

# Certified Quality Aquaculture

## Farm Standard

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**January 2022**

Certified Quality Aquaculture - Farm Standard Public Controlled Version					
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## INTRODUCTION

The Certified Quality Aquaculture (CQA) Standards (Farm and Processing) continue to be developed by an expert technical group (Technical Advisory Committee), with oversight from a governance committee (Oversight Committee). These structures involves representatives from all parts of the supply chain and interest groups from feed to fork.

Details of the CQA Program can be found on the BIM Website and link:<https://bim.ie/aquaculture/sustainability-and-certification/certified-quality-aquaculture-cqa-programme/>.

This CQA Farm Standard Issue (2) is valid from January 2022 The CQA Programme continues to maintain international recognition and accreditation via certifications to ISO/IEC 17065:2012. For existing 'certified entities', transition to this new standard will become effective on January 2023, allowing a maximum of 12 months to adopt it. New entities shall be assessed and certified against this new standard starting from January 2022.

This new CQA Farm Standard Issue 2 arose following a significant review of sections of the Standard specific to key areas of interest, notably; sustainable aquaculture practice, conservation of biodiversity and environmental performance of aquaculture.

Additionally, this new version was necessary due to the introduction of Regulation (EU) 2018/848 on organic production and labelling of organic products and repealing Council Regulation EC 834/2007 (referred to as the Organic Regulation(s) which came into force from the 1<sup>st</sup> January 2022). The previous sub-scope for Organic Aquaculture Certification Part 1A of Issue 1.1 is now superseded by a new separate implementing Standard for the Organic Regulation(s) called the Organic Food and Farming Standards in Ireland Edition 2. The Organic Sub-scope (Part 1A previously in Issue 1.1) has been removed from this new CQA Standard Issue 2. This document includes a link to a [BIM Organic Aquaculture Advisory Document](#) which provides guidance to applicants on the Organic Food and Farming Standards in Ireland Edition 2 and the Organic Regulation(s).

A survey of certified entities was also carried out in March 2021 to establish the areas of interest from the various aquaculture sectors and help inform the Standard review process. Areas that continue to remain of significant importance to the Certification Programme are; seafood safety, seafood quality, traceability to origin and the sustainability of Irish aquaculture. The Sub-scope for Additional Eco Requirements already provides a comprehensive set of criteria for applicants that wish to demonstrate 'Eco' credentials. Components of this Subscope have been transferred and incorporated within the main Certification Requirements. These are criteria that demonstrate good environmental status and are considered of increasing importance to the Programme. The technical review has lead to the addition of a new Section on Sustainable Management and Nature Conservation and modifications of other sections including; efficient resource utilisation, minimisation of waste and the mitigation of impact from alien invasive species.

This CQA Farm Standard will continue to maintain approval to the international benchmark, Global Seafood Sustainability Initiative (GSSI) to demonstrate the CQA Programme is in line and externally assessed against International Best Practice.

Due to the outcome of the review resulting in some significant changes and additions to the Standard, the CQA Committee has determined that a new Issue of the CQA Farm Standard is warranted.

This CQA Farm Standard underwent a 60-day public comment period as part of good standards setting practice, the outcome of which was included in the technical review process.

This Standard continues to represents best industry practice and will be subject to regular review to confirm its accuracy and relevance..

The Certified Quality Aquaculture (CQA) Farm Standard remains separated into different modules, each one covering different areas of activity on a farmed fish or shellfish production site.

The CQA Programme and scope of CQA certification is open to all applicants located within the Island of Ireland regardless of size and scale. The scope of the CQA standard extends to culture of mussels and finfish species, including Atlantic Salmon and freshwater salmonids; rope and bottom grown mussels), located within the territorial limits of the Island of Ireland (i.e. the RoI & N.I).

Mollusc (i.e.) mussel hatcheries are excluded from the scope of the standard. The culture of GMOs is not allowed.

**These modules are grouped as follows:**

**Scope:**

**Certified Quality Aquaculture Farm Standard**

Certified Quality Aquaculture, Certification Requirements. This Core section of the standard covers the production process from inputs through to outputs and covers the assessment of the applicant's food safety system and operational practices, traceability system, facility hygiene, product quality, sustainable management and nature conservation and environmental performance.

This core section covers the practices that are required to be in place for maintaining good environmental status and also the specific product criteria describing superior quality Irish aquaculture products (including Atlantic Salmon, Freshwater Salmonids) and Mussels.

**Additional CQA Sub-scope:**

**Eco Production**

Certified Quality Aquaculture; Additional Eco Requirements. This section of the standard aims to assist the applicant in the implementation of an environmental management systems approach to demonstrate and prove their commitment to environmental sustainable development during the production process. The Sub-scope covers the additional eco requirements that are to be in place together with the general requirements in the CQA Standard in order to achieve eco certification. This Sub-scope remains consistent with the previous Issue 1 Revision 1 version Part 1B.

**Certified Standard Scopes**

Certified Quality Aquaculture Farm Standard

The applicant must be able to demonstrate compliance to this Standard.

Certified Quality Aquaculture Farm Standard: Sub-scope; Eco Requirements

Where Applicants apply for this option, they must be able to demonstrate compliance to this sub-scope of the Standard.

The applicant must be able to demonstrate compliance to the relevant section of the standard to become a 'Certified Member' of the Programme through assessment by an independent Certification Body accredited to ISO/IEC 17065.

**Audit Frequency**

Audits are carried out by approved third party Certification Bodies accredited to the international Standard ISO/IEC 17065. The frequency of audit to maintain approval will be annual.

Further information regarding application, rules and regulations of the programme can be obtained from the BIM website [www.bim.ie](http://www.bim.ie) or via:

BIM Ireland's Seafood Development Agency  
Crofton Road  
Dun Laoghaire,  
Co. Dublin A96 E5A0  
Ireland.

Links to relevant national legislation can be found at <http://www.fao.org/fishery/nalo/search/en> and also at [http://www.fsai.ie/legislation/food\\_legislation.html](http://www.fsai.ie/legislation/food_legislation.html). Links to UK legislation can be found at <http://www.food.gov.uk/enforcement/regulation/>. Inter alia, this standard has been developed to assist with compliance to relevant food safety legislation, the applicant must be aware that food safety legislation differs worldwide.

## Certified Quality Aquaculture; Certification Requirements

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### 1.0 Food Safety and Quality

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#### 1.1 Food Safety and Quality Policy

- 1.1.1 The applicant shall have a documented food safety and quality policy which is authorised, reviewed, signed and dated by an appropriate senior manager and communicated to all staff with responsibilities relating to product safety, legality and quality.
- 1.1.2 The policy shall state the applicant's intention to meet its obligation to produce safe and legal products to its customer's specified quality parameters, including the absence of GMO cultures and its responsibility to its customers.

