

DRAFT

Aquaculture Management Standard
Guidelines for Auditors
- Indicators of Conformity -
Version 2.0



Marine Eco-Label Japan Council

Introduction

This document, Aquaculture Management Standard, Guidelines for Auditors - Indicators for Conformity - (hereinafter referred to as Guidelines), refer to the indicators of each standard and those meanings that assist the auditors to evaluate whether the unit of certification is conformity or non-conformity with standards. This Guidelines aims to equalize the quality of assessment results concluded by the different auditors.

This guideline has been revised in conjunction with the adoption of the MEL Aquaculture Management Standard Ver. 2.0. The main objectives are to respond to the changes in the environment of the aquaculture industry in Japan and overseas, and comply with the GSSI (Global Sustainable Seafood Initiative) Benchmark Tool Ver. 2.0. Besides, the descriptions of criteria, standards and indicators and explanatory texts, which might be unclear at some points, were modified as clear as possible. It is hoped that the judgment and basis of assessment will be further clarified and contribute to the improvement of the quality and uniformity of assessment and auditing.

MEL AMS is applicable to all aquaculture species and production systems. The unit of certifications are four production systems, 1) marine cage aquaculture (yellowtail, greater amberjack, red sea bream, Pacific bluefin tuna, Coho salmon, Japanese flounder and Japanese pufferfish, etc.), 2) inland aquaculture (rainbow trout, Ayu, Japanese flounder and Japanese pufferfish, etc.), 3) shellfish aquaculture (scallops and oyster, etc.), and 4) seaweed aquaculture (wakame seaweed, laver and *nemacystus decipiens*, etc.) under the same management procedures.

The unit of certification is basically the one that an aquaculture farmer carries out under the same management rule in one aquaculture area. However, it can be subject to certification even if multiple producers are organized, and three types of certification are established: Multi-site Certification, Site-sSelected Certification, and Group Certification. Since the details are set out in "Appendix 1 Guidelines for MEL Aquaculture Certification Units" at the end of this document, the assessment shall be conducted based on these guidelines.

Principle 1. Social Responsibility in Aquaculture Operations
(To surely fulfil social responsibilities)

All aquaculture activities must be conducted legally in accordance with all the relevant laws and regulations to fulfill social responsibility. Many laws and regulations are related to the aquaculture standard of Marine Eco-Label Japan, and each criterion of the standard may be stricter than laws and regulations. Each criterion of Principle 1 can be achieved by satisfying criteria in other principles. Social responsibility further requires providing employees with appropriate working conditions and environments as well as not making use of illegal labor.

Criterion 1.1

The aquaculture operations shall be conducted in compliance with all the relevant laws, regulations and ordinances of national and local governments where the aquaculture site is located.

1.1.1	Aquaculture farmers shall carry out production in compliance with all the relevant national and local laws and regulations.	
Indicators	A	Applicants have prepared and maintained documents listing required procedures in accordance with relevant laws and regulations.
	B	Specific actions are properly conducted to meet Indicator 1.1.1A.
1.1.2	Aquaculture farmers shall obtain the requisite licenses and permissions, and the aquaculture site and target species shall be in accordance with the licenses and permissions.	
Indicators	A	Requisite fishery licenses and other relevant permits are obtained. The actual aquaculture production matches the requirements in the permit.
	B	Where regulations of fishery rights are set by the local government or fisheries cooperative, farmers understand the contents of the regulations correctly, and aquaculture production is carried out in accordance with the regulations.
1.1.3	Workers shall be treated fairly, with appropriate wages, welfare, and working conditions in accordance with the relevant laws and regulations. A proper health management and working environment shall be secured for them.	
Indicators	A	Workers are provided with appropriate wages, welfare, and working conditions in accordance with the relevant laws and regulations.
	B	Proper health management of employees (e.g., regular health checks) is carried out and recorded.
1.1.4	The use of child labor or other illegal labor is strictly prohibited.	

Indicator	A	Illegal labor practices, such as child labor or employment of illegal foreign workers, are not conducted.
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**Principle 2. Consideration for the health and welfare of aquatic animals
(To ensure the health and welfare of aquatic animals)**

Animal welfare for aquatic animals for aquaculture is subject to international laws and regulations. Aquaculture management with consideration for the health and welfare of aquatic animals is therefore an essential requirement for exporting the cultured animals. The Farmed Fish Health Code of the OIE (International Epizootic Office) provides general principles of animal welfare, since the applicable animals and production methods vary. Although the animal welfare of livestock is different from that of aquatic animals, the standards aim to properly apply ideas and methods to aquatic animals similar to those for livestock.

