
- A number of publications have also distributed to the farmers, traders and DOF staff for recognition signs of the diseases.
- DOF has encouraged the farmers, traders for rapid reporting of the event to the nearest DOF agency for the purpose of immediately investigation.

EARLY RESPONSE SYSTEM

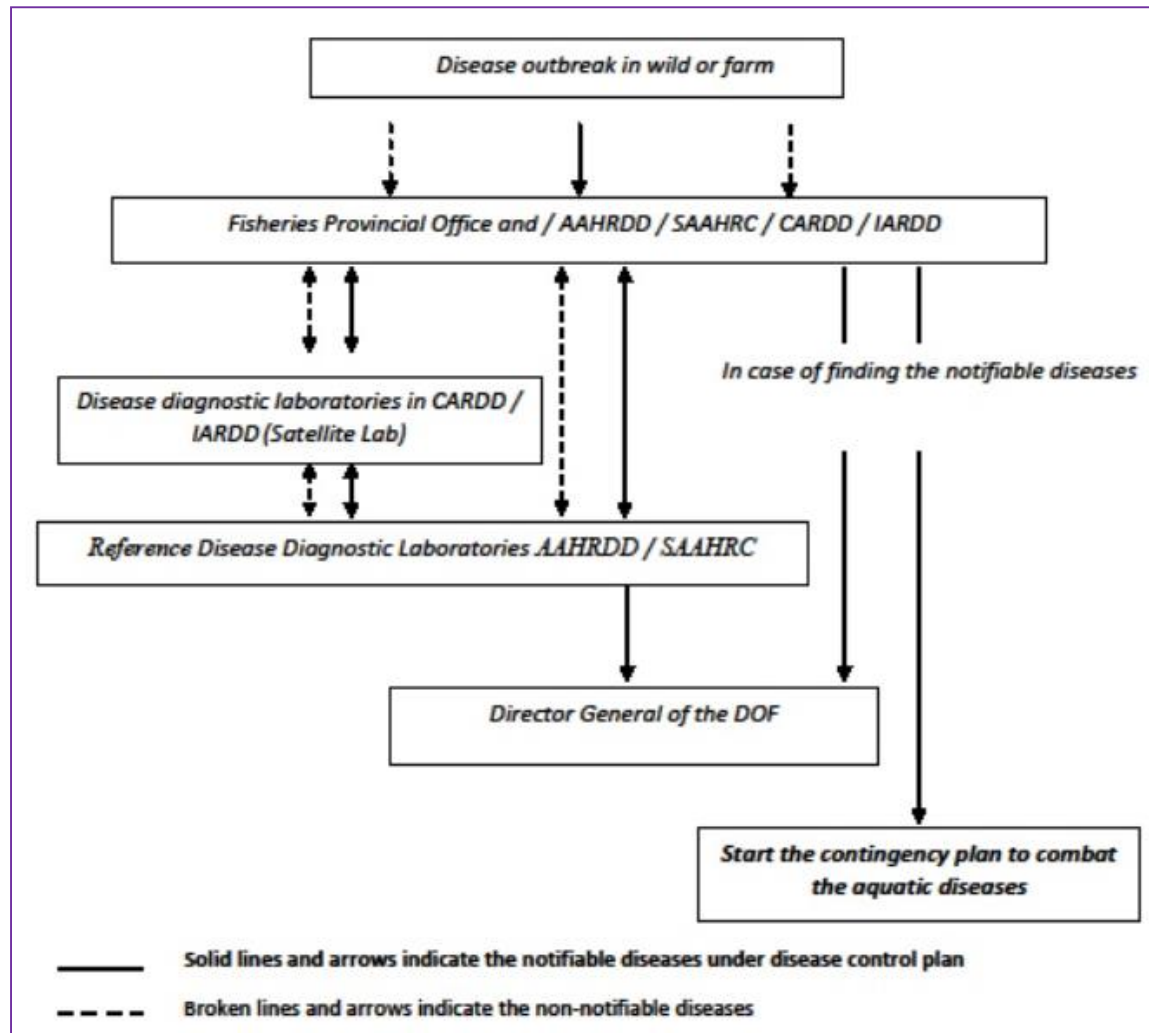
- when there is outbreak in the farm, aquatic animal in that epidemiological unit should be contained in safety area.
- Waste water also should not be released from the farm without disinfected.
- AAHRDD, SAAHRC, IARDC, CARDIC responsible in that area will investigate at the farm in order that they can define the disease zone and can find what factors are associated with the outbreak.
- If the farmers need to introduce aquatic animal into their farm, the source of that animal should be free from disease of concern.
- Both moving in and out of aquatic animal should have movement document or record sheet for traceability

Contingency planning

- The authorized Inspectors or authorized Veterinarians (Fisheries Biologists from Fisheries Provincial Offices, AAHRDD, SAAHRC, IARDC, CARDC) had simulated exercise.
- At the end of simulation exercise, the problems had been listed for further improve.
- At present the contingency plan is reviewed and revised as there is new scientific data, regulation is changed and structure of agency is changed.

