CODE OF GOOD AQUACULTURE PRACTICES (GAqP)

PNS/BAFS 135:2014

EXPLANATORY MANUAL

Explanatory Manual

Code of Good Aquaculture Practices (PNS/BAFS 135:2014)

Bureau of Agriculture and Fisheries Standards (BAFS)
Quezon City, 2020

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ISBN 978-621-455-211-5 (Softbound/Paperback)
ISBN 978-621-455-212-2 (PDF)

Introductory Note

As part of the Philippine's commitment to the Association of Southeast Asian Nations (ASEAN) Roadmap for ASEAN Community 2009-2015, the Code of Good Aquaculture Practices (GAqP) was created to enhance intra and extra-ASEAN trade and long-term competitiveness of ASEAN food, agriculture, and forestry products or commodities.

This PNS form part from the "Good Aquaculture Practice Farmers Guidance Workbook" of the Bureau of Fisheries and Aquatic Resources (BFAR) developed under the European Union (EU) Trade-Related Technical Assistance (TRTA) Project. The Food and Agriculture Organization (FAO) Technical Guidelines on Aquaculture Certification, ASEAN GAqP for Shrimp Farming, and the ASEAN GAqP for Food Fish (Volume 1) were also the standards' major references as cited in the Code.

Consequently, the Explanatory Manual on GAqP was developed to harmonize the interpretations of the standards as laid down in the Code, thereby facilitating better appreciation of the standards and adoption of standards requirements. It explains the minimum requirements in standards by providing either examples, anecdotal experiences and samples of images and documents as references provided in the box of explanatory notes.

For more information, please visit our website http://www.bafs.da.gov.ph and Facebook page (https://www.facebook.com/da.bafs).

Director's Message

Envisioning the accelerated delivery of valuable resources for learning and simplifying the ideas swathed within the domain of the Philippine National Standards (PNS), we are pleased to share this Explanatory Manual (EM). This EM serves as supplementary learning material for the PNS on Code of Good Aquaculture Practices (PNS/BAFS 135:2014).

The PNS on Code of Good Aquaculture Practices (PNS/BAFS 135:2014) forms part of the Philippine commitment to the Association of Southeast Asian Nations (ASEAN) Roadmap for ASEAN Community 2009-2015, which seeks to enhance intra- and extra-ASEAN trade and long-term competitiveness on food, agriculture, and forestry products / commodities.

This EM showcases as additional information and photo documentation for fisherfolk to easily grasp and understand the standard. Employing a collaborative culture, the BAFS aims to ensure increased compliance of our stakeholders to Good Aquaculture Practices (GAqP) through this learning tool.

We hope you will enjoy reading this Explanatory Manual as BAFS intensifies its information dissemination activities and develops more knowledge-enhancing materials intended to elicit significant impact for our PNS.

MYER G. MULA, PhD
OIC - Director

Assistant Director's Message

Explanatory Manual (EM) was developed to provide uniform interpretation and understanding for specific provisions and/or requirements in the Code. EM expounds and clarifies the meaning of standard through image, document references, and explanatory notes elaborating the rationale behind each provision of the Philippine National Standard on Good Aquaculture Practices (PNS/BAFS 135: 2014).

The explanatory manual of GAqP will not be completed without the insights, annotations, and support from our Technical Working Group from the Bureau of Fisheries and Aquatic Resources (BFAR).

EM GAqP went through a series of TWG meetings and writeshops attended by experts, with their cooperation we were able to create the explanatory manual of GAqP. EM GAqP was subjected to public consultation with our stakeholders for further discussion and review. With their cooperation we were able to develop this manual. Further, this was subjected to public consultation with our stakeholders, thus this final version.

We hope that this manual will be able to inform and guide our stakeholders to further understand and discern the provisions stated in our developed and adopted standards which might lead them to integrate this in their farm.

MARY GRACE R. MANDIGMA
Assistant Director

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Scope and References

1 Scope

This Code of Good Aquaculture Practice (GAqP) aims to prevent or minimize the risk associated with aquaculture production (mariculture, coastal aquaculture/brackish water culture, and freshwater culture). This Code covers the following aspects of aquaculture production namely: a) food safety, b) animal health and welfare, c) environmental integrity, and d) socio-economic.

This Code applies to aquaculture farms/projects, such as, but not limited to, hatcheries, nurseries, fish cages, fish pens, fishponds, seaweed, and mollusks farms, which may be owned by individuals, corporations, and/or producer associations.

This Code consists of minimum compliance requirements.

Note: This standard provides the overarching principles on GAqP. There are specific codes for milkfish and tilapia (PNS/BAFS 196:2017), shrimp and crab (PNS/BAFS 197:2017), oyster and mussel (PNS/BAFS 207:2017) and seaweeds (PNS/BAFS 208:2017).

2 References

The main document used as reference in the development of this manual is the PNS/BAFS 135:2014. The complete list of photo references is found in page 59.

Compliance Requirement:

Siting and Design

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

3 Siting and Design

3.1 Location

Aquaculture farms should be in an environmentally suitable area where risks to food safety from chemical, biological and physical hazards from air, soil, and water are minimized.

Explanatory Note:

The areas or sites identified by the Department of Environment and Natural Resources (DENR), Local Government Unit (LGU), and Bureau of Fisheries and Aquatic Resources (BFAR) as environmentally suitable area are situated at a considerable distance from possible sources of physical, biological and chemical hazards. Sensitive areas such as swamps, mangrove forests and coral reefs, and the presence of invasive/non-native species that can eventually overtake/replace the native species that thrive in the area are not recommended.

Cage sites are characterized with good water quality and free of industrial pollution. Biological requirements including appropriate temperature, salinity and dissolved oxygen for the farmed species should also be met.

Image 1.
Sual Mariculture Zone Park, Pangasinan (Source: Sual LGU, n.d.)

Image 2.
Aquaculture farms of JLV, Batangas (Source: L. Cabrera, n.d.)

Image 3.
Aquaculture farms of Marcela, Bohol (Source: C. Lopez, n.d.)

Compliance requirements:

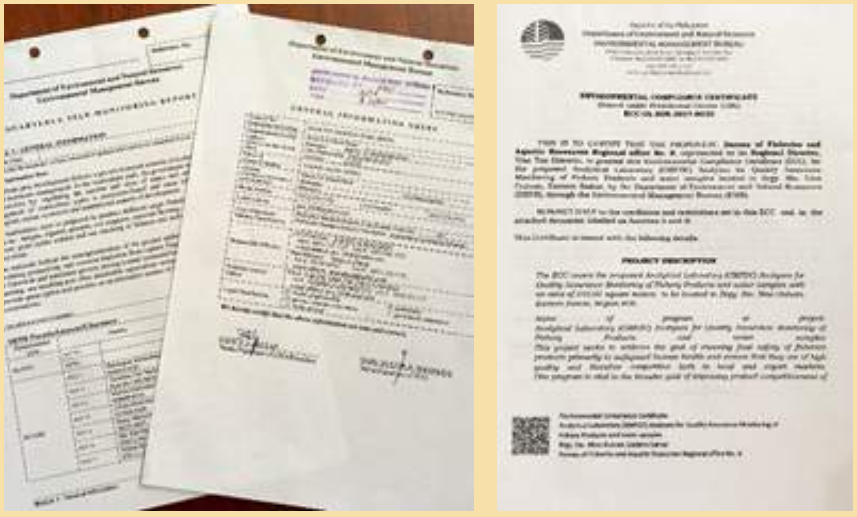
3.1.1 Available environmental impact assessment (EIA) or recent environmental report for non-coverage areas;

3.1.2 Proof of legal ownership of the farm area (license to operate or business permit from the local government unit);

3.1.3 Available risk assessment report;

Explanatory Note:

Identify possible sources of contamination and the subsequent chemical, biological and physical hazards. Implement control or mitigating measures to minimize risk of contamination.



Self-monitoring Report (SMR) and Environmental Compliance Certificate (ECC) show operational activities that have environmental impacts and demonstrate evidence of compliance to existing environmental laws such as discharge limits.

Image 4.
Sample of ECC forms (Source: BFAR VIII. n.d.)

Compliance requirements:

3.1.4 Vicinity map (indicating different enterprises around the farm); and

3.1.5 Farm map (showing the sources and discharges of water).

Explanatory Note:

Image 5.
CP Farms' map showing the flow of water within the farm (Source: G. Coloma. n.d.)