### 2.0 General Management Practices

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#### 2.1 Responsibilities and Management Authority

- 2.1.1 The applicant's aquaculture sites shall carry the appropriate authorisations. (Refer to footnote 2).
- 2.1.2 The applicant shall ensure that operations are within relevant licensed areas.
- 2.1.3 The applicant shall determine the most appropriate equipment, mooring systems and structures to be used and their suitability for the specific location and purpose intended and with due consideration to prevailing weather conditions.
- 2.1.4 The applicant shall have a documented quality management and effective record keeping system
- 2.1.5 The applicant shall have documented general duties or work instructions in place, along with clearly defined employee responsibilities, and these shall be communicated to all staff involved with, activities or with responsibility for, processes critical to food safety, legality and the requirement of this standard, including appropriate documented arrangements for cover during key staff absence.
- 2.1.6 Senior Management shall establish and demonstrate adequate staffing resources are available for each area of operation.
- 2.1.7 The applicant shall record, review and respond helpfully to requests for information received from the public and to reasonable complaints that are specific to the applicant's operation and provide details in writing of the alleged failing.

#### 2.2 Internal Auditing and Record Keeping

- 2.2.1 The applicant shall conduct regular internal audits carried out by competent personnel, at least once per annum, against the requirements of this standard.
- 2.2.2 The applicant shall operate procedures for collation, review, maintenance, storage and retrieval of all records pertaining to this standard and these shall be retained for a minimum period of 3 years.
- 2.2.3 The applicant shall be in possession of and make available on request all relevant licenses and permissions as specified by relevant authorities.

## **2.3 Corrective Action**

- 2.3.1 Corrective actions against Non Conformances (NC) shall be implemented in a timely manner to prevent further occurrence of non-conformity and be accurately documented, assigning responsibility and accountability.
- 2.3.2 Any corrective action plan relating to safety, legality or quality shall only be agreed by personnel, who have defined responsibility and accountability for these areas of control. These personnel shall also be responsible to verify that the corrective action plan has been completed satisfactorily.

## **2.4 Product Traceability & Chain of Custody**

- 2.4.1 All aquaculture operations shall be easily identifiable and appropriate records maintained for each unit with regard to stock, movements, maintenance, repair and testing records.(new clause)
- 2.4.2 The applicant shall have a system, compliant with traceability legislation<sup>1</sup> to identify and trace all production batches and follow this through all stages of production and the distribution of the finished product to the customer in a timely manner.
- 2.4.3 The applicant shall conduct a documented traceability test (at least annually) to ensure that traceability can be determined from input to outputs and immediate customer and vice versa. The test shall also include quantity check/mass balance. Results shall be available for inspection.
- 2.4.4 Each batch of certified stock shall be identified as 'certified' and retained separate from non-certified stock at all times, including separate harvesting and packing.
- 2.4.5 The applicant shall ensure that all uses of BIM CQA logo and/or Certified Claim relating to these standards are in accordance with requirements in the BIM CQA Logo Use Agreement.
- 2.4.6 The applicant shall submit to BIM all information on the use of BIM CQA logo on Bulk Packaging and Marketing Materials (such as advertisements, outer packaging, web pages, collateral materials, POS materials, and video footage).

## **2.5 Customer Complaints**

- 2.5.1 The applicant shall implement a documented procedure for the effective capture, recording and management of complaints.
- 2.5.2 All complaints shall be recorded, investigated and the results of the investigation recorded.
- 2.5.3 Actions appropriate to the seriousness and frequency of the problems identified shall be carried out promptly and effectively by appropriately trained staff.

## **2.6 Product Recall**

- 2.6.1 The applicant shall develop a documented product recall procedure which shall be implemented by management indicating responsibility over product recall.
- 2.6.2 The applicant shall document and close out any product recalls.

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<sup>1</sup> Regulation (EC) No 178/2002 of the European Parliament and of the Council of 28 January 2002 laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety.

- 2.6.3 The applicant shall test the product recall plan at least annually to include:
- The scope of the recall;
  - Notification and initiation of the product recall;
  - Those persons involved (internal/external);
  - Deviations, corrective and preventative actions;
  - Review the product recall and amend the product recall plan if necessary.
- 2.6.4 The applicant shall provide written guidance to relevant staff regarding the type of event that would constitute an “incident”.
- 2.6.5 The applicant shall **inform the Certification Body and the relevant authorities within 24hrs** of any recall at consumer level.

## 2.7 Purchasing

- 2.7.1 The applicant shall have a documented supplier approval procedure in place specific to all suppliers of goods and services.
- 2.7.2 The applicant shall have an effective supplier approval and monitoring system to ensure that purchased incoming livestock intended to be identified as Certified to the Certified Quality Aquaculture Farm Standard are sourced from a Certified Quality Aquaculture certified supplier that holds valid certification, or in the case of sourcing ova/juveniles an appropriate 3<sup>rd</sup> party quality certification, e.g. GlobalGAP.
- 2.7.3 A record of all certified raw material receipt received shall be maintained, showing the name of the supplier, their unique certificate number, evidence of certificate validity, and sufficient other details to allow the tracing of the certified raw material back to the supplier.

## 2.8 Health and Safety

- 2.8.1 The applicant shall comply with health and safety legislation with respect to a written health and safety statement. (*Guidance note to auditors to be communicated and included in training*).
- 2.8.2 Where required by Health Authorities, Applicants shall follow the most current Government Guidelines concerning the risks of communicable disease (e.g. global pandemics).

## 3. Sustainable Management and Nature Conservation

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### 3.1 Environmental Policy

- 3.1.1 An environmental policy shall be established, documented, implemented and maintained appropriate to reflect the unique nature, scale and environmental aspects of the operation including:
- Respect for the local environment, supporting sustainable development and environmentally sound business practices.
  - Compliance with applicable legal requirements (concerning the natural environment).
  - Commitment to farming practices that support biodiversity, protection of listed species and habitats and conservation of the natural environment.
  - Commitment to the prevention of pollution.
  - Commitment to the Application of the best available technology and procedures in order to optimize both the farm husbandry and the interactions of the farm with the environment.
- 3.1.2 The Policy shall be made available both internally (staff) and externally (suppliers, customers, contractors and the public).
- 3.1.3 The appraisal of environmental performance of all new activities, products and processes in advance of their adoption.

### 3.2 The Protection of Nature

#### 3.2.1 Nature Conservation Designations

- 3.2.1.1 The applicant shall be aware of the conservation objectives and maintain documentation of any nature conservation designations in and around their licensed area.
- 3.2.1.2 The applicant shall ensure that the impact of their operations is minimized to ensure the long-term conservation and biodiversity of sensitive species and habitats (e.g. S.A.C.s).
- 3.2.1.3 The applicant shall meet as a minimum the requirements of license protocols, specific requirements where they exist in relation to the operation of their facility in or adjacent to protected areas and any nationally adopted codes of practice to ensure no sensitive habitats are damaged during the course of aquaculture operations.<sup>2</sup>
- 3.2.1.4 Farm installations shall be maintained within the designated areas and appropriately marked in accordance with the Commissioner of Irish Lights and the Marine Survey Office for safe navigation, such as under the BIM Special Unified Marking Scheme (SUM's).
- 3.2.1.5 The applicant shall ensure that land based and foreshore operations and surrounding areas are maintained in a neat and orderly manner.