Criterion 2.1

The aquatic animals shall be managed in a suitable environment to minimize stress on them, and precautionary measures against diseases shall be planned and executed.

2.1.1	Aquaculture farmers shall use proper water in accordance with Water Quality Standards for Fisheries based on the type of target species and their life stage.	
Indicators	A	The dissolved oxygen level, necessary for the healthy growth of aquaculture animals, meets the water quality standards for fisheries (see Appendix 2: Water Quality Standards for Fisheries).
	B	Contamination indicators, such as COD (Chemical Oxygen Demand), and total nitrogen level, as well as levels of COD and TS (Total Sulfide) on the bottom, meet the water quality standards for fisheries (see Appendix 21).
	C	To deal with adverse impacts on aquaculture, such as red tide and pollution, procedures for the information collection, record of conditions, and countermeasures against the incident are provided.
2.1.2	Aquaculture farmers shall provide sufficient cage space and a suitable rearing density to maintain satisfactory environmental conditions at the growing site.	
Indicators	A	Cages in mariculture farms are located at intervals for maintaining sufficient circulation of seawater.
	B	The numbers of aquaculture animals for each rearing unit are recorded.
	C	Aquaculture animals are reared with proper density.
2.1.3	Aquaculture farmers shall monitor the environmental conditions of the farming site by using proper indicators. Appropriate procedures shall be established for dealing with deteriorating conditions.	
Indicators	A	Monitoring of the environment suitable for aquaculture animals is planned and

		implemented accordingly.
	B	The monitoring results meet the standards in these Guidelines.
	C	Necessary improvement measures are taken in case the results are not met.
	D	Improvement of water quality is ensured as a result of measures.
2.1.4	Aquaculture farmers shall use suitable feed matched to the nutritional requirements of aquatic animals, with proper quantities for maintaining their healthy condition.	
Indicators	A	Feed used at the aquaculture farm is properly stored to avoid quality deterioration.
	B	Proper feed is used at the aquaculture farm.
	C	When there is a concern about the health of the aquatic animals, vitamins and other feed additives are properly used in accordance with the relevant laws and regulations as necessary.
	D	The amount of feed given to the aquatic animals are recorded for each rearing unit.
	E	In line with the stipulated procedures, observing bite condition, proper amount of feed is adjusted and given to the aquatic animals.

Criterion 2.2

Aquatic animals shall be maintained under appropriate management to prevent disease outbreak and spread.

2.2.1	Aquaculture farmers shall monitor the health condition of aquatic animals regularly with appropriate indicators.	
Indicators	A	Procedures for regular monitoring of the health condition of aquatic animals are provided.
	B	Monitoring is conducted by following the procedures and the results are recorded.
	C	The records are regularly reported to the officer of the Fisheries Experimental Station for their review and counselling.
2.2.2	Aquaculture farmers shall establish a procedure for the collection and treatment of dead and moribund aquatic animals, and shall treat them properly in accordance with the decided procedure.	
Indicators	A	When dead and moribund aquatic animals are found, the animals are immediately removed into special containers and the number of such animals is recorded.
	B	Procedures for the proper treatment of moribund aquatic animals are

		established and implemented.
2.2.3	Aquaculture farmers shall manage their facilities to prevent escape, and shall not release diseased aquatic animals intentionally.	
Indicators	A	Diseased aquatic animals are not released intentionally.
	B	Aquaculture farmers remove organisms attached to facilities when the organisms may serve as a breeding ground for pathogens, and regularly repair the nets to avoid spreading diseases through the escape of diseased organisms.
2.2.4	Seed shall be certified free from specific or material pathogens before introduction to aquaculture sites.	
Indicators	A	The rearing history of the aquaculture seeds before introducing them into the site is confirmed and recorded.
	B	Seeds are inspected as necessary and properly kept in a separate site until the test results are obtained.
	C	If disease was discovered in the testing, disposal or treatment is conducted by following the instructions of experts.
	D	In case seeds were imported from other countries or were purchased from an area where a specific disease occurred in the past, the certificate of non-disease infection has been obtained.
2.2.5	Aquaculture farmers shall manage the aquatic animals properly by effective preventive measures and vaccination throughout all the rearing stages.	
Indicators	A	When a fisheries vaccination is certified, such vaccine is actively used to prevent diseases. The vaccine is properly used in accordance with the relevant laws and regulations.
	B	Disinfection and other measures to prevent spreading of the disease specified in the Guideline for the Countermeasures against Specific Diseases are conducted as needed. Preparations have been made for such activities.