3.2 Lay-out and design

3.2.1 Aquaculture farms should be used for aquaculture purposes only. Livestock production is not allowed unless done in distinct areas within the farm. Wild and domestic animals should be excluded from ponds and harvesting areas.

Compliance requirements:

3.2.1.1 Evidence of segregating aquaculture activities with livestock activities;

3.2.1.2 Installation of proper segregating device (e.g. fences) from livestock that are present in the farm.

Explanatory Note:

Ponds are adequately provided with measures to avoid the build-up of birds and protection from unnecessary bird droppings and vicinity of production and harvest are free from livestock and wild/domestic animals.

For cages, cover nets are provided to minimize the area from bird droppings.

Image 6.
Fence at the supply canal of Marcela Farms (Source: C. Lopez. n.d.)

Image 7.
Nets at Pangasinan Mariculture Zone Area (Source: M. Baldonado. n.d.)

Image 8.
Protection materials of ponds at CP Farms and in Quezon Province (Source: G. Coloma and L. Cabrera. n.d.)

3.2.1.3 Farm layout showing the different structures of the farm (e.g. location of ponds in relation to livestock houses).

3.2.2 Farm design and layout should prevent cross-contamination.

Explanatory Note:

Other animals should not be within and around fish ponds to prevent cross-contamination.

Image 9.
Animals near fish pond (Source: E. Morales. n.d)

Compliance requirements:

3.2.2.1 Evidence that current dike can withstand the high level of water;

Explanatory Note:

Level of water in dikes should be manageable. The photo shows that perimeter dikes are heightened to avoid flooding.

Image 10. **Water dikes (Source: G. Coloma. n.d)**

3.2.2.2 Barriers or control measures in place at all possible entry points in the farm;

3.2.2.3 All entry points should have warning signs;

Explanatory Note:

Warning signs intend to provide information and reminder to employees and visitors. This is to avoid any negative incidents unfavorable to the operation. The photo shows warning signs that are visible and readable for personnel and visitors.

Image 11. **Warning signs at SEAFDEC Shrimp Hatchery Complex, Iloilo (Source: L. Abagon. n.d)**

3.2.2.4 Footbath or tire-bath should be in place;

Explanatory Note:

Tire bath and foot bath are forms of biosecurity measures situated at the entrance of the facility to prevent the introduction of outside hazards such as pathogens and other viral particles.

Image 12.
Tirebath at the entrance of JLV Farm, Batangas (Source: L. Cabrera. n.d)

Image 13.
Footbath at the entrance point Macele Farm, Bohol (Source: C. Lopez. n.d)

Image 14.
Tire bath at the entrance point of Alsons Aquaculture Corp., Sarangani (Source: S. Mamalangkap. n.d)

3.2.2.5 Proof or evidence of using bio-security measures;

Explanatory Note:

The photo shows the fence which prevents the entry of crabs and other crustaceans that carry disease.

Image 15.
Protection fence against crustaceans at CP Farm, Zambales (Source: G. Coloma. n.d)

3.2.2.6 No waste storage located at least 50meters from pond area;

3.2.2.7 Proper facilities for storing feeds and other materials used in the pond must be away from toxic chemicals;

Explanatory Note:

Feeds piled in pallets are provided with appropriate, well-ventilated storage facilities. Separate storage for disinfectants and pesticides are provided to prevent risk and contamination.

Image 16.
Feeds storage facility at Alsons Aquaculture Corporation, Sarangani (Source: S. Mamalangkap. n.d)

3.2.2.8 Provide evidence of compliance with local regulations;

Explanatory Note:

Image 17.
Segregation system in aquaculture farm (Source: BFAR. n.d)

Image 18.
Compliance certificates of Marcela Farm, Bohol (Source: C. Lopez. n.d.)

3.2.2.9 Cage materials are proven durable and corrosion resistant

Explanatory Note:

Cages are made of polypropylene and non-corrodible materials such as copper alloys, nylon, high-density polyethylene, and rubber.

Image 19.
Cages at Sual Mariculture Zone, Pangasinan (Source: M. Baldonado n.d.)

Image 20.
Bamboo cage at Quezon Province (Source: L. Cabrera. n.d)

3.2.2.10 Chemical (carcinogenic/toxic) containers should not be used as floaters and/or containers of fish; and

3.2.2.11 Sanitary facilities should not be present near the water system and at least 50 meters from farm operation.

3.2.3 Septic tanks and toilet facilities should be well constructed and placed so drainage does not cause a risk of contamination of farm facilities.

Compliance requirements:

3.2.3.1 Toilets should have concrete septic tank; and

3.2.3.2 Septic tanks should be located at least 50 meters away from pond areas.

3.2.4 Cages and nets, should be designed and constructed to ensure minimal physical damage to fish during growing and harvesting and to allow for adequate cleaning and disinfection.

Compliance requirements:

3.2.4.1 Records of monitoring of mortalities;

Explanatory Note:

Table 1. **Sample monitoring form on mortalities during stocking and harvest**

2. A. Farm Harvest Data

Farm Name: _____

Period Covered: _____

Pond No.	Pond Area (Ha)	Species	Stage of Species	Date of Harvest	Days of Culture	Total Harvest	Mortalities during Harvest	Remarks	Responsible person (Name & Signature)

1. B. Pond/Cage/Pen/Tank Stocking Data

Farm Name: _____

Period Covered: _____

Pond/Cage/Pen/Tank: _____

Pond/Cage /Pen/Tank Area (Ha)	Species	Stage of Species	Stocking Size	Date of Stocking	Timing of Stocking	Volume of Stocks (pcs)	Mortalities during Harvest	Remarks	Responsible person (Name & Signature)

Guide:

Farm Name: Legal name of the farm or name of the owner of the farm if there is no legal name.

Period Covered: Refers to period when the inventory was created/used. Farm record usually cover 1 production year.

Pond/Cage/Pen/Tank: Refers to the production unit where the stocking of seeds took place.

Column 1: Pond/Cage/Pen/Tank Area – refers to the productive area

Column 2: Species – refers to the aquatic animals cultured

Column 3: Stage of Species – refers to the stage of development of the cultured species (i.e. fry, fingerlings, juvenile)

Column 4: Stocking Size – refers to the age of the purchased seed stock (i.e. PL18 for shrimp, size 20-22 for tilapia, 50 – 60 grams for bangus in cages)

Column 5: Date of Stocking – specific date when the seeds (i.e. fry, PL, crablets) are stoked in the production unit

Column 6: Timing of Stocking – indicates whether stocking was initial, replenishment or additional stocks

Column 7: Volume of Stocks – indicates the stocking density of the production unit

Column 8: Mortalities during stocking – indicates the number of dead animals during stocking

Column 9: Remarks – any observations noted during stockings (i.e. uniform sizes, health status, weather conditions during stocking, time of stocking)

Column 10: Responsible Person – the person-in-charge for the stocking of seeds and his/her signature

3.2.4.2 No evidence of materials that can cause stress (greasy nets, corrosive materials); and

3.2.4.3 Appropriate feeding areas that would allow large volumes of fish at a time.

Explanatory Note:

Presence of platforms facilitates proper feeding in large ponds.

Image 22. **Platform for feeding at Marcela Farm (Source: C. Lopez. n.d.)**

Image 23. **Automatic feeder at CP Farm (Source: G. Coloma. n.d)**

3.2.5 Equipment, such as containers and vehicles for feed, seed and harvested fish/crustaceans, should be designed and constructed to allow for adequate cleaning and disinfection.

Compliance requirements:

3.2.5.1 List of equipment available in the farm with the corresponding usage;

3.2.5.2 Proper storage of different equipment in the farm; and

Explanatory Note:

Storage for equipment such as generators, water pumps, automatic feeder and aeration devices are provided.

Image 24.
Storage space for equipment of Marcela Farm, Bohol (Source: C. Lopez. n.d)

3.2.5.3 Materials for containing fish should be in compliance with food safety standards .

Compliance Requirement:

Facilities and Sanitation

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

4 Facilities and sanitation

4.1 Facilities

4.1.1 Facilities for hygienic disposal of solid and liquid wastes should be available in a suitable area.

Compliance requirements:

4.1.1.1 Written procedures on solid and liquid waste disposal;

4.1.1.2 Provision of appropriate waste containers that are sealable;

Explanatory Note:

Waste containers are properly labelled, elevated, flood-free and with flooring that can contain spillage and other liquids harmful to the workers, environment and animals.