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<sup>2</sup> Context and Evidence. Prior to license approval, all aquaculture licence applications are subjected to screening processes on the basis of general environmental impact and specifically for nature conservation. This will inform whether an Environmental Impact Assessment is required. In relation to nature conservation all applications/operations within or adjacent to Natura 2000 sites (SACs and SPAs) undergo full Appropriate Assessment in accordance with the EU Habitats Directive (transposed into Irish law in 1997) , to ensure no that protected habitats or species are impacted by operations and that the integrity of the site's conservation objectives is maintained (see specifically Article 2 (2), Article 3 (1), Article 6 (2), Article 17 (1)). In practice, for some operations, this assessment process has resulted in the realignment of aquaculture site areas, and/or a reduction in their size, and/or a requirement for ongoing monitoring to better inform potential impacts.

- 3.2.1.6 Management of existing aquaculture operations according to planning consent conditions and best practice principles as outlined in license conditions.
- 3.2.1.7 All structures shall comply with any agreed engineering requirements regarding anchorage, stability, strength and buoyancy (specified by the licensing authority) and be properly installed and maintained by competent personnel.
- 3.2.1.8 The applicant shall maintain contact details for local NPWS (National Parks and Wildlife) ranger and any other relevant local experts.

### **3.2.2 Environmental Performance**

- 3.2.2.1 Applicants shall use dark subdued or neutral colours where possible with a matt surface on aquaculture installations and ensure design and colour continuity between aquaculture operations in the same area.
- 3.2.2.2 For long-line mussel culture, operators are required to have 100% grey floats apart from those used to mark site as necessary for navigation.
- 3.2.2.3 For long-line mussel culture, lines must be deployed with uniform separation and as parallel to each other as practical.
- 3.2.2.4 For new developments, applicants shall assess potential visual impact according to the national and international guidelines.
- 3.2.2.5 Ongoing and thorough maintenance of all machinery, vessels and other marine equipment including adequate lubrication of all rotating parts and where practicable, the fitting of sound suppression devices e.g. mufflers/silencers, barriers and baffles shall be carried out.
- 3.2.2.6 Vessel and farm vehicle speeds close to the shore shall be reduced.
- 3.2.2.7 All noise shall be kept to an absolute minimum when working at night.

### **3.2.3 Environmental Monitoring and Site Conditions**

- 3.2.3.1 Site conditions shall meet the developmental, physiological, health and behavioural needs and welfare of stock.
- 3.2.3.2 The site location shall ensure that the species specific needs are met and that they have sufficient space for their wellbeing, be retained in water of good quality with sufficient oxygen levels, and be retained in temperature and light conditions in accordance with the requirements of the species and having regard to the geographic location.
- 3.2.3.3 A programme for the monitoring of environmental parameters associated with the farming and welfare of stocks shall be implemented and maintained.
- 3.2.3.4 The Applicant shall monitor environmental parameters that have bearing on stock wellbeing and take measures to reduce stressful conditions in stocks when environmental parameters are outside of favorable ranges.

Parameters can include:

- Water column temperatures
- Water column Dissolved Oxygen (DO)
- Water column salinity
- Chlorophyll and phytoplankton concentrations
- Presence of pathogens present in the water column and sediments.

- Presence of organisms that can negatively impact welfare (e.g. jellyfish infestations)
- 3.2.3.5 For finfish cage sites an annual impact assessment on the benthic area beneath and adjacent to pens during the period of peak biomass shall be carried out.
- 3.2.3.6 This assessment shall satisfy the conditions set out in the regulators monitoring protocol for offshore finfish operations or equivalent national protocol.
- 3.2.3.7 Where the results and the independent conclusions of benthic surveys indicate that there has been an unsustainable increase in benthic impact the applicant shall implement measures to reduce nutrient impact to sustainable levels. -
- 3.2.3.8 The applicant shall ensure that freshwater aquaculture operations adhere to the relevant authority abstraction and discharge consents<sup>3</sup>.

Freshwater sites shall routinely monitor the following parameters in both incoming and outlet water.

- Nitrates, Nitrite and Total Nitrogen (N);
  - Orthophosphates and Total Phosphates (P).
  - Biological/Chemical Oxygen Demand (BOD)
  - Suspended Solids
- 3.2.3.9 The applicant shall ensure that for freshwater aquaculture operations the deviation of effluent water from influent is assessed and reviewed to ascertain the impact on the local water course, particularly during periods of peak biomass.

### 3.2.4 Invasive Alien Species

*Invasive Alien Species (IAS) can cause significant damage to the environmental health and economy of a region and their impact is controlled by EU legislation<sup>4, 5</sup>.*

- 3.2.4.1 The applicant must demonstrate awareness of the legislation and the risks of IAS, in particular any established and potential risk from IAS species that have been linked to aquaculture activities.
- 3.2.4.2 A Risk Assessment of business level aquaculture activities must be conducted in alignment with the most recent agreed guidance from the cross departmental and agency working group on Alien Species and Aquaculture which identifies the IAS of concern, potential vectors and transmission routes.
- 3.2.4.3 The applicant must establish an IAS Biosecurity Plan which identifies the activities, safeguards and mitigation measures that are in place to prevent the introduction, spread and impact of IAS.
- 3.2.4.4 Key-staff shall be aware of the risks associated with IAS and their role in the management of biosecurity and the the observation, monitoring and reporting of IAS.

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<sup>3</sup> Environmental Quality Standards established within the European Communities Environmental Objectives (Surface Water) Regulations 2009 (S.I. 272 of 2009) Local Government (Water Pollution) Acts 1977. Northern Ireland National Equivalents to S.I 272 of 2009 - The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017. (S.R. 2017 No. 81). The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015 (S.R. No. 351).

<sup>4</sup> REGULATION (EU) No 1143/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species.

<sup>5</sup> COUNCIL REGULATION (EC) No 708/2007 of 11 June 2007 concerning use of alien and locally absent species in aquaculture.

### 3.3 Prevention of Water Quality Degradation

#### 3.3.1 Water Framework Directive

- 3.3.1.1 Applicants shall be aware of the ecological status of water bodies as defined by the Environmental Protection Agency under the remit of the EU Water Framework Directive (WFD)<sup>6</sup> for the water quality within their catchment areas.
- 3.3.1.2 Applicants shall engage in Local Authority Water Protection (e.g. LAWPRO) public meetings and dialogue, where these are convened and support initiatives that maintain good ecological status of water quality. *(This can be done by direct and indirect means such as via CLAMS Regional Officer Activity).*
- 3.3.1.3 Applicants shall facilitate and participate in statutory water quality monitoring programmes that support understanding of pollution pressures and support water quality improvement.
- 3.3.1.4 The aquaculture facility shall establish, implement, and maintains an appropriate system that addresses the impact of salinization of freshwater resources and the surrounding environment.