Contingency planning

- contingency plans for containment/eradication of serious aquatic animal diseases



The contingency plan to combat the aquatic diseases
Fisheries Provincial Officers are assigned to be the Director of Emergency Aquatic Animal Disease Control Centers

Fisheries Provincial Office (Centre of Aquatic Disease Control) in cooperation with AAHRDD/SAAHRC/CARDD/IARDD

Sending authorized veterinary or authorized inspector to investigate

The disease occurs in a single farm or small closed area: authorized veterinary from AAHRDD/SAAHRC/CARDD/IARDD makes an order to the farmer to quarantine the suspected aquatic animals. If necessary, the authorized veterinary from Fisheries Provincial Office places an order to the farmer to destroy the diseased aquatic animals and carrier.

More serious spread, the Fisheries Provincial Officer reports to the Provincial Governor to announce Disease Affected Zone or Doubted Disease Infected Zone (Duration until the disease outbreak is over)

if the disease spreads, the authorized veterinary from Fisheries Provincial Office announces the temporary disease affected zone

Temporary disease affected zone

Disease Affected Zone or Doubted Disease Infected Zone

Public awareness by Fisheries Provincial Office

Movement control by authorized veterinary from Fisheries Provincial Office

Epidemiology investigation by authorized Veterinary from AAHRDD/SAAHRC/CARDD/IARDD

Quarantine/treatment/cure/destroy by authorized veterinary from AAHRDD/SAAHRC/CARDD/IARDD and Fisheries Provincial Office

In case the outbreak spreads widely, the Fisheries Provincial Officer can request the nearby Fisheries Provincial Offices to allocate more authorized veterinary and authorized inspectors to assist controlling the disease.

Monitoring or target surveillance by authorized veterinary from AAHRDD/SAAHRC/CARDD/IARDD

When the outbreak is over, the Fisheries Provincial Officer will contact the authorized veterinary or Provincial Governor to withdraw the Temporary disease affected zone, Disease Affected Zone or Doubted Disease Infected Zone

International trade in live aquatic animals

- Member of OIE, WTO
- Export
 - marine shrimp to Asia
 - ornamental fish to Asia, Europe, America, Australia, Africa
- Import
 - marine shrimp from Mexico, USA, Panama, Myanmar
 - ornamental fish from Asia, America, Australia, Africa

legislation supporting government control of import/export with respect to AAH

- [Animal Epidemic Act. B.E. 2558 \(2015\)](#)
- DLD Regulation on approval of quarantine unit for importing and exporting aquatic animals B.E. 2554 (2011)
- [Royal Ordinance on Fisheries B.E. 2558 \(2015\)](#)
- DOF Regulation on registration of marine shrimp farms for importation of marine shrimp for breeding purpose B.E. 2557 (A.D. 2014)
- DOF Regulation on registration of aquaculture establishment for exportation of aquatic animals B.E. 2557 (A.D. 2014)
- DOF Regulation on procedures for requesting aquatic animal health certificate for exportation B.E. 2557 (A.D. 2014)
- DOF Regulation on requirement for obtaining aquatic animal movement document B.E. 2553 (A.D. 2010)
- DOF Regulation on requirement for obtaining ornamental aquatic animal movement document B.E. 2555 (A.D. 2012)

Exportation

- DOF issue Health certificate
 - AAHRDD
 - SAAHRC
 - Phuket Aquaculture research and Development Center
- Freedom from specific pathogens based on OIE standard