Image 25.
Labelled waste containers (Source: BFAR. n.d.)

4.1.1.3 Evidence of management activities to minimize contamination in the production system;

4.1.1.4 Record of collection schedule for wastes;

4.1.1.5 Evidence of means of disposal that is compliant with local regulation; and

4.1.1.6 Allocation of treatment area for pond/farm effluents prior to discharge.

4.1.2 Fuel, chemical substances (sanitizer, fertilizer, reagents), feed and veterinary drugs should be stored separately and in safe condition.

Compliance requirements:

4.1.2.1 Space allocation in the storage area to accommodate/segregate chemicals, paints, fuel and other lubricants;

4.1.2.2 Storage should be locked and only authorized staff have access; and

4.1.2.3 Storage for fuel should be able to contain spillage in the case of the risk happening.

Explanatory Note:

Fuel storage facility is physically separated away from the culture area. It is also constructed using materials that can contain spillage to avoid negative incidents.

Image 26.
Fuel storage facility at Marcela Farm, Bohol (Source: C. Lopez. n.d)

4.2 Sanitation

4.2.1 Farm/cage and surroundings should be maintained in a clean and hygienic condition.

Compliance requirements:

4.2.1.1 Written procedures for cleaning and maintenance of the facilities;

4.2.1.2 Records of monitoring and cleaning events; and

4.2.1.3 Evidence of proper area allocation for cleaning/sanitizing equipment in the farm.

4.2.2 Containers, equipment and farm facilities should be maintained in good condition and easy to clean .

Explanatory Note:

Clean/sanitized containers, equipment and farm facilities.

Image 27. **Sanitized items (Source: BFAR. n.d.)**

Compliance requirements:

4.2.2.1 Written procedures for regular maintenance of the containers, equipment and farm facilities in the farm;

4.2.2.2 Records of cleaning schedules/activities;

Explanatory Note:

Records showing cleaning procedures frequency and preventive maintenance.

Table 2. **Sample form on cleaning frequency (Source: BFAR. n.d.)**

Date	Ceiling and Walls	Riser grills / Pendent	Stainless steel Guards & Doors	View Panels, Thermo hygrometer, Magnetic Gauge, SOP Stand	Electrical fixtures, balance and balance cable, Water Bin	Floor & Coving	Cleaned by	Checked by	Remarks

4.2.2.3 Evidence of proper labeling for each used and unused equipment available in the farm; and

4.2.2.4 Provision of storage area for equipment with proper ventilation.

4.2.3 Adequate procedures for cleaning and disinfection of containers, equipment and farm facilities should be in place and implemented.

Compliance requirements:

4.2.3.1 Written procedures on cleaning and disinfection;

4.2.3.2 Proper storage for clean equipment; and

Explanatory Note:

Equipment are properly cleaned and stored in designated areas.

Image 28.
Storage area at Marcela Farm (Source: C. Lopez. n.d)

4.2.3.3 Evidence of space allocation for different equipment in the farm.

4.3 Waste removal

4.3.1 Waste should be removed at least once a day.

Compliance requirement:

4.3.1.1 Protocol on waste removal and disposal should be available.

4.3.2 Waste containers and the waste storage premises should be cleaned and sanitized after each use.

Compliance requirements:

4.3.2.1 Monitoring procedure and cleaning schedules in place;

4.3.2.2 Laborers must demonstrate awareness on the procedure and schedules for cleaning and sanitation;

4.3.2.3 Evidence of waste management procedures being implemented; and

4.3.2.4 Proper labels should be visible on all waste containers.

4.3.3 Waste should be stored such that it is not a source of contamination.

Compliance requirements:

4.3.3.1 Written procedure on storing wastes;

4.3.3.2 Laborers must show awareness and able to demonstrate the procedures on waste storage and disposal;

4.3.3.3 Records of regular monitoring of waste disposal; and

Explanatory Note:
Table 3. **Sample Template for waste disposal tracking**

Example of Waste Tracking Template

Tracking waste from its point of generation to its final disposition can be done using a simple spreadsheet.

A	B	C	D	E	F	G	H	I
Point of Generation	Date	Waste Type	WM Staging Area	Amount Managed	Cumulative Amount Managed	Units	Waste Management Facility	Comments

4.3.3.4 Evidence of space allocation for waste confinement.

Compliance Requirement:

Water Use and Farm Management

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

5 Water use

Water sources should be far from all pollution, sufficient and suitable throughout the year.

Compliance requirements:

5.1 Records of water quality monitoring; and

Explanatory Note:

Monitoring of basic water parameters such as ammonia (NH3), nitrite (NO2) carbon dioxide (CO2), alkalinity, hardness, dissolved oxygen (DO), pH, salinity, and temperature are conducted and recorded.

Image 29.
Water monitoring at Balingasag Mariculture Park, Misamis Oriental (Source: R. Hojas. n.d.)

5.2 Result of current (3 – 6 months) laboratory analysis for water intake.

Explanatory Note:

It is important to understand that repeatability (or precision) among the results of the replicate analyses of individual samples does not assure closeness to the true concentration (or accuracy).

6 Farm management

6.1 Pond preparation

6.1.1 Pond preparation practices should minimize risk for cross-contamination.

Compliance requirements:

6.1.1.1 Written protocol on pond preparation indicating the methods used in clearing the production unit;

6.1.1.2 Pond dikes/pens/nets are checked prior to stocking;

6.1.1.3 Space allocation for containing sludge from the production unit;

Explanatory Note:

Sludge are not to be dumped along the dikes or any area that may contaminate the culture ponds or any communal bodies of water.

Image 30.
Dedicated pond for sludge discharge (Source: BFAR. n.d)

6.1.1.4 Sludge container should be free from seepage;

6.1.1.5 Evidence of laboratory analysis for soil condition (evidence that chemical application is based on the result of soil analysis); and

Explanatory Note:

When adjusting the soil pH is needed, application of lime and fertilizer could be used. However, this should be based on the laboratory result of soil analysis.

Soil quality is an important factor in fish pond productivity as it controls pond bottom stability, pH and salinity of water, and concentrations of plant nutrients required for the growth of phytoplankton.

6.1.1.6 List of chemicals used in pond preparation.

6.1.2 Prohibited chemicals and biologicals should not be used in pond preparation.

Compliance requirements:

6.1.2.1 Available list of chemicals that are banned in the country; and

6.1.2.2 Available list of chemicals or biological substances purchased and used in the farm.

6.1.3 Fertilizers, probiotics, and chemicals should be used according to instructions for proper use.

Compliance requirements:

6.1.3.1 Protocol on the application of fertilizer;

6.1.3.2 Available soil analysis for NPK; and

6.1.3.3 Records on application of chemicals and probiotics.

6.1.4 Adequate records should be kept on pond management activities (e.g. preparations and water quality controls).

Compliance requirements:

6.1.4.1 All records should be available for inspection; and

6.1.4.2 All relevant documents should be available and responsible personnel should have access to the records.

6.1.5 Adequate records should be kept on the origin and the type of seed used.

Compliance requirements:

6.1.5.1 Movement documents (e.g. Local Transport Permit) and purchase orders should be available during inspection;

Explanatory Note:

An example of local transport permit issued by the Bureau of Fisheries and Aquatic Resources (BFAR) bearing transport, product and traceability details authorizing domestic movement of aquatic wildlife, by-products or derivatives acquired from legal sources.

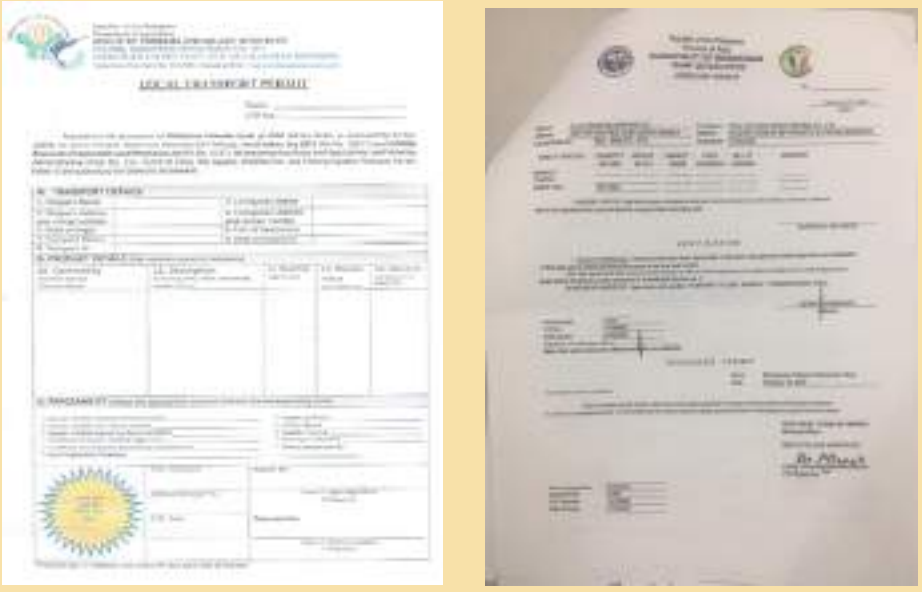


Image 31.
Sample Permits issued by BFAR (Source: BFAR. n.d.)