#### 3.3.2 Effluent Management

- 3.3.2.1 Effluents shall be stored and disposed of in a manner that reduces the risk of spread of disease to humans and other animals and contamination to environment.
- 3.3.2.2 Effluent discharge shall meet with the specific requirements of the effluent discharge licence issued for the site. As appropriate, the applicant shall control the effluent composition and operate treatment systems to ensure that discharge is always within permitted limits and does not affect the integrity of the receiving waters<sup>7</sup>.
- 3.3.2.3 In the event of a breach of discharge license limits, the applicant shall employ mitigation measures in conjunction with the competent local authority in a time bound manner to ensure ongoing compliance with the licence requirements<sup>7</sup>.
- 3.3.2.4 A written contingency plan shall be available to all staff detailing the action to be taken in the event of a pollution incident.
- 3.3.2.5 An assessment of the likely sources and risk of water contamination shall be undertaken.
- 3.3.2.6 The applicant shall provide appropriate bunded storage of at least 110% of volume for fuels and chemicals, appropriately sited and with provision for draining and clean up of spillages in a manner not to cause environmental impact.

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<sup>6</sup> Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy

<sup>7</sup> Context. Parameters and limits set within effluent discharge licences are determined by combination of the potential composition of the effluent and the quality of the receiving waters. Environmental Quality Standards established within the European Communities Environmental Objectives (Surface Water) Regulations 2009 (S.I. 272 of 2009) must be met (see Table 9: Nutrient Conditions, Table 10: Specific Pollutants, Table 11: Priority Substances, and Table 12: Priority Hazardous Substances) listed in the schedule). Local Government (Water Pollution) Acts 1977 (see Section 12: Local authority's power to require measures to be taken to prevent water pollution, Section 13: Local authority's power to prevent and abate pollution in certain circumstances, Section 15 Water quality management plans) and 1990 (see Section 7: Powers of courts, local authorities and regional boards in relation to the mitigation and remedying of effects of pollution, Section 10: Power of local authority to prevent and abate pollution) apply here. It is a statutory offence to "cause or permit any pollutant to enter waters." Any person who intends to discharge domestic waste water or trade effluent to surface waters must attain permission to do so from either the Local Authority or the Environmental Protection Agency (EPA) before the discharge is commenced. An aquaculture operator must have in place an effluent discharge licence as a condition of their aquaculture licence. Therefore if there is a breach of conditions leading to the licence being revoked, the aquaculture licence would also be in breach of conditions. As such, certification would also be withdrawn or not awarded in the first place. In the event of a breach of discharge license limits, the applicant shall employ mitigation measures in conjunction with the competent local authority in a time bound goal to ensure ongoing compliance with the license requirements.

## ***Incident Contingency***

3.3.2.7 There shall be mitigation of and contingency plans for spills from internal or external sources.

### ***This shall include:***

3.3.2.8 An emergency spill response plan which shall detail proper procedures, responsibilities, emergency contact details for rapid deployment of staff and the availability of appropriate equipment to ensure rapid containment and clean-up of spillages.

3.3.2.9 In the event of an oil spillage that cannot be contained by on site equipment such as spill kits, the applicant shall immediately inform the coast guard and other relevant authorities.

- Emergency spill response plans shall address how to deal with larger scale contamination incidents, (including access to deflective and containment booms, chemical dispersion, beach cleanup operations) in order to limit potential impact on and conserve the local environment.

3.3.2.10 Consideration shall be given to the health and welfare of stock including movement and harvest of stock.

3.3.2.11 Stock shall not be sold as certified product until it is established through appropriate testing and batch sample retention that it is free from taints, off-odours and residues as a consequence of chemical/oil spillage.

3.3.3.12 Notification shall be given as soon as practicable to relevant authorities and **the Certification Body** of any incidence that threatens pollution of the environment and contamination of product.

## **3.4 Aquaculture and Coastal Communities**

### **3.4.1 Community Involvement**

3.4.1.1 Applicants shall take part in Coordinated Local Area Management Systems (CLAMS) or similar initiatives where these are established<sup>8</sup>.

3.4.1.2 The applicant shall engage with other aquaculture operators and the local community, as appropriate to avoid or resolve conflicts or gather input and provide information on the commitment and value of sustainable aquaculture to the region. These may include annual (or more frequent) meetings, correspondence and/or other activities. (This can be undertaken directly or via CLAMS).

3.4.1.3 The applicant shall organize and/or take part in initiatives that support local community involvement as applicable to the size and scale of their operation; including open days or similar information events, local sponsorship opportunities and periodic shore clean-up operations. Involvement via local CLAMS Group initiatives can be used to meet this requirement.

### **3.4.2 Shared Piers and Areas**

3.4.2.1 At areas shared with other fish farmers and the public, such as piers, slipways and foreshore areas, the applicant shall maintain these in a clean and tidy order, manage stored equipment without obstruction to other users, promptly remove and repair damaged equipment, avoid the accumulation of disused and de-commissioned equipment and avoid obstructing access to other users.

3.4.2.2 The applicant shall produce site plans for all facilities including common facilities such as piers, foreshore and slipways. These shall clearly mark, site boundaries, access points and where necessary, any hazards, obstacles to navigation and safe navigational routes for servicing sites.

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<sup>8</sup> CLAMS Group Initiatives are Coordinated Local Aquaculture Management Systems developed by BIM

## 4.0 Facility Standards

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### 4.1 General Requirements

- 4.1.1 Procedures shall be in place to control the risk of product contamination and to comply with all relevant legislation.
- 4.1.2 Premises shall be adequately constructed and maintained for their intended purpose and to allow sufficient storage, cleaning and to minimise risk of ingress by predators and pests.
- 4.1.3 All structures coming into contact with fish shall be of a material and construction that allow easy cleaning, i.e. food grade stainless steel and plastics, which are free from cracks or inaccessible areas.
- 4.1.4 The aquaculture facility has, where appropriate (e.g. where ground water is extracted or (fresh) water is in limited supply), suitable systems and management measures for efficient water use<sup>9</sup>.

### 4.2 Premises Exterior and Surround

- 4.2.1 All sites shall be maintained in a clean and tidy condition, and excess vegetation around buildings shall be retained short (excluding areas defined for habitat or species protection) to minimize the establishment of suitable environments for wild mammals, birds and insects.
- 4.2.2 The external areas around buildings and farm entrances shall be retained free from rubbish, excess vegetation, and other debris with a designated segregated area for storage of decommissioned / non-essential equipment.