Criterion 2.3

In the case of disease outbreak, the aquatic animals shall be treated in accordance with the applicable laws and regulations.

2.3.1	Aquaculture farmers shall establish and implement procedures for responding to disease.	
Indicators	A	Procedures for diagnosis and cure of diseases in case of disease outbreak are provided.

	B	The procedures include measures to prevent the spread of diseases.
	C	Treatment is implemented in line with the procedures above mentioned.
2.3.2	Aquaculture farmers shall treat diseases in accordance with the diagnosis and decision on treatment under the supervision of Fish Epidemic Prevention Officers.	
Indicators	A	Diagnosis and decision on treatment of diseases are implemented based on the results of examinations conducted by Fish Epidemic Prevention Officers, etc.
	B	When antimicrobial agents are used, procedures (e.g., instructions for the use of fisheries antibacterial agents) are followed and documented.
	C	As special cases where the farm starts disease treatment to avoid disease spreading without the results of the examinations conducted by Fish Epidemic Prevention Officers, etc., the procedures are followed by instructions.
2.3.3	Aquaculture drugs shall be used in accordance with the Act on Securing Quality, Efficacy and Safety of Pharmaceuticals, Medical Devices, Regenerative and Cellular Therapy Products, Gene Therapy Products, and Cosmetics (Act No. 145 of 1960) and other relevant regulations. Aquaculture farmers shall establish procedures for drug usage to minimize any impact on the environment.	
Indicators	A	In case medicines are used, proper measures are taken to prevent the contamination of other aquaculture animals and the spilling of medicines into the environment.
	B	When medicines are used, the cage where the medicines are used, the name and dose of medicines, the date of medication, and the period of cessation are recorded.
	C	Information is recorded on aquaculture drugs such as records of purchase, manufacturer and retailer, serial numbers, date of production, purchase, and use, and administered dosage in stock, etc. Aquaculture drugs are stored properly to prevent deterioration in their quality.
	D	Aquaculture drugs are disposed of after the expiration date.
2.3.4	Antimicrobial agents shall be used in accordance with the Principles for Responsible and Prudent Use of Antimicrobial Agents in Aquatic Animals of the OIE Aquatic Animal Health Code.	
Indicator	A	This indicator can be confirmed as standards 2.3.1 to 2.3.3 are confirmed.
2.3.5	Aquaculture workers shall be trained, educated, and competent to manage aquatic animal health. Workers shall have high awareness of these matters and shall act responsibly.	
Indicator	A	The aquaculture workers regularly participate in training sessions on fish

	diseases provided by the local government and others.
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Principle 3 Assurance of Food Security
(To carry out aquaculture activities properly for food safety)

The aquaculture products should contribute to the promotion of the health of consumers. Aquaculture animals must be reared in a manner to ensure the safety of the products for human consumption. The following criteria are established to ensure the trust of consumers in the aquaculture products through the efforts of aquaculture farmers to minimize unexpected health risk to consumers.

Criterion 3.1

Aquaculture activities, environment, materials, and equipment shall be managed properly to minimize the risks to human health.

The location of aquaculture sites is particularly associated with the accumulation of chemical substances such as location-environmentally derived pesticides and heavy metals. It is necessary to conduct risk management at seed production facilities. Therefore, this criterion is also subject to assessment in the case of certifying seed production facilities.

3.1.1	The aquaculture site shall be selected in consideration of proper risk assessment of pollution at the site and the surrounding environment.	
Indicators	A	The location of the aquaculture farm and the number and arrangement of cages are documented.
	B	The location of agricultural farms and factories and the inflow of rivers around the aquaculture farm are documented. The potential sources of contamination of the aquaculture farm are evaluated.
3.1.2	Aquaculture farmers shall conduct hazardous substance monitoring at the aquaculture site to prevent hazards to human health.	
Indicator	A	Monitoring plans are established for existing risks, and the level of contamination is not harmful.