6.1.5.2 Sources of inputs should be traceable one-degree level (one-step-back traceability); and

6.1.5.3 Information about the seed: strain, origin, amount, and other description.

6.2 Water management

6.2.1 Water should be properly screened/ settled/ aerated and quality should be maintained as suitable for cultured stock.

Compliance requirements:

6.2.1.1 Evidence of proper inspection/testing of water prior to entry into the system;

6.2.1.2 Records of water quality monitoring with dissolved oxygen (DO) not lowering to 3 ppm;

6.2.1.3 Screens with appropriate mesh size are installed in farm inlet and outlet;

Explanatory Note:

Entrance gates for the water supply are screened with fine-meshed net, tightly fitted and made of non-corrodible materials that will prevent entry of debris, predators and unwanted species.

Image 32.
Entrance gates for the water supply (Source: C. Lopez. n.d)

6.2.1.4 Farm allocation of settling pond for water coming in from natural system;

6.2.1.5 Concurrent use of settling pond as reservoir is not allowed;

6.2.1.6 Farm should have a standby aeration system in case the oxygen level in the system becomes low;

6.2.1.7 Ponds are required to be drained for more efficient organic waste removal;

6.2.1.8 Available layout of cages (map) indicating the distances between modules;

Explanatory Note:

Fish cages are installed with considerable distance from each other (e.g. 20 meters between cages).

Image 33.
Fish cages in lake (Source: BFAR. n.d.)

6.2.1.9 Records of clearing cage modules from clinging organisms (debris, plants, clams, etc.); and

6.2.1.10 Regular monitoring and repair of production units (nets).

6.2.2 Water quality should be verified to be adequate through testing to ensure safety.

Compliance requirements:

6.2.2.1 Farm personnel should be able to demonstrate awareness and skills on monitoring water quality;

6.2.2.2 Protocol on water quality monitoring should include the location, time and the different parameters to be monitored; and

6.2.2.3 Regular calibration of water quality equipment is required.

6.3 Personnel hygiene

6.3.1 All workers should undergo an annual medical examination.

Compliance requirements:

6.3.1.1 Evidence of annual check-up of all staff; and

6.3.1.2 Health screening of all staff should be part of the management system.

6.3.2 Personnel who could contaminate products should be excluded from working and handling of fishery products.

Compliance requirements:

6.3.2.1 Laborers/workers with evidence of contagious illness are not allowed to work in the farm;

6.3.2.2 Evidence of regular screening/checking of workers for communicable illnesses;

6.3.2.3 No personal accessories allowed when working/handling products at post-harvest; and

Explanatory Note:

Workers always maintain short and clean nails, no jewelries and other accessories that might contaminate the fishery products during post-harvest handling.

6.3.2.4 Standard operating procedures on hygiene are applied when working with products at the post-harvest stage.

6.3.3 Workers should wear suitable and clean working clothing.

Explanatory Note:

Personnel wearing appropriate working attire minimizes possible introduction or transmission of pathogens and contaminants onto the farm.

Image 34.
Personnel wearing appropriate working attire (Source: C. Lopez. n.d)

Compliance requirement:

6.3.3.1 Protocol on wearing clean working clothes during post-harvest handling to prevent contamination of fishery products should be in place and posted at employees quarters and entrance(s) to post-harvest processing areas.

6.3.4 Workers should wash their hands each time before commencing work.

Compliance requirement:

6.3.4.1 There should be a designated washing area with soap and clean water for use of workers before and after post-handling operation.

6.3.5 Wounds should be covered with waterproof bandages and should wear clean, waterproof gloves and boots.

Compliance requirements:

6.3.5.1 Workers with open wounds in hands or any part of the body which might come in contact with the fishery product during post-harvest activity are not allowed. However they may be assigned to other work in the farm that are not directly in contact with the fish/fishery product.

6.3.5.2 Workers with open wounds in any part of the body (e.g. foot) are not allowed to work in the farm unless sufficiently covered with waterproof bandages and clean, waterproof gloves or boots and/or wearing waders, if feasible.

6.3.6 Workers should not smoke, spit, eat or drink in the working and storage premises.

Compliance requirements:

6.3.6.1 Signage should be available to remind workers of the policies e.g. no smoking, spitting, eating, drinking in the working and storage areas; and

6.3.6.2 A designated area should be provided for smoking, eating, and drinking for workers.

Explanatory Note:

Image 35.
Visible signages for employees (Source: G. Coloma. n.d)

Compliance Requirement:

Feeds and feeding

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

7 Feeds and feeding

7.1 Origin of feed and feed substances

7.1.1 Fish/shrimp feeds should be obtained from a company registered with the Competent Authority. Samples of fish/shrimp feeds should be inspected, monitored and tested by the Bureau of Fisheries and Aquatic Resources (BFAR) for aflatoxin and chloramphenicol analysis.

Compliance requirements:

7.1.1.1 List of sources of feed suppliers;

7.1.1.2 Records of feed purchases;

7.1.1.3 Copies of feed labels; and

7.1.1.4 Copy of BFAR inspection report.

7.1.2 Additives, premixes and compound feeding stuffs should be obtained from a company registered with the Competent Authority and monitored by BFAR.

Compliance requirements:

7.1.2.1 List of sources of feed additives;

7.1.2.2 Records of use of feed additives; and

7.1.2.3 Protocol on the use and application of feed additives.

7.1.3 Imported feeds should be obtained from a company monitored by BFAR in compliance with prevailing national regulations and in conformity to the standards developed by FAO, WHO, Codex Alimentarius Commission (CAC) or trading partners.

Compliance requirements:

7.1.3.1 Registration from Competent Authority of all imported feeds by the feed millers; and

7.1.3.2 Record of an updated list of feed millers monitored by BFAR.

7.2 Storage of feeds and feed materials

7.2.1 Feeds should be stored properly in a cool and dry place.

Compliance requirements:

7.2.1.1 Proper feed storage in a cool dry area free from pest following the "first in – first out" (FIFO) principle;

Explanatory Note:

Feeds are stored in dry, well ventilated areas to prevent growth of molds and other contaminants. The storage facility should facilitate easy checking of possible pest infestation within and aide in easy identification and access of feeds.

Image 36.
Feed storage facility at Alsons Aquaculture Corporation, Sarangani (Source: S. Mamalangkap. n.d)

7.2.1.2 Records of stored/used feeds; and

7.2.1.3 Disinfection/cleaning area when mixing/preparing feeds.

7.2.2 Medicated and non-medicated feeds should be stored to minimize the risk of feeding to non-target animals.

Compliance requirements:

7.2.2.1 Area/space allocation for different types of feeds;

7.2.2.2 Permanent storage space allocation for medicated/non-medicated and leftover feeds; and

7.2.2.3 Written procedures for mixing and application of medicated feeds.

7.3 Feed quality

7.3.1 The content of additives and veterinary drugs should comply with Philippine regulations and conform to standards developed by Codex or trading partners.

Compliance requirements:

7.3.1.1 List of feed additives and other veterinary drugs used in feed formulation;

7.3.1.2 Procedures on application and withdrawal in place; and

7.3.1.3 Veterinary health plan.

7.3.2 Packages should be properly labeled with the description of composition storage conditions, expiry date, feeding rate, and other necessary guidance inadequate language.

Compliance requirements:

7.3.2.1 Feed tags/labels should be visible; and

Explanatory Note:

Complete labels are legible and attached to all feed bags, indicating the complete proximate analysis, storage requirements, production date, expiration date, and other necessary requirements to maintain good feed quality.

