NATIONAL PLAN FOR FISH HEALTH MANAGEMENT

Submitted by:

Dr. Serife Incoglu, Biologist (Group Coordinator)	Turkey
Bouguerra Fatiha, DVM	Algeria
Hussain Jaafar Al-hendi, Marine Biologist	Bahrain
Magdy El-Said Hassan, DVM	Egypt
Youssef Shehadeh, Agriculture Engineer	Syria
Raouf Dhaouadi, DVM	Tunisia

This project is the outcome of a group efforts to whom credit and technical responsibility goes. This project is based on an assignment which was given to course participants and supervised by Dr. Abdel Rahman El Gamal. Fish Health Management training course was implemented in 2005 by World Fish Center (Africa and West Asia) in partnership with FAO (Near East). The names of the team members who developed this project as well as their countries are shown above

Fish Health Manageme
Training Program
06-16 June, 2005
World Fish Center
Abbassa- EGYPT

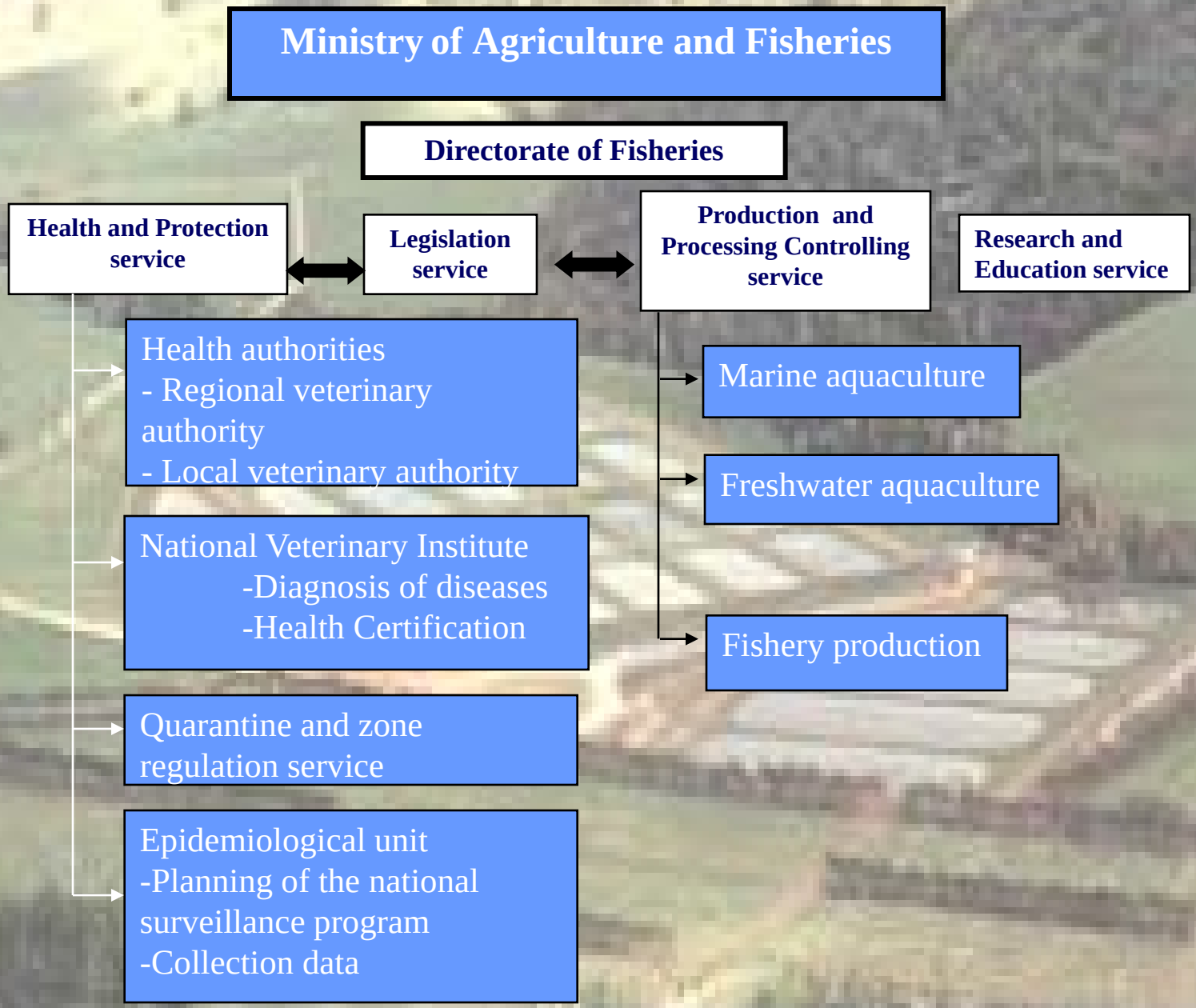
INTRODUCTION

Maintaining healthy fish stock is essential to profitable farming. Nutrition, feed quality and feeding techniques, water quality, handling, grading, vaccination, brood stock management and disease screening are part of an integrated fish health management program.