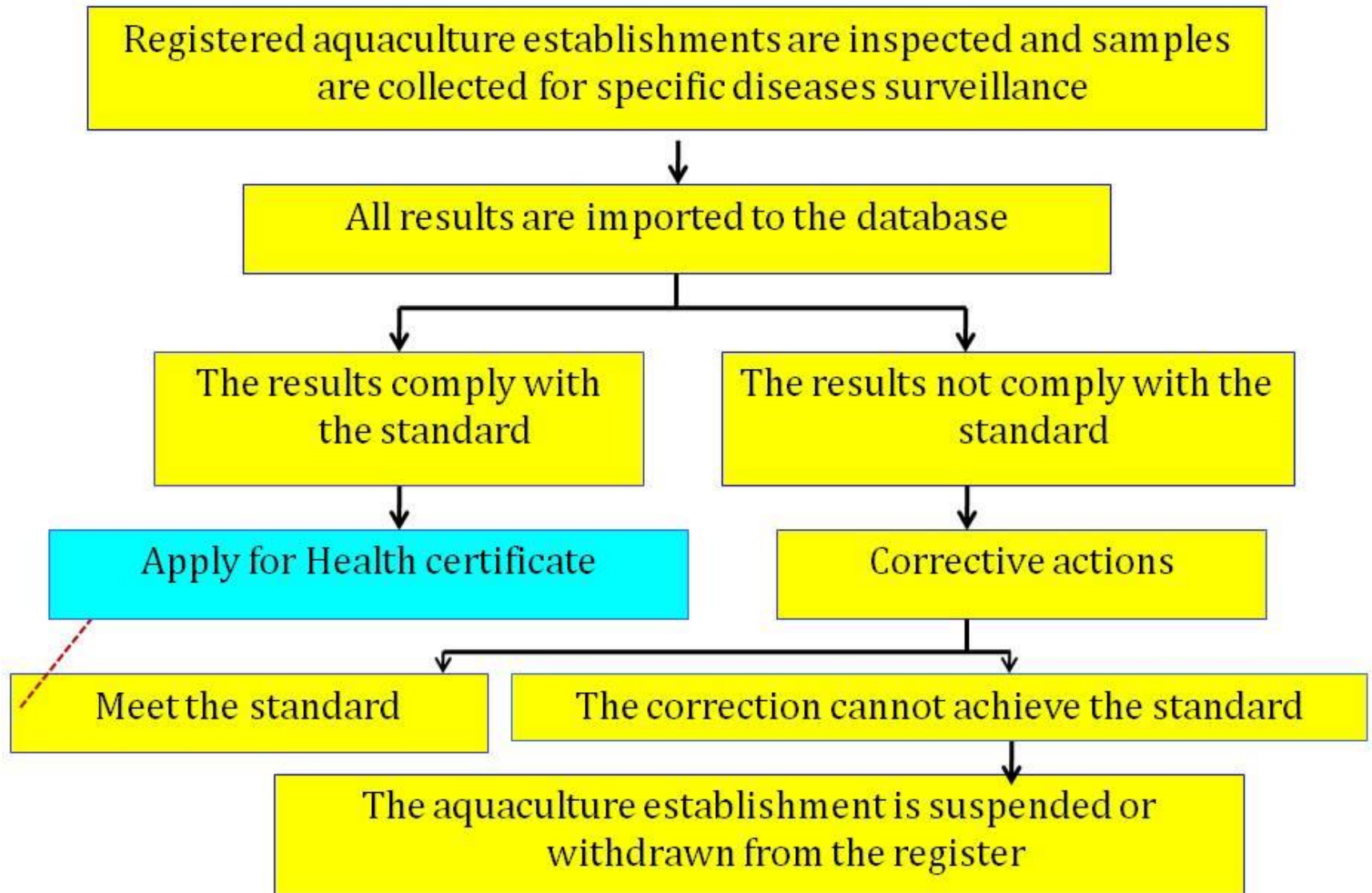
or

- Requirements of importing country

and

- General appearance of health by visual inspection

Procedures of aquatic animal health certification



Importation

Control measures

- Health certificate for freedom from OIE listed diseases
- All imported species are sampled for visual inspection at the port of entry
- Carp and marine shrimp, the control measures are more concentrate than for other species
- Imported carp and marine shrimp must be subjected to quarantine in the approved quarantine facility
- During quarantine period, the samples must be taken and submitted for laboratory testing
- If the test result of the diseases of concern is positive, disease eradication would be performed
- If all test results are negative, the quarantined animals would be released

Linkages and Cooperation

- International
 - International cooperation with OIE
 - Regional cooperation with NACA
 - Bilateral linkages with trade partners
 - Joint project research with university in Japan
- Domestic
 - Joint project research with universities
 - Cooperation with farmer associations and private sectors to seek out how to prevent or deal with exotic disease or emerging disease

Thank you