Image 37.
Fertilizer labels (Source: BFAR. n.d.)

7.3.2.2 Reusing of feed containers will be allowed only when it is appropriately labeled.

7.3.3 Feeds should be properly stored to allow first-in first-out release and use.

Compliance requirements:

7.3.3.1 Systematic storage plan; and

7.3.3.2 Space allocation for inspection.

7.4 Feeding

7.4.1 Feeding practices should minimize the risk for biological, chemical and physical contaminants of feeds and animals.

Compliance requirements:

7.4.1.1 Proper hygienic practices in feeding should be observed to avoid contamination by microorganisms; and

Explanatory Note:

Observe proper hygienic practices such as regular cleaning of production area and feeding equipment to avoid contamination caused by microbiological bacteria and other potential hazards to food safety .

7.4.1.2 Feed containers and utensils should be kept clean and maintained in good condition.

7.4.2 Feeding practices should ensure the maintenance of water and sediment quality.

Compliance requirements:

7.4.2.1 Feeding adjustments based on water quality;

7.4.2.2 Feeding adjustments based on life stage;

7.4.2.3 Feeding adjustments based on weather condition;

7.4.2.4 Evidence of proper feeds for species being cultured; and

7.4.2.5 Protocol on feeding based on culture system, species and target Feed Conversion Ratio (FCR).

Explanatory Note:

Photos showing proper observance of feeding practices such as right type and quantity, right type according to species, biological preferences and feeding method to maximize feeding efficiency and maintain good water quality.

Image 38.
Farmers fish feeding (Source: BFAR. n.d.)

7.4.3 Adequate records should be kept on the type, origin and use of feeds and feed ingredients.

Compliance requirements:

7.4.3.1 List of feed ingredients and their sources; and

7.4.3.2 List of species of fish used in fishmeal production.

Explanatory Note:

Monitoring and Record keeping of feeds used including the type, origin of feed ingredients, and supplier as stated in the Invoice Receipt) are kept to ensure traceability.

7.5 Use of non-pelleted/fresh feed

If non-pelleted feeds or fresh feeds (trash fish) are used in the farm as fish feed, the protocol on the administration of such should be provided.

Compliance requirements:

7.5.1 Records of the source, type, and mode of preparation of the fresh feed used;

7.5.2 Proper storage requirements of fresh feed should also be indicated.

Compliance Requirement:
Mortalities and Disease

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

8 Mortalities

8.1 Provide and maintain a suitable area for dead/ill animals until safe disposal is possible.

Explanatory Note:

Provide procedures and proper identification to facilitate disposal and to eliminate the possible contamination of dead stocks. In case of unusual or massive mortalities, contact the Fish Health Officer of BFAR.

Compliance requirements:

8.1.1 Procedures on mortality monitoring;

8.1.2 Records of mortality;

Explanatory Note:

All mortalities are to be recorded including volume and cause of death.

8.1.3 Procedures on treating mortalities for disposal;

8.1.4 Space allocation for disposal of dead animals; and

8.1.5 Disposal of large-scale mortalities should be in accordance with local regulations.

9 Disease

9.1 Control the spread of diseases

9.1 .1 Farm should be registered/certified by BFAR.

Compliance requirements:

9.1.1.1 Certificate of registration; and

9.1.1.2 Copies of BFAR Fish Health Officer disease monitoring report.

9.2 Processing establishments for slaughtering aquaculture animals for disease control purposes should be authorized by BFAR.

9.2.1 Disease control protocol should comply with BFAR regulation.

Compliance requirement:

9.3 Traceability records for the movement of animals should be completed and maintained.

9.3.1 Availability of movement documents.

9.4 A suitable risk-based animal health surveillance scheme should be in place.

Compliance requirement:

9.4.1 Veterinary health plan should be available.

9.5 Aquaculture animals intended for farming and restocking should be clinically healthy.

Compliance requirement:

9.5.1 Health certificate of new stocks (e.g. SPF/SPR PL for shrimp).

Explanatory Note:

Fry and Fingerlings to be stocked in the farm are sourced from accredited hatcheries while those wild-caught are to be quarantined, tested in the laboratory and disinfected prior to stocking.

List of accredited hatcheries can be found in the following link:
https://www.bfar.da.gov.ph/BFAR_AQUACULTURE?id=16

ISSUANCE OF HEALTH CERTIFICATE FOR EXPORT OF LIVE FOOD FISHES

OFFICE: FISH HEALTH MANAGEMENT AND QUALITY ASSURANCE SECTION (FHMQAS)

SCHED: Mondays to Fridays 8:00AM- 5:00 PM

FEES: NO FEES REQUIRED per Executive Order No. 654

REQUIREMENTS:
1. Invoice
2. Export Declaration
3. Laboratory Analysis
4. Registration Certificate

CLIENTS: Exporters

PROCESSING TIME: 5 hours - 2 working days

Step No.	Client Step	Agency Actions	Maximum Duration	Office/Person Responsible	Forms Required	Location of Office
1	Fill-up request form	Receive request form and requirements	10 mins.	Maryiou Cabello/ Marygrace Quintero	Request Form	FHMQAS Arcadia Bldg. 860 Quezon Ave., Q.C.
2		Assessment of submitted documents and requirements of the importing country	1 hour*	Simeona Regidor/ Mercadita Bantayan/ Joselito Somga/ Maria Abegail Albaladejo / Sonia Somga/ Marygrace Quintero/ Judith Mae Arvesu		FHMQAS
3		Processing of Health Certificate	2 hours	Maryiou Cabello/ Marygrace Quintero		FHMQAS
4		Approval of Health Certificate	1 hour	Simeona Regidor/ Mercadita Bantayan/ Joselito Somga/ Maria Abegail Albaladejo / Sonia Somga/ Marygrace Quintero/ Judith Mae Arvesu		FHMQAS
5	Claim Health Certificate	Record and release Health Certificate	15 mins.	Maryiou Cabello/ Marygrace Quintero	Claim stub	FHMQAS

* for countries not requiring laboratory analysis but minimum of 10 days for countries requiring laboratory analysis

Image 39.
BFAR Guide on Issuance of Health Certificate (Source: BFAR. n.d.)

9.6 Aquaculture animals and products placed on the market for further processing before human consumption should be disease-free.

Compliance requirements:

9.6.1 Notification system and control of disease within the country to OIE;

9.6.2 Control of disease of animal origin should be in place; and

9.6.3 Record keeping for zoonotic disease occurrences.

Explanatory Note:

Table 4. **Zoonotic Diseases in Aquatic Animals**

Zoonotic Diseases in Aquatic Animals

DISEASES	AGENT	SPECIES AFFECTED Common Name / Scientific Name
	Protozoa and Parasites	
Giardiasis	*Giardia lamblia*	*Tilapia nilotica* *Mugil cephalus*
Balantidiasis	*Balantidium* spp	Tropical Aquaculture
Malarial trypanosomes	*Trypanosoma* spp	Swamp Eel
Toxoplasmosis	*Toxoplasma gondii*	Cetaceans (Dugong, Asian Clawless Otter)
Trematodiasis	*Clinostomum philippinensis*	*Channa striata*
Heteropyhiasis	*Heterophyes heterophyes*	Freshwater and Brackish Fish
Cestodiasis: Diphyllobothriasis	*Diphyllobothrium latum*	Copepod Freshwater Fish Anadromous Fish Marine Fish
Nematodiasis: Anisakiasis	*Anisakis simplex* *Pseudoterranova*	Marine fish Sea Bream *Euthynnus affinis* (kawakawa) Cephalopod species
Gnathostomasis	*Gnathostoma* spp	Crustaceans and fishes *Anabas testudineus* *Channa batrachus* *Glossogobius giuris* *Terapon plumbeus*
	Bacteria	
Atypical mycobacteriosis	*Mycobacterium marinum, Mycobacterium fortuitum* *Mycobacterium ulcerans*	Sygnatid Aquaculture (seahorse &pipefish)
Infection with *Streptococcus*	*Streptococcus iniae* *Streptococcus agalactiae*	Tilapia Catfish
Infection with *Aeromonas*	*Aeromonas hydrophila* *Aeromonas sobria* *Aeromonas caviae*	Catfish Seabass Tropical/Ornamental fish
Vibriosis	*Vibrio cholera* *Vibrio damselae* *Vibrio parahaemolyticus* *Vibrio vulnificusare* *Vibrio fluvialis* *Vibrio mimicus* *Vibrio metschnikovii* *Vibrio hollisae* *Vibrio alginolyticus*	Grouper Tilapia Snapper Seabass Eel Shrimp
Infection with *Edwardsiella*	*Edwardsiella tarda*	Tilapia Asian Catfish Common Carp Sea Bream
Infection with *Enterobacteriaceae*	*Salmonella* spp *Citrobacter* spp *Serratia* spp *Pseudomonas* spp *Shigella* spp *Staphlococcus* spp *Listeria* spp *Clostridium* spp	Nile Tilapia
Infection with *Plesiomonas*	*Plesiomonas shigelloides*	Tilapia
Leptospirosis	*Leptospira* spp	Cetaceans