Criterion 3.2

Aquaculture medicines shall be managed properly in accordance with procedures for preventing drug residues.

This criterion is subject to assessment since the disclosure and provision of rearing history are necessary in the case of certifying seed production facilities.

3.2.1	Aquaculture medicine shall be used based on the expertise and accurate diagnosis of Fish Epidemic Prevention Officers to optimize its medical efficiency, and records of drug usage shall be kept.	
Indicator	A	Compliance with this indicator is confirmed by compliance with Criterion 2.3.

Criterion 3.3

Feed shall be properly managed to minimize any risk of contamination.

This criterion is also subject to assessment since the disclosure and provision of rearing history are necessary in the case of certifying seed production facilities.

3.3.1	Feed, feed additives, and feed ingredients shall be used responsibly to prevent chemical contamination. Traceable records on feed used for each aquaculture unit shall be kept.	
Indicators	A	Information on feed is recorded, such as the place of origin (whether the identification of the fishing site is traceable), provider, fish species, quantity, and date of purchase; and records of purchase are kept.
	B	Information on manufactured feed and feed additives is recorded, such as the manufacturer, provider, name of the product, serial number, quantity, date of purchase, composition, etc.; and records are stored.
	C	For manufactured feed and feed additives, documentation is obtained and kept showing conformity with the Act on Safety Assurance and Quality Improvement of Feeds and the origin of compound feed ingredients (for fish meal, oil, etc., the species of the raw fish, and whether the identification of the fishing water is traceable).
	D	The types and amounts of feed given to the fish are recorded for each cage.
	E	Feeding equipment and other tools are regularly cleaned and disinfected and managed hygienically.
	F	On-board operations, such as preparation of feed, feeding, and changing of nets, are properly conducted to prevent contamination with harmful chemical substances, such as machine oil or paint.
	G	Feed is properly stored to prevent contamination with harmful chemical substances or other contaminants.

Criterion 3.4

The landing of bivalves shall be performed in hygienic conditions and traceability shall be

assured at all the rearing stages of the mollusks.

3.4.1	The growing areas of bivalves shall be monitored and managed to prevent microbiological contamination, hazardous chemicals, and shellfish poison.	
Indicator	A	The nursery areas are monitored for shellfish poison. When shellfish poisoning occurs, the closing and opening of the ocean area is notified and shipping is controlled accordingly. It must be confirmed that products cultured outside the areas designated for aquaculture of products to be eaten raw are not shipped as products to be eaten raw.
3.4.2	Bivalves shall be purified if necessary and the purification equipment shall be properly maintained.	
Indicator	A	The methods and frequency of maintenance of the purification facility are established and implemented.
3.4.3	At the time of shipment, detailed information about the products such as the growing area, landing site, species, quantity, transportation method, the name of the farmer, etc. shall be confirmed and recorded. Identification marks shall be explained to the shipping destination to enable product identification.	
Indicator	A	A method is established for providing the necessary information on the products to the consignee.
3.4.4	Equipment, machinery, and packing materials for shipment shall be maintained in hygienic conditions.	
Indicator	A	The same as above.
3.4.5	The shipping process shall be decided and carried out in hygienic conditions to prevent deterioration of the products.	
Indicator	A	The same as above.

Criterion 3.5

The landing of aquaculture products shall be performed in hygienic conditions and traceability shall be assured at all the rearing stages of the products.

3.5.1	Cultured fish shall be managed per cage, and daily aquaculture activities shall be recorded.	
Indicators	A	When seeds are introduced, the date of landing and the total weight (or number of individuals) are confirmed and recorded for each rearing unit.
	B	When seeds with different origins are reared in one rearing unit, the conditions of mixed rearing are clearly recorded.