Disease outbreaks are being increasingly recognized as a significant constraint to aquaculture production and trade and are affecting economic development of the sector in many countries of the world.

If a health or disease problem does arise, the fish health professional staffs make the necessary changes to deal with the problem in an efficient and effective manner according to their national plan for fish health management.

Organization Chart of Ministry of Agriculture and Fisheries



National Plan for Fish Health Management

The national plan for good fish health management must be considering a lot of details related with each steps of all applications. In addition to the regulations and the rules of national plan, most of the health problems can be avoided with proper management and good diagnosis facilities.

Preparations of Regulations and Rules Related with Fish Health:

The health and protection service has to be establish several committee including the professional staffs on fish diseases

- to prepare regulations about legislation

- to prepare a list of the notifiable diseases- the list must be compatible with farming fish species, their economical importance and import/export relationships and regulations between countries

- to prepare reporting systems for routine on the case of disease suspicion

- to prepare quarantine and zone regulations (control zone, temporary zone, infected zone, free zone)– regulations must be including all the exceptional cases depending on the diseases - and rules for transportations between and within the zones- rules for destroying of the dead and infected fish

- to prepare contingency plan for each notifiable disease – special quarantine case (e.g. with radius of zones)

- to plan national surveillance programmer- reporting of mortality, clinical and laboratory inspections, sampling and delivery of the samples

It is necessary to define some terms clearly for the applications without any confusion and good management.

Annex 1- Definitions

Control plan: plan proposed by the concession owner describing the strategy for each individual site/ locality associated with acute mortality or outbreak of infectious disease

Control zone: zone established as part of the contingency plan for outbreak of infectious diseases. The size of control zone will be based on an evaluation of disease transmission risk.

Farm: land or sea based aquaculture facility containing cultured marine species and freshwater species.

Sanitary transport: transport of diseased or potentially infected fish from localities within the control zone.

Surveillance zone: zone established as part of the contingency plan for infectious diseases. The size of the observation zone will be based on an evaluation of disease transmission risk. The observation zone encloses the control zone.

Temporary zone: the area surrounding a site under suspicion of diseases. The extent of the provisional zone shall be based on an evaluation of risk for disease transmission.

Zone: a defined geographical area established as part of the prevention, control or eradication measures for infectious diseases, where special measures are applicable, either prohibitive or compulsory.

Preparations of Regulations and Rules Related with Fish Health:

The health and protection service has to be establish several committees including the professional staffs on fish diseases

- to prepare a list of the notifiable diseases
- to prepare quarantine and zone regulations (control zone, temporary zone, infected zone, free zone)– regulations must be including all the exceptional cases depending on the diseases - and rules for transportations between and within the zones- rules for destroying of the dead and infected fishes
- to prepare contingency plan for each notifiable disease – special quarantine case e.g. with radius of zones
- to plan national surveillance programmer- reporting of mortality, clinical and laboratory inspections, sampling and delivery of the samples

It is necessary to define some terms clearly for the applications without any confusion and good management **(see Annex 1)**

Legislation:

1st step: Before construction of the farms the owner must be apply for legislation with the following documents:

-Projects of the farm (including all details about filtration systems at water inlet and outlet, water purification system, plan and the capacity of ponds, name of the fish species that they are going to produce, type of the farms like only brood stock, breeding and brood stock at the same time or only breeding, feed storage condition, small basic laboratory for the analysis of water etc)

- Contract with Veterinarian
- Contract with aquaculture engineer

2nd step: After they get the permission they can start to make construction of the farm.

3rd step: After the construction of the farm is completed they have to checked by the professional commissions of the government and get the permission to start to production.

Before start to production they have to submit documents showing the source of fish, larvae etc and also they have to submit health certificate.

Good Health management starts at the farm:

1.Veterinarians must be check the fish population daily (health status, mortality rates etc) and fill the information form like check list.

2.Veterinarian and Aquaculture Engineer must be provide the regular applications of cleaning and disinfection of sites and used equipments.