### 4.3 Staff Facilities

- 4.3.1 Staff facilities shall be designed and operated to minimise the risk of product contamination.
- 4.3.2 Toilet facilities shall be provided and maintained hygienic and include hand-washing facilities. These hand-washing facilities shall be provided for staff and visitors to wash their hands after using the toilet. These hand-washing facilities shall provide a sufficient quantity of water at a suitable temperature and liquid/foam bacterial soap; single-use towels or suitably designed and located air driers.
- 4.3.3 There shall be a stocked first aid kit on site which includes eyewash.

### 4.4 Equipment

- 4.4.1 Equipment in contact with product shall be constructed of smooth, impervious, non-toxic, corrosion-resistant materials and constructed to allow easy and thorough cleaning.

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<sup>9</sup> Operators are within their discharge license requirements and abstraction licenses where they exist.

- 4.4.2 Infrastructure (tanks, feeding equipment, graders, lines, bags, etc.) used for the servicing of aquaculture operations shall be sufficient to ensure that optimum conditions for fish growth and welfare are maintained. Equipment requiring extensive repair shall be removed from the production area and sanitised prior to re-installation.
- 4.4.3 The design construction and maintenance of any farming gear shall account for extreme weather conditions likely to be encountered at the site and due consideration given to its ability to withstand such conditions without losing stock.
- 4.4.3.1 The applicant shall collect and dispose of derelict or damaged gear/equipment in a responsible way, promptly remove and repair damaged equipment and avoid the accumulation of disused and de-commissioned equipment.
- 4.4.4 The applicant shall have alarms, warning devices and back-up generators commensurate with the level of operation. Records of checks carried out shall be maintained.
- 4.4.5 Aquaculture operations which are critically dependent on aeration or an oxygen system shall have oxygen alarms and back up facilities shall be available.
- 4.4.6 Where applicable, inlet and outlet screens shall be constructed and maintained to prevent farm escapes.

#### **4.5 Maintenance**

- 4.5.1 A documented system of planned facility maintenance shall be in place, and records maintained covering all items of equipment and plant which are critical to product safety, legality and quality.
- 4.5.2 Facilities shall be maintained, emptied of stock and cleaned periodically appropriate to their design and construction.
- 4.5.3 All electrical installations at mains voltage shall be protected, earthed, tested annually, and inaccessible to animals.
- 4.5.4 Farming systems shall be designed and maintained to promote fish health and welfare.

## 5.0 Facility Operating Standards

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### 5.1 Pest Control

- 5.1.1 An effective and continuous programme for the control of pests, which has an emphasis upon pest proofing, shall be maintained which meets the current legislation governing the use of pest control products.
- 5.1.2 The applicant shall either contract the services of a competent pest control organisation or shall have trained personnel for the regular inspection and treatment of premises to deter and eradicate infestation.
- 5.1.3 Detailed records of the pest control inspections, recommendations and necessary action undertaken shall be kept.
- 5.1.4 The location of all pest control measures shall be identified on a plan/diagram of the site.
- 5.1.5 Bait stations or other rodent control devices shall be appropriately located and tamper proof.

### 5.2 Predator Control

- 5.2.1 A system for the prevention and control of predator attack shall be implemented including anti-predator devices, which shall be installed and maintained in working order.
- 5.2.2 Only non-harmful predator deterrents shall be employed, used appropriately and deployed according to manufacturer instructions; (save that other measures may be adopted in accordance with the provisions of 5.2.3 provided they are specifically licensed for use at the site in question) unless the predator presents a direct threat to worker safety.
- 5.2.3 Records of mortality and damage caused by predators shall be maintained and persistent predators cannot be destroyed without proof of legality. Consistent predators that are listed by CITES (Appendix 1), IUCN Red List (Categories Critically Endangered (CR), Endangered (EN), Vulnerable (VU)) shall not be controlled using any lethal predator control technique and shall be managed in accordance with all applicable regulation.

### 5.3 Chemical Control

- 5.3.1 A chemical control procedure shall be in place which manages the use, storage and handling of chemicals and medicines and supports the minimal use necessary. This shall include as a minimum:
  - An approved list of chemicals and medicines;
  - Stock rotation;
  - Documented up to date product inventory;
  - Availability of Material Safety Data Sheets (MSDS) and specifications;
  - Storage of chemicals/medicines in their original packaging and in accordance with the manufacturer's instructions and legislation
  - The labelling and/or identification of containers of chemicals/medicines at all times;
  - A designated storage area with restricted access to authorised personnel;
  - Use by trained and authorised personnel only, in a manner compliant with national and local laws with regard to the application of chemicals and veterinary drugs.
- 5.3.2 All chemicals and medicines used by the aquaculture facility shall be managed according to the manufacturer's guidance (such as on-label requirements or Safety Data Sheets (SDS)) to minimise risk of entering and impacting the natural environment.

- 5.3.3 Use of authorised veterinary medicines and chemicals shall be in accordance with the approval of an aquatic animal health professional.
- 5.3.4 Dangerous substances shall be used in accordance with S.I. No. 466 of 2008; European Communities (Control of Dangerous Substances in Aquaculture) Regulations 2008 (see specifically Article 3, 4, 6 and 15). In addition chemical controls shall also ensure compliance with environmental quality standards specified by the Surface Water Regulations (S.I. No 272/2009) and the specific pollutants, and substances for water bodies (see Table 9: *Nutrient Conditions*, Table 10: *Specific Pollutants*, Table 11: *Priority Substances*, and Table 12: *Priority Hazardous Substances*) listed in the schedule)<sup>10</sup>.
- 5.3.5 The applicant shall commit to choose, where appropriate, disinfectant, cleaning and other chemicals with an improved environmental profile.
- 5.3.6 Biodegradable hydraulic fluid shall be used where feasible.

## 5.4 Hygiene and Biosecurity Management

- 5.4.1 The applicant shall draw up a documented Hygiene and Biosecurity Management programme appropriate to the nature and design of the aquaculture system, the stock under cultivation, consideration of the farming area, premises, equipment and facilities.

This shall include as a minimum:

- The site shall have cleaning and washing facilities with disinfectant available and a suitable and sufficient supply of water.
  - Disinfection of protective clothing and equipment, including instructions for use and mixing of disinfectants;
  - Specific and more detailed disinfection protocols for all equipment from a different country of origin or site.
  - Responsibility shall be designated to a named individual to ensure cleaning operations are carried out according to the specified programme.
- 5.4.2 Records shall be maintained indicating that cleaning tasks have been undertaken and inspected; these should be signed by the nominated employee with management responsibility.
- 5.4.3 Cleaning equipment shall be:
- Fit for purpose;
  - Suitably identified for intended use, e.g. colour coded or labelled;
  - Cleaned and stored in a hygienic manner to prevent contamination.
- 5.4.4 A sufficient and suitable supply of water shall be provided for handwashing.
- 5.4.5 The applicant shall operate a biosecurity programme to protect farmed stocks from harmful disease spreading pathogens. The programme shall be reviewed regularly as new pathogens, entry routes and vectors of transmission are identified.
- 5.4.5.1 The aquaculture facility shall establish, implement and maintain appropriate procedures and/or systems to reduce the likelihood of disease and parasite transmission within and between the aquaculture facility and natural aquatic fauna.