	C	When seeds are separated into another rearing unit with growth, the transfer history for the aquatic animals, as well as the total weight (or number of individuals) after separated rearing, are confirmed and recorded for each rearing unit.
3.5.2		Detailed information about the cultured fish such as landing date, the number of fish landed, weight, shipping destination, etc. shall be recorded. Identification marks shall be explained to the shipping destination to enable product identification.
Indicators	A	A product identification method is established for identifying one rearing unit as one lot.
	B	Procedures are established for submitting information on the production history at the request of buyers.
3.5.3		Equipment, machinery, and packing materials for the shipment shall be maintained in hygienic conditions.
Indicators	A	Screening tables, tying equipment, fish tanks, containers, and equipment, etc. used for shipping are cleansed and kept in hygienic condition.
	B	Water used in the fish holds and containers is sanitary, and the ice used for storage is made from potable water.
	C	Measures to prevent contamination are taken for the fish holds and containers (e.g., using containers with a cover).
	D	Equipment, machinery, and packing materials used for shipping are properly stored to prevent contamination with vermin.
3.5.4		Procedures for shipping shall be established and implemented.
Indicator	A	Procedures are established for carrying out shipment work hygienically.

**Principle 4 Consideration for environmental conservation
(To carry out aquaculture activities properly for the environment)**

For aquaculture to be widely accepted and for its sustainable production, the influences of aquaculture operations on the surrounding environment and wild organisms must be considered, and efforts must be made to minimize such influences. Implementation of such measures is verified, and the following criteria are established to improve the situation as needed.

Criterion 4.1

Aquaculture activities shall be carried out in accordance with suitable operating procedures established to minimize environmental impact caused by aquaculture equipment and materials, excretions of aquatic animals, and feed residues.

4.1.1	Aquaculture farmers shall monitor the environmental conditions of the farming site by using proper indicators. Appropriate procedures shall be established for dealing with deteriorating conditions.	
Indicators	A	Lists are kept of lubricating oil, paint, and detergent used for the maintenance of cages, boats, feeding equipment, etc.
	B	Lubricating oil, paint, and detergent used for equipment in seawater are used properly to avoid adverse effects on the environment.
	C	The lubricating oil, paint, and detergent are properly stored to prevent deliberate or accidental inflow into the environment.
	D	Antifoulant for nets and substances in the paint used for boats do not contain any organic tin compound.
	E	When antifoulant for nets or paint for boats is used, each use is recorded and managed.
	F	Unneeded equipment (broken fishing nets, containers of chemical, etc.) is disposed of by appropriate methods and not left in the aquaculture farm.
4.1.2	Water used for aquaculture shall be utilized in compliance with relevant laws and regulations. Salinization of fresh water and wastewater treatment shall be controlled to maintain water quality at the aquaculture sites and surrounding environment.	
Indicators	A	For mariculture, the rules regarding fishing rights, farm improvement plans, etc. are complied with and aquaculture operations are conducted within the permitted area.
	B	Observance of the farm improvement plan is monitored.
	C	Environmental indicators are maintained within the standards.

	D	In-land aquaculture facilities obtain the rights of water usage from local government and use the amount of water within the permitted range.
	E	The quality of the wastewater satisfies the wastewater standards at in-land aquaculture facilities.
	F	In case seawater fish aquaculture is conducted at the in-land aquaculture facilities and wastewater is drained into fresh water, the concentration of chloride ion at the drain port of waste water shall be less than 200 mg/l.
4.1.3		The density of fish shall be controlled adequately, and organic matter shall be monitored to prevent increased sedimentation of organic matter and occurrence of de-oxygenated water.
Indicators	A	The amount of production is properly controlled to meet the environmental capacity.
	B	The environment of the aquaculture farm is regularly monitored to confirm that the farm is in a healthy state.
	C	Procedures for treating residual feed are properly established and implemented.
4.1.4		Waste disposal from aquaculture operated in closed water shall be managed properly to prevent negative impact on the benthic environment.
Indicator	A	All waste that may affect the benthic environment is properly disposed of on land.

Criterion 4.2

Feed shall be used properly to optimize the health of aquaculture animals as well as to minimize impact on natural resources.

4.2.1		Feed, feed additives, and feed ingredients shall be used in accordance with the Act on Safety Assurance and Quality Improvement of Feeds (Act No. 35 of 1953) and other relevant laws and regulations. Feed used for each aquaculture unit shall be recorded and traceable.
Indicator	A	This indicator can be conformed as standards 2.1.4 and 3.3.1 are conformed.
4.2.2		The species and origin of fish used to produce fish meal and fish oil shall be traceable. The fish oil and fish meal shall not originate from endangered species ¹ or from Illegal, unregulated and unreported (IUU) fisheries.
Indicators	A	Under the limited conditions where a moist pellet is used, for the feed ingredients of moist pellet, the fish species, fishing area, provider, quantity of