3.Veterinarian and Aquaculture Engineer must be carrying out some basic analysis to check the quality of feed and water etc.

The official local veterinarians must be visiting the farms regularly and check daily forms. In the case of disease suspicion the rules and regulations must be applied by official veterinarians carefully:

Reporting routines on suspicion of diseases

- From Farm Veterinarian to Official Local Veterinarians
- From Official Local Veterinarians to Regional Veterinary Authority and National Veterinary Institute with the samples and information form
- From National Veterinary Institute to the Directorate of Health and Protection Service and (if there is a disease) to the Directorate of Quarantine and Zone Regulation Service

If there is an abnormal behavior and some clinical sign of diseases and mortality in the farm the veterinarian must be a call official local veterinarian immediately to come and take samples (fish, feed and water) and send to the National Veterinary Institute with the information report (see Annex2). They have to start to apply rules related with temporary zones.

Annex 2.

Information Form

Farm name owner name: _____

Full Address of farm: _____

Production type:

() Only Broodstock () Broodstock &Breeding () Only Breeding

Farm type:

() Sea () Fresh water

() Ponds () Cages () Tanks

Name Of Fish Species Produced In Farm:

Total Number of Fish According to Species:

Fish Species	Total Number

Type of Feed:

1…… 2…… 3……..

4…… 5…… 6……..

Brief description of clinical signs and characteristics of mortality :

Is there any mortality last year?

() Yes () No

If the answer yes what was the mortality rate (%):

Is the mortality depending on the season?

() Yes () No

If the answer yes At which season?

() Spring ()summer () autumn () winter

Water parameters at the time of mortality?

Temperature: _____

PH: _____

DO: _____

Salinity : _____

NH4 : _____

Conductivity :_____

Total hardness :_____

Other details :_____

Which are disinfectant and physical techniques using at the farm for disinfection?

Was there any disease treatment applied before? (mention the name of medicine)

Kind and number of materials sampled from farm :

Live fish ……

Dead fish……

Feed……

Water sample ……

Name and sign of farm Veterinarian……

Name and sign of farm Aquaculture Engineer……

Name and sign of Official Local Veterinarian……

Date of sampling…….

*** This form must be prepared in two copies:

first copy for the National Veterinary Institute with the sample

second copy for the Regional Veterinary Authority

Farms affected by diseases and/or there is a suspect of disease they must immediately implement isolation measures to reduce the impact of the disease case without waiting the results of the laboratory. Some measures include(temporary zone) :

- Enforcing strict disinfections procedure
- Limiting the movement of all personnel, equipment, boats etc
- Controlling water and feed quality
- Special procedures for removal and disposal of dead fish

Diagnosis of Diseases

National Veterinary Institute must be include the following laboratories for the diagnosis and analysis:

1. Pathology laboratory
2. Bacteriology laboratory
3. Parasitology laboratory
4. Virology laboratory
5. Toxicology laboratory

The disease suspected samples that have received from farms must be investigated at the all laboratories (Pathology, Parasitology, Bacteriology and Virology) of the Institute at the same time. The feed and water samples must be investigated by toxicology laboratories.

Depending on the results of diagnosis and analysis laboratory:

If there is a disease but not notifiable

Bacterial diseases: Depending on the result of antibiogram test, the Veterinarian must be treating the disease by applying proper antibiotics at correct dose

Parasitical diseases: Depending on the diagnosis of the laboratory, the Veterinarian must apply treatment by using proper chemicals

Viral diseases: Viral diseases have no treatment, the Veterinarian must :

- Apply strict disinfection procedures
- Limit the movement of personnel, equipment etc
- Apply special procedures for the removal and disposal of dead fish

If there is a problem related to water and/or feed quality, laboratory staff must mention that in the report which is prepared by the farm veterinarians who should take immediate actions to correct such problems

If there is a notifiable diseases

Depending on the diseases, the quarantine rules and zone regulations must be applied by the Official Regional Veterinary Service and Official Local Veterinarians. Upon establishment of infected zone all the farms within the zone shall report mortalities immediately to the Official Regional Veterinary Service and Official Local Veterinarians.

Conclusion

- Good organization is very important for the application of the rules and regulations and for the control (regular and continuous collaborations and information exchange between responsible services

- Regulations and rules must be clear and detailed

- Good reporting system and the well educated staffs

- Strict control of the applications of rules and regulations

- Good inspection and surveillance system

- Good sanitation and disinfection to prevent or reduce the spread of disease causing organisms from one system to another