9.7 Measures for the notification and control of diseases of aquatic animal origin should be in place.

Compliance requirements:

9.7.1 Training of the farmers to identify abnormalities in fish behavior and physical appearance;

9.7.2 Evidence of awareness on diseases and disease control; and

9.7.3 Notification system of observed abnormalities to BFAR.

Explanatory Note:

Fisherfolk may contact the nearest BFAR Provincial Office for notification and control of disease through:

Link for BFAR Regional Offices' contact details:
https://www.bfar.da.gov.ph/about_us.jsp?id=65

9.8 Surveillance program should be in place for diseases of animal origin.

Compliance requirements:

9.8.1 Implementation of farm biosecurity measures to prevent the spread of diseases that are of animal origin; and

9.8.2 The farm should have a plan for the safe removal of sick and dead fishes and eggs.

Explanatory Note:

Image 40.
Aeromonas infection in freshwater fish (Source: BFAR. n.d)

9.9 Adequate records should be kept on the occurrences of diseases that may affect food safety.

Compliance requirement:

9.9.1 Record keeping of previously reported cases and recent occurrence of diseases should be maintained for future reference and control measures and preventive action.

Compliance Requirement:

Drugs and chemical use

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

10 Drugs and chemical use

10.1 Veterinary drugs and chemicals

10.1.1 Veterinary drugs, medicated feeds, chemical and biological substances should only be obtained from registered /authorized manufacturers and suppliers.

Compliance requirements:

10.1.1.1 Should provide purchase record for the last two (2) croppings including date of purchase, name of product, quantity purchased, batch number, expiry date, name of supplier secured in dry and flood-free storage area at the site; and

10.1.1.2 Should be sourced from registered/authorized supplier by the Competent Authority

10.1.2 Veterinary drugs, medicated feeds, chemical and biological substances should only be those permitted/registered according to national regulations.

Compliance requirements:

10.1.2.1 Should provide administration record for the last two (2) croppings including batch number, date administered, identity of fish fish/group treated, quantity or biomass of fish treated, total quantity of medicine used, date of the end of treatment, date of completion of withdrawal period, earliest date the fish is safe for consumption, name of person who administered the medicine; and

10.1.2.2 Should secure storage area of drugs and chemicals in accordance with the instruction on the label.

Explanatory Note:

Veterinary drugs, medicated feeds and biological substances are to be kept in a hygienic condition and stored in a way that will ensure efficacy, effectiveness and potency.

Table 5. **List of banned antimicrobials in food producing animals**

Regulations	
BFAR -AC No. 256 s. 2015	Declaring malachite green and gentian violet as health hazards and prohibiting their use in food fish production and trade
DA AO No. 14 s. 2003	Ban on the use in food animals of beta-agonist Drugs used in humans as bronchodilators and tocolytic agents.
DOH and DA Joint AO No. 2 s. 2000	Declaring ban/phase out of the use of nitrofurans in food-producing animals.
DOH AO NO. 4-A AND DA AO No. 1 s. 2000	Banning and withdrawal of olaquindox and carbadox from the market.
DOH AO No. 91 and DA AO No. 60 s. 2000	Declaring ban on the use of chloramphenicol in food-producing animals

10.1.3 Substances requiring prescription should only be used under adequate supervision by a qualified expert. Non-prescription substances should be used according to manufacturer's instructions and as specified on the label.

Compliance requirements:

10.1.3.1 Veterinary Drug Order (VDO) as prescribed by a Licensed Veterinarian, preferably specializing in fish health, or upon the recommendation of the Fish Health Officer or trained farm personnel on fish health should be on file; and

10.1.3.2 Supervision may be done by the Fish Health Officer or trained farm personnel on Fish Health.

10.2 Storage and use of veterinary drugs and chemicals

10.2.1 Veterinary drugs, medicated feeds, chemicals and biological substances should be adequately stored according to instructions.

10.2.2 Withdrawal periods and residues should be verified by adequate testing.

Explanatory Note:

Veterinary drugs, medicated feeds and biological substances are to be kept in a hygienic condition and stored in a way that will ensure efficacy, effectiveness and potency.

Table 6. **Sample form for record keeping of specific substances being tested regularly (Source: BFAR. n.d.)**

Administration of Drugs

Farm Name: _____ Location: _____

Pond/Cage/Tank/Pen #: _____ Period Covered: _____

Name of Drugs	Dosage	Volume to be Administered	Indented Use	Date of Application	Withdrawal Period	Methods of Application				Administered by (name & signature	Remarks
						Incorporated in Feeds	Direct	Bath	Dip		

Chemical Application

Farm Name: _____ Location: _____

Pond/Cage/Tank/Pen #: _____ Period Covered: _____

Date	Timing	Location	Chemical Applied	Volume	Reason for Application	Method of Application	Withdrawal Period	Remarks	Administered by (name & signature

Compliance requirement:

10.2.2.1 Drug residues should not be present in the body of animals by observing withdrawal period to ensure that the Maximum Residue Level (MRL) is acceptable based on the standards set by Codex or trading partners.

Compliance Requirement:

Harvesting and Transport

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

11 Harvesting and transport

11.1 Harvesting

11.1.1 Harvesting equipment and paraphernalia should be easy to clean and sanitize. Such equipment should be kept in clean condition.

Explanatory Note:

The photos show proper lining up of equipment and storing in a dry and covered area.

Image 41.
Harvesting materials at Cabadbaran Aquatech Resources Corporation, Inc. (Source: M. Talavera. n.d)

Compliance requirements:

11.1.1.1 List of harvesting equipment and their condition;

11.1.1.2 Proper storage area; and

Explanatory Note:

Image 42.
Training graduates of the Southeast Asian Fisheries Development Center Aquaculture Department (Source: SEAFDEC/AQD. n.d)

11.1.1.3 Protocol on cleaning/sanitizing harvesting equipment

11.1.2 Harvesting should be planned in advance and timed to prevent fishery products from being exposed to unduly high temperatures.

Compliance requirements:

11.1.2.1 Standard operating procedures where timing is mainly considered; and

11.1.2.2 Farm should demonstrate preparedness during harvest (staff, equipment, etc.).

Explanatory Note:

Tubs or any medium used in harvest are made of impenetrable material containing clean, uncontaminated, chilled water.

Image 43.
Tubs with fish harvest (Source: BFAR n.d)

11.1.3 Practices should ensure rapid killing of harvested aquatic animals.

Compliance requirements:

11.1.3.1 Protocol on stunning and killing aquatic animals; and

11.1.3.2 Chilling temperature should be maintained all throughout the harvest to facilitate rapid killing of aquatic animals;

Explanatory Note:

Chilling temperature is maintained at 0-4° C.

11.1.4 Practices should ensure that the viability of live aquatic animals is not unduly affected due to extreme temperatures, physical damage or undue stress.

Compliance requirement:

11.1.4.1 Standard operating procedures on harvesting taking into account the time of the day/season.

11.1.5 Fishery products should be quickly and hygienically handled, using practices that do not cause physical damage to the edible part of product.

Compliance requirements:

11.1.5.1 Protocol on handling of fishery products should be in place and implemented; and

11.1.5.2 Killed aquatic animals should be cooled down quickly and maintained at temperature approaching that of melting ice in all parts of each unit.

11.1.6 Records on harvesting should be maintained for traceability purposes.

Compliance requirement:

11.1.6.1 Farm records on harvesting and transporting fishery products available for at least 2 croppings.

11.1.7 Adequate records on the buyers of final products should be kept (one-step-forward traceability).

Compliance requirement:

11.1.7.1 Farm internal traceability system or BFAR-based traceability system.

11.2 Post-harvesting and handling

11.2.1 Post-harvesting equipment and paraphernalia should be easy to clean and sanitize. Such equipment should be kept in clean condition.