¹ Endangered species are specified in the Act on Conservation of Endangered Species of Wild Fauna and Flora.

		purchase, etc. are recorded and records of purchase are kept.
	B	Information on manufactured feed and feed additives, such as the manufacturer, provider, name of the product, serial number, quantity, date of purchase, composition, etc. is recorded and records of purchase are kept.
	C	Warranty documents are obtained for manufactured feeds and feed additives showing conformity with the Act on Safety Assurance and Quality Improvement of Feeds, the origin of manufactured feed materials (fish meal, oil, etc., must be traceable to identify the species of the raw material fish and fishing area), or records are made of oral representations by suppliers and are kept.
	D	The written policy for responsible procurement of feed ingredients is obtained from the feed manufacture.
	E	Only feeds that do not originate from illegal, unregulated and unreported (IUU) sources are used. Necessary information can be obtained from the catch certificate in accordance with EU's IUU regulation, or the origins of the feed used are verified and traceable.
	F	The fish used as a material for fish meal and fish oil are not endangered.
4.2.3		In principle, the unprocessed fish² such as whole fish caught, mollusks, crustaceans, etc., shall not be used as a direct feed source. The protein sources of feed shall not be the same species and genus as the species being farmed.
Indicators	A	Unprocessed fish shall not be used as a direct feed source.
	B	Moist pellets are not used for regular feeding during the rearing period. In exceptional cases, the moist pellets are prepared and fed in accordance with a method that meets all the specified conditions.
	C	Use as feed of the same species or same genus as the cultured fish is prohibited.
4.2.4		The amount of fish meal and fish oil in feed shall be reduced appropriately during the rearing stage of cultured fish.
Indicators	A	Manufactured feed containing low amounts of fish meal is used during the rearing stage of cultured fish.
	B	Efforts are made to reduce the amount of alternative oils in fish oil, such as residues from fishery processing and vegetable oil and fat.

Criterion 4.3

Seed shall be used properly to minimize any impact on natural resources.

² Unprocessed fish means the fish with no processing such as heat, dry, etc. after caught.

4.3.1	Hatchery-raised seed shall be used preferentially at the aquaculture site where the seed is available.	
Indicators	A	Hatchery-raised seed are used preferentially at the aquaculture site when the seed is available.
	B	Seeds to be introduced are examined as needed, and the seeds are separated in a proper manner until the results are available.
	C	When seeds are imported from a foreign country or from a region where a specific disease has been observed in the past, a non-disease certificate and test results are obtained.
4.3.2	The use of wild seeds shall be justifiable when the seeds were collected legally without negative impact on natural resources and the environment.	
Indicators	A	Information about the rearing history at the seed production facilities is confirmed and recorded before the introduction of seed into the aquaculture farm.
	B	Where wild seeds are used, proper resource assessment is conducted on the species of seeds.
	C	The fisher, provider, fishing ground, fishing method, dates of catch and purchase, average weight and total weight (or number of individuals), and other necessary information are confirmed and recorded.
	D	The seeds are caught properly and legally by a certified fisher in accordance with the relevant laws and regulations.
	E	The impact of bycatch on natural resources is considered.
4.3.3	Use of genetically modified organisms shall be prohibited without proper implementation of environmental assessment.	
Indicator	A	The same as above.

Criterion 4.4

Aquaculture shall be operated properly to minimize any impacts on the aquaculture sites and surrounding environment.

4.4.1	Aquaculture shall be operated in compliance with the relevant laws and regulations on habitat and biodiversity, and the result of environmental assessment. In case sensitive habitat is identified, recovery of resources shall be carried out.	
Indicators	A	The area of the aquaculture operation is not, or is not adjacent to, a habitat of endangered species.

	B	If the area of the aquaculture operation or its surrounding area is or is adjacent to a habitat of endangered species, proper measures are taken to prevent impact on the habitat.
	C	The number of aquaculture animals escaping from the aquaculture sites is recorded during the transfer of animals or in a natural disaster (e.g., typhoon).
	D	Proper measures are taken to prevent the escape of aquaculture animals.
4.4.2		In case a hazardous organism belongs to an endangered species, the species shall be eliminated through non-lethal measures, except when there is concern about the safety of workers or when priority is given to euthanasia of a moribund organism.
Indicators	A	Animals harmful to aquaculture production are identified. When an animal is identified, the status of the animal (e.g., endangered species) is determined.
	B	When harmful animals are designated as an endangered species, the animals are removed by proper methods.