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<sup>10</sup> Dangerous substances are defined by Directive 2006/11/EC of the European Parliament and the Council' after Northern Ireland National Equivalents to S.I. No. 466 of 2008 Northern Ireland National Equivalents to S.I. No. 466 of 2008 - The Chemicals (Hazard Information and Packaging for Supply) Regulations (Northern Ireland) 2009. (S.R. 2009 No. 238). Northern Ireland equivalent to SI No. 272 of 2009: The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2017). (S.R. 2017 No. 81). The Water Framework Directive (Classification, Priority Substances and Shellfish Waters) Regulations (Northern Ireland) 2015 (S.R No 351).

- 5.4.6 There shall be delineation between designated biosecure and non-biosecure areas, in accordance with the applicants biosecurity procedures.
- 5.4.7 All aquaculture operations shall be clearly marked with a notice stating that only authorised persons and vehicles have access to the site.
- 5.4.8 Control and recording of all visitors shall be implemented including details of any contact with fish stocks within the previous 72 hours and if necessary, appropriate hygiene procedures shall be carried out before access is granted to the site.
- 5.4.9 Foot dips shall be provided at personnel access points to the site and disinfectant shall be regularly refreshed. All personnel and visitors shall dip footwear before entering biosecure areas such as fish farm sites and biosecure buildings such as hatcheries.
- 5.4.10 Hand-washing facilities shall be available and provide a sufficient quantity of water at a suitable temperature; liquid/foam bacterial soap; single-use towels or suitably designed and located air driers. These facilities shall be located at all entrances into biosecure areas excepting emergency fire doors, which shall not be used except in an emergency.
- 5.4.11 Protective clothing worn in biosecure areas shall be dedicated for use in that area.
- 5.4.12 Where possible, equipment used in biosecure areas shall be dedicated for use in that area.
- 5.4.13 There shall be procedures implemented for disinfection of equipment prior to movement from non-biosecure areas to biosecure areas and between sites. This shall, as a minimum, include detailed instructions on the cleaning and disinfection of this equipment.
- 5.4.14 The applicant shall establish an emergency plan to deal with unexpected large volumes of mortalities.
- 5.4.15 Discharge of toxic, noxious and dangerous substances is prohibited.

## **5.5 Waste Prevention, Reduction, Recycling and Waste Management**

### **5.5.1 Resource Efficiency**

- 5.5.1.1 There shall be a statement of environmental commitment detailing the applicant's objectives in waste prevention, reduction, re-use and re-cycling .
- 5.5.1.2 The applicant shall purchase materials with a long lifespan and/or made from recycled and/or recyclable materials, (or materials that naturally degrade and are not persistent in the environment) e.g. recycled paper/plastics, biodegradable materials, rechargeable batteries, long life light bulbs, refillable print cartridges.

### **5.5.2 Prevention of Marine Litter and Debris**

- 5.5.2.1 There shall be a high level of vigilance in the prevention of accidental (or otherwise) loss of farm equipment, materials, packaging (e.g. off cuts of ropes, twines, ties, feed bags, liquid containers, tubs, food packaging) to marine and freshwater bodies and to farm surrounds.
- 5.5.2.2 Protocols shall be established and implemented to ensure the safe collection and proper removal and disposal of waste and used materials from farm sites. Protocols shall include provisions for the prevention of leakage of twines and ropes used in site maintenance.
- 5.5.2.3 The applicant shall ensure that a weather protected waste container is secured on all vessels and vehicles, for domestic waste.

- 5.5.2.4 Materials that cannot be readily recycled shall be avoided, this includes plastic mussel mesh.
- 5.5.2.5 The applicant shall utilise recycling programmes, where feasible for decommissioned floats, buoys, plastics, glass, aluminum, metal and paper.
- 5.5.2.6 Where legally feasible and practical, the applicant shall compost organic matter such as reject product, paper and cardboard.
- 5.5.2.7 All mussel long-line floats must be recyclable.
- 5.5.2.8 There shall be adequate systems for the collection, collation, storage and disposal of waste material.
- 5.5.2.9 The applicant shall ensure separation and segregation of waste into appropriate re-cycling and non re-cycling categories for all organic and non-organic waste to eliminate cross contamination and avoid offensive odour and pest hazards.
- 5.5.2.10 Where sites are decommissioned or temporary put out of use (e.g. for fallowing), all equipment that could be at risk to loss shall be removed to safe locations or secured in a manner that prevents risk to break up and loss.
- 5.5.2.11 Equipment stored on site, at floating pontoons, on piers and in public areas shall be secured such that there is no risk to loss to the natural environment.
- 5.5.2.12 The applicant shall keep an inventory of proper disposal of decommissioned and scrapped equipment.
- 5.5.2.13 Systems shall be in place to avoid the accumulation of waste, and shall prevent the use of unfit materials.
- 5.5.2.14 Waste shall be categorised according to legislative requirements based on the intended means of disposal, segregated and collected in appropriate designated waste containers.
- 5.5.2.15 Waste shall meet legislative requirements. Where licensing is in operation for disposal of categorised waste, it shall be removed by licensed contractors and records of disposal shall be maintained and available for audit.
- 5.5.2.16 External waste collection containers and rooms housing waste facilities shall be managed to minimise risk.
- These shall be:
- Clearly identified;
  - Designed for ease of use and effective cleaning;
  - Well maintained to allow cleaning and where required, disinfection;
  - Emptied at appropriate frequencies;
  - Covered or doors kept closed as appropriate.
- 5.5.2.17 Transfer of substandard materials for destruction or disposal shall be a specialist in secure product or waste disposal and shall provide records to prove that the product has been removed from the food chain.
- 5.5.2.18 The burning of waste is prohibited.
- 5.5.2.19 Containers and pipes containing water shall be regularly checked for leaks.

### **5.5.3 Handling of Morts**

- 5.5.3.1 Fish mortality disposal, including transport, shall be treated in accordance with relevant legislation (EU ABP regulations).<sup>11</sup>
- 5.5.3.2 Disposal of mortalities shall be carried out in a manner to prevent risk of disease to healthy stocks, contamination of groundwater, smell and ingress of pests.
- 5.5.3.3 Mortalities awaiting disposal shall be retained in covered locked containers which are not accessible to domestic pets, wild animals or birds.

### **5.4 Transport**

- 5.4.1 Where outside contractors are used for the transport of live stock the applicant shall implement its own service contract for transportation.
- 5.4.2 The applicant shall ensure that the conditions of transportation maintain the welfare, health and quality of stocks.