11.2.1.1 Available list of equipment used in harvesting and transport;

11.2.1.2 Written procedure on cleaning/sanitizing equipment prior to storage;

11.2.1.3 Farmers and laborers should be able to demonstrate the process on cleaning/sanitizing after harvest; and

Explanatory Note:

All equipment and other implements for post-harvest, handling and holding are made of non-corrodible materials, smoothly-finished, easy to clean and sanitized and stored in a clean designated area free from pests.

Image 44.
Sanitized tools (Source: G. Coloma and M. Espiritu. n.d)

11.2.1.4 All equipment for post-harvesting and handling should be isolated.

11.2.2 Operations such as sorting, weighing, washing, draining, etc. should be carried out quickly, hygienically, and without damage to the edible part of the product.

Compliance requirements:

11.2.2.1 Available protocol on handling the product taking into account food safety;

11.2.2.2 Duration of activity should recognize the recommended time by BFAR; and

11.2.2.3 Provision of proper area for post-harvesting activities.

Explanatory Note:

Image 45.
Slaughtering/killing area showing chilling tanks (Source: C. Lopez. n.d)

Image 46.
Slaughtering/killing area showing sorting tables (Source: C. Lopez. n.d)

11.2.3 Food additivesand chemicals, whichare used incontact with products, should be in compliance with prevailing legal requirements.

Compliance requirements:

11.2.3.1 List of approvedadditives and chemicalsthat may beused/added to products during post-harvest processing;

11.2.3.2 Guidelines for using additives;

11.2.3.3 Amount ofadditives should be in accordancewith regulations of the Philippine FDA and standards developed by Codex; and

11.2.3.4 Only trained staff is authorized to perform incorporation of additives and chemicals.

11.2.4 Harvest wastes should be collected in designated areas to minimize risk of cross-contamination.

Compliance requirements:

11.2.4.1 Protocol on waste collection and disposal; and

11.2.4.2 Allocation of designated areas for collected waste during post-harvesting in accordance with local regulations.

11.3 Ice and water supplies

11.3.1 Clean and uncontaminated water should be available and used in sufficient amounts for post-harvest, handling and cleaning operations.

Compliance requirements:

11.3.1.1 Water to be used during post-harvesting, handling and cleaning should be clean but have similar characteristics from fish's original condition to avoid stress due to sudden change of environment; and

11.3.1.2 Before slaughtering, aquatic animals should be washed with clean/ uncontaminated water.

11.3.2 Ice should be sourced only from approved establishments using potable water.

Compliance requirements:

11.3.2.1 Records/traceability of ice supply including a copy of Certificate of Analysis from ice source; and

11.3.2.2 Protocol on sourcing uncontaminated ice and water.

11.3.3 Ice should be received, handled and stored under good sanitary conditions, which minimize risks of contamination.

Compliance requirements:

11.3.3.1 Ice should be stocked in clean containers; and

11.3.3.2 Ice should not be re-used or transferred from one container to another.

11.4 Transport

11.4.1 Transport should be carried out in easy to clean and clean facilities (boxes, containers, etc.).

Explanatory Note:

The fish is transported in smooth, fitted, non-corrodible containers and stored properly to prevent fish damage.

Compliance requirements:

11.4.1.1 Transport mediums should be clean and sanitized prior to use; and

11.4.1.2 Procedure available for preparing equipment before and after use.

11.4.2 Transport conditions shouldbe arranged toavoid contamination from surroundings e.g. air, soil, water, oil, chemicals etc.

Explanatory Note:

Vehicles used in transportation are covered to prevent exposure to sunlight and other contaminants. In the use of refrigerated vans for transport, temperature control devices are installed.

Image 47.
Container van for transport (Source: BFAR n.d)

Compliance requirements:

11.4.2.1 Standard operating procedures in transporting live or dead aquatic animals should be available;

11.4.2.2 Transport containers should be properly covered to avoid contamination as well as accidental escape; and

11.4.2.3 Monitoring records of container's temperature.

11.4.3 Live aquatic animals should be transported under physical conditions which do not adversely affect their viability.

Compliance requirements:

11.4.3.1 Transport materials should follow the legal requirements as well as the buyer's requirements;

11.4.3.2 Protocol on transporting live aquatic animals;

11.4.3.3 Monitoring record of survival during transport;

11.4.3.4 Water, temperature and oxygen supply should be suitable for live aquatic animals transport, and biomass density should be followed as required by local regulations as well as buyer's requirements.

11.4.4 Dead aquatic animals should be transported in containers with ice or with ice plus water, in sufficient amounts to ensure a temperature of around 0-4°C in all products, and during the whole period of transport.

Compliance requirements:

11.4.4.1 Aquatic animals should be transported in sealed container to maintain at most 0-4C temperature;

11.4.4.2 Records of temperature monitoring during transport;

11.4.4.3 Records of the amountand type ofspecies per containershould be available; and

11.4.4.4 Fish and ice ratio should follow local regulations and buyer's requirements.

11.4.5 Containers for ice plus product should allow melted water to drain away from the product.

Compliance requirements:

11.4.5.1 Design of containers should allow water (melted ice) to drain away from the product; and

11.4.5.2 Monitoring of water content in the container.

11.4.6 Based on the prevailing requirement, prohibited additivesand chemicals should not be used in contact with products/live animals.

Compliance requirements:

11.4.6.1 Available list of additives and chemicals being used during transport.

11.4.6.2 Records for transport of fishery products should be maintained to ensure product traceability (e.g. Local Transport Permit).

Compliance Requirement:

Biodiversity and Animal Welfare

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

12 Biodiversity

12.1 Escapes and captive stocks

12.1.1 Screens and barriers should be available and limit the incidence of escape to the natural environment of cultured species.

Compliance requirements:

12.1.1.1 Water inlet and outlet should have proper screens and barriers that would eliminate the incidence of escapes or entry of unwanted species;

12.1.1.2 Regular monitoring of the screens and barriers; and

12.1.1.3 Records of monitoring and repair of screens.

12.1.2 Trapping devices should be installed in areas where potential escapes could happen to reduce the risk of the event happening.

Compliance requirements:

12.1.2.1 Trapping devices placed in location where potential escape could happen;

12.1.2.2 During handling of fish, trapping devices should be installed in working stations to eliminate/reduce incidence of escape.

12.2 Predator control

12.2.1 Avoid the use of lethal methods in eradicating non-fish predators, especially those classified as vulnerable by the International Union for Conservation of Nature and Natural Resources (IUCN).

Compliance requirements:

12.2.1.1 Farms should not practice nor promote lethal means of controlling predators; and

12.2.1.2 Farms should have a procedure to avoid accidental death of predators.

12.2.2 Impact on endangered species.

Compliance requirements:

12.2.2.1 Farms should be aware of the different species in the region listed under the IUCN red list; and

12.2.2.2 Farms should have proactive measures to avoid accidental death of red-listed species.

13 Animal welfare

13.1 Survival

Compliance requirements:

13.1.1 Farms should be able to demonstrate acceptable survival rate during culture period; and

13.1.2 Records of survival in each stage of the production.

13.2 Handling and fasting

Explanatory Note:

Milkfish fry are packed for transport by youth graduates of the training program of the Southeast Asian Fisheries Development Center Aquaculture Department (SEAFDEC/AQD).

Image 48.
Packing of milkfish fry (Source: SEAFDEC/AQD. n.d)

Compliance requirements:

13.2.1 Duration of fasting should be at a maximum of 24 hours only;

13.2.2 Minimum duration of fish/stocks away from water should be taken care of; and

13.2.3 During sampling, avoid practices that could potentially put the stocks into much stress (tagging, transporting, etc.).

13.3 Stunning

Compliance requirement:

13.3.1 Proper stunning should be done prior to bleeding.

Compliance Requirement:
Labor and Community

The provisions of the standard are written in black font color. The explanatory notes are indicated in red font color inside a yellow box. Photos and images are also found in succeeding pages.

14 Labor and community

14.1 Child labor

Compliance requirements:

14.1.1 No incidence of child labor in the farm consistent with the Labor Code; and

14.1.2 Proactive anti-child labor policy exists in the farm.

14.2 Discrimination/ Unequal treatment of employee

Compliance requirements:

14.2.1 Farms should have a proactive anti-discrimination practice; and

14.2.2 Laborers should be able to get the same rate from the same line of work regardless of their characteristics (gender, ethnic, race, etc.).