End.

Appendix 1: Guidelines for MEL Aquaculture Certification Units

The following guidelines are specified the detail of three certification units described in this document.

1. Guidelines

1) Same Administrative Division

Since the aquaculture farms subject to the assessment are managed in accordance with the same administrative regulations, ordinances, etc., the unit of certification shall be within the range of the prefecture even if it is the widest. When an aquaculture farm to be assessed is located in a bay spanning multiple prefectures, the unit of certification is determined in consideration of the regulations (aquaculture density, water quality evaluation, etc.) of each prefecture.

2) Similar Rearing Environment

In determining the scope of certification, in principle, it shall be analogous that the natural environment in which the aquaculture farm to be assessed is located and the rearing environment where the fish cages are installed effected by tidal currents or etc. in the sea area.

3) Same Management Rule

An applicant for certification that organizes a management entity that owns a farm or a group of aquaculture producers shall conduct aquaculture operation under the same management, procedures, and recording methods defined comprehensively for the farms under assessment.

4) Internal Audit System

In the assessment of multi-site certification and group certification described in the below, especially where the number of affiliated producers is large, it is necessary to confirm that the applicant subject to certification have a system to conduct internal audits and that internal audits are conducted on a regular basis in accordance with the system. Its method of operation and performance will influence rational decisions to taper the audit sample size. An internal audit is a self-audit similar to an annual audit or surveillance assessment, and the certification body and the scheme owner confirm the contents of the audit as appropriate.

2. Unit of Certification

1) Multi-Site Certification

A single management entity that owns multiple aquaculture farms is certified for all aquaculture farms.

It is conducted under the (1) the same administrative division, (2) similar rearing environment, (3) same management regulations, and in some circumstances (4) internal audit functions.

2) Partial Certification

A single management entity that owns more than one farm is certified for particular farms.

As an additional condition for partial certification, the applicant is required to report the number of fishes farmed such as the number of juveniles introduced and etc. and the number of fishes shipped. This is to clearly distinguish aquatic animals raised in the certified farms from these in uncertified farms among multiple fish farms. The number of farmed fishes is usually less than the number of shipped fishes from the relationship of survival rate. In addition to the initial assessment, the auditor also ensure the number of farmed fishes and the number of shipments (the number of logo mark used in the case of obtaining CoC certification) during the annual audit, ad hoc audit and renewal audit, as well.

3) Group Certification

A case where an aquaculture area (or aquaculture pond) used jointly by fisheries cooperatives to which multiple small-scale producers belong is certified for aquaculture standard conducted under the same management rules. Or, in the case of obtaining certification for aquaculture under the guidance of the trading companies or under the same management rule. This assumes that fishery cooperatives, fishery production cooperatives and local trading companies are represented to be certified.

When certified and uncertified aquaculture farms coexist in a single fishing ground, there is a possibility that problems in the rearing environment (water quality, etc.) may come up to surface, and it is necessary to obtain a prior agreement from both sides. In some situations, it is required to have an internal audit system described in the 1. Guideline 4) Internal Audit System above.

In the future, it is expected that a vertically integrated business model will emerge in which most of the aquaculture value chain function from production (feed, seedlings, and aquaculture), processing, distribution, and sales are operated in-house. The MEL Council will be required to conduct assessments that are integrated with the distribution and processing stage certification (CoC), and will respond appropriately to such case.

Appendix 2: Water Quality Standard

Aquatic Water Standard Prepared by Japan Fisheries Resource Conservation Association (2018)