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<sup>11</sup> 1069/2009/EC implemented by 142/2011/EC and the national SI 187 of 2014 – The EC (Animal By-products) Regulations 2014)

## **6.0 Process and Personnel Management**

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### **6.1 Process Calibration**

- 6.1.1 The applicant shall have a documented calibration plan for all measuring equipment, used to monitor product safety and legality. Calibration of measuring equipment shall be traceable to a recognised national standard or to the manufacturer's specifications
- 6.1.2 Records of calibration shall be maintained.
- 6.1.3 Measuring equipment shall be clearly coded for identification purposes.
- 6.1.4 Thermocouple thermometers with metal probes shall be used to record temperatures;, spirit and mercury in glass thermometers are not permitted.

### **6.2 Personnel Training**

- 6.2.1 The applicant shall establish an induction-training course for new employees based on work practices and procedures relevant to their role.
- 6.2.2 The applicant shall ensure that all employees receive training on work practices and procedures relevant to their role.
- 6.2.3 The applicant shall have documented training procedures and all training shall be recorded and trainees shall sign a training log on completion.
- 6.2.4 A training matrix showing all personnel and job roles shall be in place. The document shall specify the level of training for all personnel and their competence to carry out specific tasks.
- 6.2.5 An annual review of training requirements shall be carried out to ensure that all staff are competent in their respective roles and that training is effective.

## 7.0 Finfish Requirements

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### 7.1 Sourcing of Stocks

- 7.1.1 Where broodfish are retained for the purposes of ova production, a broodstock selection programme shall be in place. The supplier shall maintain a product specification, listing the quality criteria and rearing history of the stock. This shall be supplied to the applicant on request.
- 7.1.2 Once broodfish have been identified, they shall be removed from the harvesting stock to avoid undue damage caused by handling and harvesting procedures.
- 7.1.3 Ova shall be disinfected before introduction onto the finfish operation.
- 7.1.4 Veterinary certification and fish transfer notification shall be obtained from the relevant authority for movements of fish and eyed ova/gametes into and within Ireland. Appropriate verification of measures (e.g. disinfection record of eyed ova, disease tested and testing methods) shall be part of the aquatic health management plan for movement fish. Where appropriate, sourcing of stock for intake of eyed ova/gametes shall include relevant health certificates and disease screening records.
- 7.1.5 Records of health certification and fish transfers notifications shall be maintained and made available on request.
- 7.1.6 The applicant shall ensure that suppliers of ova have a planned and appropriate broodstock programme that produces good quality gametes. Accordingly, finfish farms shall stock hatchery raised seed (i.e. gametes or eyed ova).
- 7.1.7 The applicant shall maintain records of all egg and fry purchases and sales according to relevant legislation and directives.
- 7.1.8 Applicant shall ensure that fish are sourced from specific pathogen free (SPF) aquaculture operations.
- 7.1.9 Details of source finfish operations shall include the vaccination history and treatment record of the fish supplied prior to transfer.
- 7.1.10 The applicant shall ensure that fish are of adequate physical condition.

### 7.2 Smolt Quality Criteria

- 7.2.1 The applicant shall ensure that juveniles are of adequate physical condition and will avoid juveniles with the following characteristics:
- Shortened opercula;
  - Excessive fin damage;
  - Fish with damaged eyes;
  - Signs of clinical symptoms or damage, e.g. lesions, swelling, reddening, bruising, scale loss, fungal infection (e.g. Saprolegnia) and ragged fins;
  - Spinal or jaw deformities;
  - Presence of eye flukes or enteric tape worms.

### 7.3 Feed

- 7.3.1 Feed shall be purchased from an approved fish feed manufacturer who can attest to the Manufacturers Declaration contained in Annex B.

- 7.3.1.1 Aquatic feed protein from the same species and genus as the target farmed-species on the feed product label shall not be fed to the species farmed.
- 7.3.1.2 The use of whole fish in fresh or frozen form as a direct feed source is prohibited.
- 7.3.1.3 Feed inclusion percentages of fishmeal and fishoil shall be recorded per business unit level on an annual basis post harvest.
- 7.3.2 All raw materials and feed additives used in the manufacture of finfish feed shall conform to the national feed regulations.
- 7.3.3 Feed shall be free from visible contamination.
- 7.3.4 All feed containing medicines, which have a withdrawal period, shall be segregated and identified.
- 7.3.5 Standard feeds and medicated feeds shall be stored in separate containers and silos and traceability to stock fed maintained. If they are to be fed from the same unit, these units shall be cleaned and completely empty from one batch to the next.
- 7.3.6 Fish feed stocks shall be managed in storage to ensure that they do not pass their expiry dates.
- 7.3.7 Feed that has deteriorated in quality, is contaminated, or has been retained for longer than the stipulated expiry date shall not be used.
- 7.3.8 Adequate storage facilities shall be provided for feed. These shall be designed to be cool, prevent ingress of water, proofed and protected from ingress of pests, allow feed product identity to be retained and protected from foreign matter contamination.
- 7.3.9 The applicant or feed supplier shall retain samples of feed from batches used. A sample of approximately 500g shall be taken from each batch of feed and placed in a clean container and labelled so that it is traceable to the batch and bag number sampled. The sample shall be stored at ambient temperature until it reaches its designated expiry date, when it can then be discarded.
- 7.3.10 In cases where the feed supplier retains feed samples on behalf of the applicant, the feed supplier shall provide written confirmation or declaration of this and be informed of any results of analysis that fall outside of legal limits and undertake and provide analyses of retained samples on the request of the applicant in the event of an enquiry from a customer or authoritative body, including the certification body.

## **7.4 Feeding**

- 7.4.1 Feeding practices shall ensure that feed is delivered in sufficient quantity to avoid overcrowding, aggressive behaviour, damage to stock and hierarchy development.
  - 7.4.1.1 A feeding strategy shall be devised in consultation with competent technical staff to ensure the correct type and quantity of feed is fed to meet the physical and nutritional requirements of stocks at all times.
  - 7.4.1.2 A feeding strategy that actively measures (via the use of, where relevant, feed trays, cameras, pellet sensors, documented records of visual feed response, and/or staff training) and sets as an objective, specific goals and targets for the reduction of the feed conversion ratio and efficient use of feed at the individual production unit level shall be maintained.
- 7.4.2 Dietary changes shall be introduced carefully (particularly in cases where animals have moved between management situations).

- 7.4.3 Regular observation of feeding behaviour shall be undertaken and recorded to assist assessment of feeding levels.
- 7.4.4 Accurate records of the quantity of feed delivered, growth rate, stock biomass (less mortality) and feed conversion ratio shall be maintained at the individual production unit level. These records shall include production unit-level traceability records (e.g. feed Batch/Lot/ID number, date of purchase).
- 7.4.5 Automatic feeders shall be maintained in good working order and cleaned regularly.

## **7.5 Feed Station Management**

- 7.5.1 Floating feed stations shall be moored, managed and maintained in accordance with supplier specifications.
- 7.5.2 Feeding systems shall be routinely calibrated to ensure accuracy of feed delivered per pen per period of feeding.
- 7.5.3 Stock management systems that calculate growth, weight gain, Feed Conversion Ratio (FCR), total biomass per pen and stocking density shall be routinely cross checked with alternative methods of estimating growth and biomass such as periodic batch weighing and correction factors applied and noted.