14.3 Training on health and safety

Compliance requirements:

14.3.1 All laborers should undergo health and safety orientation prior to the start of work; and

14.3.2 Health and safety procedures should be available in the working station.

14.4 First aid

Compliance requirements:

14.4.1 First aid kit should be available near the working station; and

14.4.2 Laborers should be able to demonstrate awareness on the different first aid measures.

14.5 Protective gear

Compliance requirements:

14.5.1 List of protective gear in the farm; and

14.5.2 All laborers should wear protective masks/gear when working in the farm.

14.6 Wages and working hours

Workers should receive fair and decent salaries consistent with existing laws and other regulations.

Explanatory Note:

Image 49.
Laborers wearing protective equipment (Source: Seasia.co. n.d)

Compliance requirements:

14.6.1 All laborers should receive salary based on national labor regulations;

14.6.2 All laborers should be given regular days off and be allowed to leave the farm premises; and

14.6.3 Employers should be able to show evidence of legal compliance with national legislation.

Explanatory Note:

Employees' wages should be in accordance with the Labor Code of the Philippines as well as provision of benefits such as insurance and medicare.

14.7 Living conditions for employees

14.7.1 Living quarters of stay-in labor should be safe and clean.

Explanatory Note:

Living quarters should have proper ventilation, spaciousness, and availability of water.

Compliance requirements:

14.7.1.1 Housing should meet local regulation for stay-in labor;

14.7.1.2 Individual bed should be provided for each laborer; and

14.7.1.3 Separate room should be provided for male and female staff.

14.7.2 Potable water and clean toilets should be available.

Compliance requirements:

14.7.2.1 Provision of potable water in the living quarters and also in the working station; and

14.7.2.2 Provision of decent toilet.

14.8 Social

14.8.1 Farms should not impact the access of the community to common resources.

Compliance requirements:

14.8.1.1 Farms should not impede navigation due to illegal encroachment; and

14.8.1.2 Farms should not impede local community from fishing in fishing grounds near the farms.

14.8.2 Conflict resolution

Compliance requirements:

14.8.2.1 Farms should have a written protocol on how to deal with conflicts with the community; and

14.8.2.2 Farms should interact with the community to promote good relations

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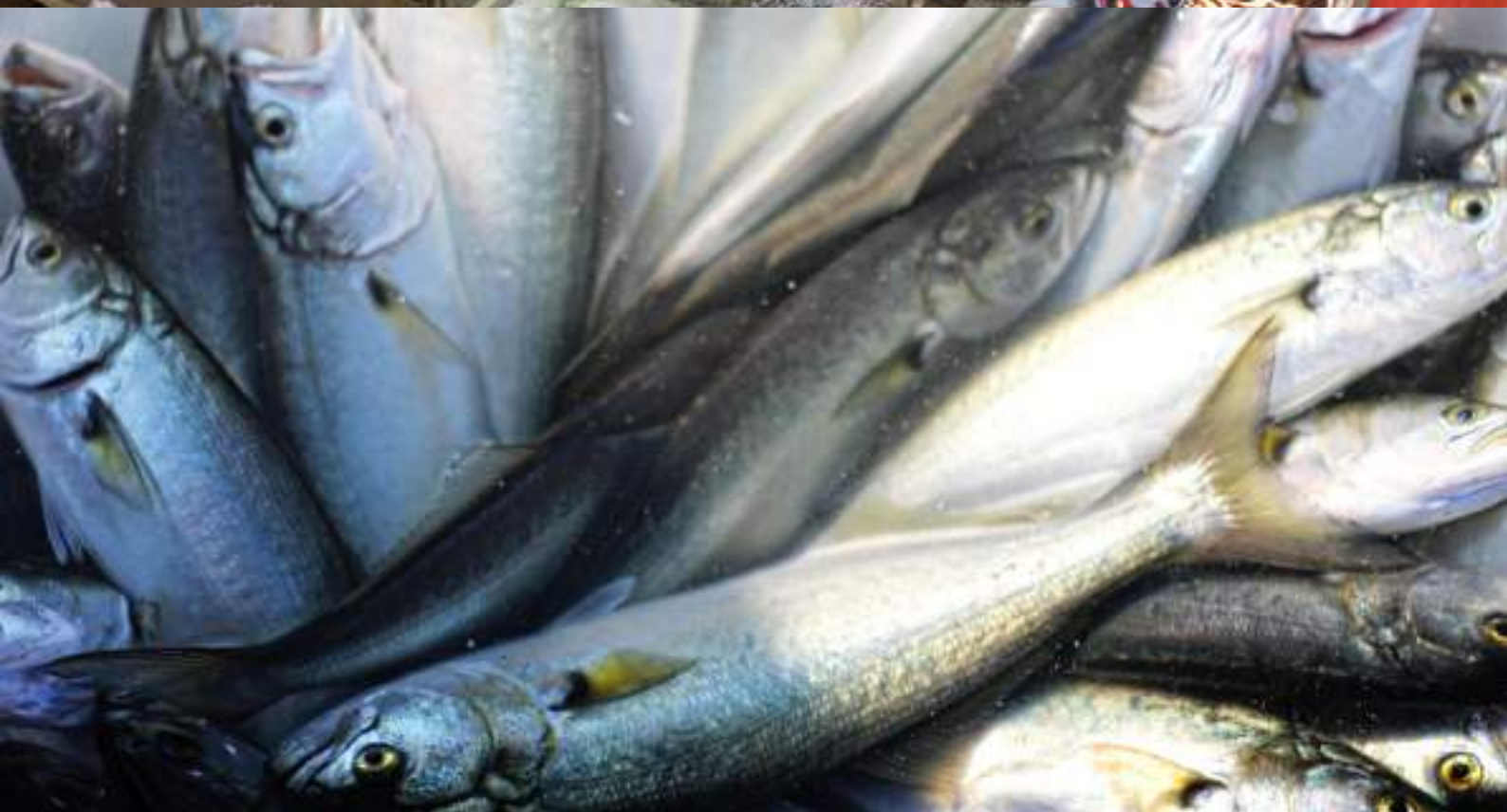

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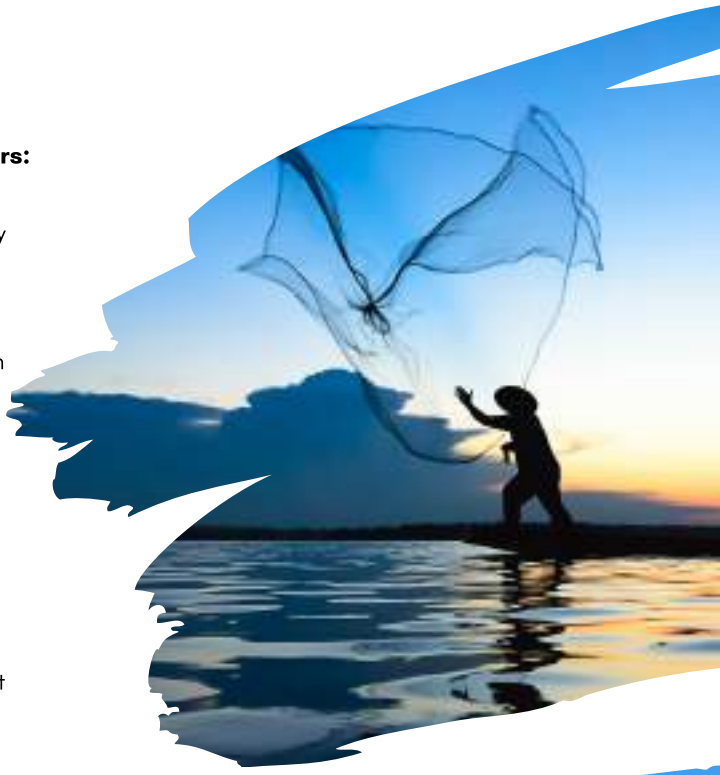

This Explanatory Manual (EM) serves as a supplementary learning material for the Philippine National Standard (PNS) Code of Good Aquaculture Practices (GAqP) (PNS/BAFS 135:2014). The EM aims to aid stakeholders by promoting uniform understanding and interpretation of the PNS to ensure efficient adoption and implementation of the Standard.

PNS/BAFS 135:2014 was developed to support Filipino fisherfolk and to promote sustainable aquaculture farming.


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