Parameter	Criteria Value		
	River	Lake	Ocean
BOD	<ul style="list-style-type: none"> • Natural Breeding: $\leq 3\text{mg/L}$ (Salmon, Trout, Sweetfish: $\leq 2\text{mg/L}$) • Bottom Condition: $\leq 5\text{mg/L}$ (Salmon, Trout, Sweetfish: $\leq 3\text{mg/L}$) 	N/A	N/A
COD	N/A	CODmn (Acid Method) <ul style="list-style-type: none"> • Natural Breeding: $\leq 4\text{mg/L}$ (Salmon, Trout, Sweetfish: $\leq 2\text{mg/L}$) • Rearing: $\leq 5\text{mg/L}$ (Salmon, Trout, Sweetfish: $\leq 3\text{mg/L}$) 	COD-OH (Alkaline Method) The Criteria value of desirable COD-OH (alkaline method) in general sea area, Nori seaweed cultured farm and coastal area of closed inner bay is temporarily suspended.
Nitrogen	N/A	<ul style="list-style-type: none"> • Carp, Crucian Carp: $\leq 1.0\text{mg/L}$ • Smelt: $\leq 0.6\text{mg/L}$ • Salmonidae, Sweetfish $\leq 0.2\text{mg/L}$ 	<ul style="list-style-type: none"> • Fisheries Category 1: $\leq 0.3\text{mg/L}$ • Fisheries Category 2: $0.3 - 0.6\text{mg/L}$ • Fisheries Category 3: $0.6 - 1.0\text{mg/L}$ • Nori Seaweed: $0.07 - 0.1\text{mg/L}$ (Inorganic Nitrogen) • Wakame Seaweed: 0.028mg/L
Phosphorus	N/A	<ul style="list-style-type: none"> • Carp, Crucian carp: $\leq 0.1\text{mg/L}$ • Smelt: $\leq 0.05\text{mg/L}$ • Salmonidae, Sweetfish $\leq 0.01\text{mg/L}$ 	<ul style="list-style-type: none"> • Fisheries category 1: $\leq 0.03\text{mg/L}$ • Fisheries category 2: $0.03 - 0.05\text{mg/L}$ • Fisheries category 3: $0.05 - 0.09\text{mg/L}$ • Seaweed aquaculture: $0.007 - 0.014 \text{ mg/L}$ (Inorganic phosphorus)
Dissolved Oxygen (DO)	<ul style="list-style-type: none"> • General: $\geq 6\text{mg/L}$ (Salmon, Trout, Sweetfish: $\geq 7\text{mg/L}$) 	<ul style="list-style-type: none"> • General: $\geq 6\text{mg/L}$ (Salmon, Trout, Sweetfish: $\geq 7\text{mg/L}$) 	<ul style="list-style-type: none"> • General: $\geq 6\text{mg/L}$ • Closed coastal water in summer: $\geq 4.3\text{mg/L}$

pH	6.7 – 7.5	6.7 – 7.5	7.8 – 8.4
	Rapid change of pH which adversely affects living organisms is not observed.		
Suspended Solid (SS)	<ul style="list-style-type: none"> · $\leq 25\text{mg/L}$ (SS added by human: $\leq 5\text{mg/L}$) · Avoidance behavior is not observed. · Negative impact on the plant growth is not observed. 	<ul style="list-style-type: none"> · Salmon, Trout, Sweetfish: $\geq 7\text{mg/L}$ (Visibility $\geq 4.5\text{m}$) · Warm Water Fish: $\leq 3.0\text{mg/L}$ (Visibility $\geq 1.0\text{m}$) 	<ul style="list-style-type: none"> · SS added by human: $\leq 2\text{mg/L}$ · Enough light for the growth of seaweed at a water depth is observed.
Water Color	Enough light for the photosynthesis is observed. Avoidance behavior is not observed.		
Water Temperature	Rapid change of water temperature which adversely affects living organisms is not observed.		
E. coli	<ul style="list-style-type: none"> · $\leq 1,000\text{MPN}/100\text{mL}$ · Oysters for eating raw: $\leq 70\text{MPN}/100\text{mL}$ 		
Oil	<ul style="list-style-type: none"> · Oil is not detected in the water. · Oil film is not observed at the water surface. 		
Hazards Substance	Each criteria value of hazards substance is determined separately.		
Bottom Sediment	<ul style="list-style-type: none"> · Mud and spherotilus are not observed at the bottom. 	<ul style="list-style-type: none"> · COD-OH $\leq 5\text{mg/L}$ (Dried Mud) · Sulfide $\leq 0.2\text{mg/L}$, · Normal Hexane Extracts $\leq 0.1\%$ 	
	<ul style="list-style-type: none"> · Negative impact of suspended solids on the development and growth of seeds is not observed. · The value of hazards substance detected by dissolution test based on Act on Prevention of Marine Pollution and Maritime Disaster must be below ten times the criteria value. · The concentration of cadmium and PCB must be below the criteria value. · Dioxin $\leq 150\text{pgTEQ/g}$ 		