## **7.6 Feed Management and Nutrient Impact Reduction (Finfish)**

- 7.6.1 There shall be a feed management system in place for its economic and sustainable use.
- 7.6.2 Provisions to ensure that feed is ordered, stored and delivered to the aquaculture operation and fed in a manner that avoids accidental spillage, losses through pest and predator activity, deterioration in quality, disposal due to shelf life expiration or through accidental contamination.
- 7.6.3 Substantial quantities of feed spillage, subsequent loss and feed disposal shall be recorded and preventative actions taken to mitigate its reoccurrence.
- 7.6.4 A feeding strategy shall be devised in consultation with qualified technical staff to ensure the correct type and quantity of feed is fed to meet the physical and nutritional requirements of stocks at all times.
- 7.6.5 The feeding strategy shall set objectives, for the management and reduction of the feed conversion ratio which shall be measured.
- 7.6.6 Accurate records of the quantity of feed delivered, growth rate, stock biomass (less mortality) and feed conversion ratio shall be maintained.
- 7.6.7 Feed management (ordering, storing, delivery and recording) shall be subject to periodic internal auditing, at least on an annual basis.

## **7.7 Transfer of Stocks**

- 7.7.1 Documented procedures for the transportation and transfer of fish shall be implemented and records maintained.
- 7.7.2 The applicant shall ensure that fish are starved prior to transportation and handling.
- 7.7.3 Records of all movements shall be retained; including date, time of dispatch/arrival, destination, description of consignment and quantity.

- 7.7.4 The applicant shall ensure that notification is made to the Marine Institute at least 72 hours before movement is due to take place, for stocks moving within Ireland.
- 7.7.5 Transfer shall take place with the minimum of stress and stock handling and equipment and processes shall be designed to handle fish in water and minimise out of water time.
- 7.7.6 The applicant shall ensure that water flow is adequate for the quantity of fish held at any given time and provide adequate provisions to maintain the welfare of stocks in emergency conditions.
- 7.7.7 Oxygenation and/or aeration in transport water during transportation shall be provided and dissolved oxygen shall be continually monitored to ensure fish welfare.
- 7.7.8 Where closed systems are used for transportation there must be provisions to ensure the quality of water is maintained and monitored.
- 7.7.9 Stocking density shall be maintained at a level that precludes damage to fish during transportation and shall be commensurate with the intended length of journey.
- 7.7.10 Fish shall be stocked at a density that is appropriate to the farming system with consideration to fish size, water temperature and water flow.
- 7.7.11 The applicant shall have a signed contract with well boat companies detailing the undertakings, safety precautions and disinfection requirements that shall be in place.
- 7.7.12 Well boats shall be purpose designed or modified to avoid compromised fish welfare and poor husbandry practices.
- 7.7.13 Transport tanks shall be filled with minimum ullage space and the interior shall be smooth.
- 7.7.14 Pumps and hoses shall be designed to avoid physical damage and undue stress. Siphon pumps are preferable to suction pumps.
- 7.7.15 All transport tanks, vehicles, fish pumps, hand nets and hoses shall be cleaned and sanitised with disinfectants suitable for the destruction of fish pathogens between loads.
- 7.7.16 Staff shall be fully trained in the use of the disinfectants on site and the necessity in using those chemicals when going off site or moving between sites.
- 7.7.17 The applicant shall establish emergency procedures, detailing possible events, actions to be taken and persons responsible in order to safeguard the welfare of fish stocks.

## **7.8 Fish Health Management Plan**

- 7.8.1 There shall be the appointment of a veterinarian responsible for the provision of expert advice. A record of visits, stock health checks and actions shall be maintained and retained on site.
- 7.8.2 The fish health management plan for the site shall be reviewed, agreed and signed off by the responsible veterinary surgeon on an annual basis. The fish health management plan shall include details of an appropriate system, procedure or set of practices for early detection of diseases and other animal health issues<sup>12</sup>.
- 7.8.3 Additional routine stock health observation and monitoring shall be carried out by trained personnel.
- 7.8.4 There shall be identification of diseases and procedures put in place for their reduction.

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<sup>12</sup> Council Directive 2006/88/EC on animal health requirements for aquaculture animals and products thereof and on the prevention and control of certain diseases in aquaculture superseded by EU Animal Health Regulation 2016/429.

- 7.8.5 All therapeutic treatments, requiring a license shall be purchased, mixed for use (where applicable) and administered under veterinary and/or manufacturer's instructions according to relevant legislation by trained personnel.
- 7.8.5.1 The use of steroidal, hormone treatment (including methyl-testosterone) is prohibited.
- 7.8.5.2 The use of medicinal products, including vaccines and antimicrobials certified by relevant bodies for the prevention and treatment of diseases is only permitted under veterinary prescription.
- 7.8.6 Treatments that do not require a license shall be administered by trained personnel who shall follow manufacturer's instructions or veterinary guidance.
- 7.8.7 Detailed records of disease incidences shall be maintained.
- 7.8.8 A record of all treatments shall be retained and shall include:
- Name, quantity and date of purchase of medicine/chemical;
  - Prescription number and date of issue (for prescription only medicines);
  - Identification of treated fish (Pen/ pond or tank);
  - Dates of treatment (start/end) and quantity used;
  - Administration method, dosage rate, water temperature and name/signature of person administering the medicine;
  - Minimum withdrawal period (where relevant) advised by veterinarian or manufacturer. Instructions and earliest date for harvesting (where relevant);
  - Signature of authorised person with Management responsibility.
- 7.8.9 A vaccination programme (focusing on disease prevention) shall be established as part of the overall fish health management plan.
- 7.8.10 Vaccination (where applicable) shall be undertaken by competent, trained, operators with strict adherence to manufacturer's instructions at all times, with the minimum of stress to stocks.
- 7.8.11 Finfish shall be anaesthetised during handling operations such as vaccination.
- 7.8.12 Records of size of fish, date, water temperature, type and delivery method of vaccination in use shall be maintained.

## 7.9 Sea Lice Management

- 7.9.1 An Integrated Pest Management (IPM)<sup>13</sup> Plan for the control of sea lice infestations on salt water finfish farms shall be established and implemented. Accordingly, this mitigation measure shall be developed in conjunction with the farm veterinarian and shall contain:
- A fish stocking and sea lice management plan in consultation with other farms in the bay.
  - A monthly sea lice sampling and monitoring plan including classification by species and sea lice stage (juvenile, adult and ovigerous females).
  - Measures taken to minimise the use of medicinal/chemical treatment.
  - Types of treatment and their administration to ensure effective clearance of sea lice.
  - Product rotation to minimise the risk of resistance in sea lice populations to active ingredients.
  - The use of biological controls of ectoparasites (*Lepeophtheirus salmonis* and *Caligus elongatus*) on

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<sup>13</sup> The IPM is developed and the efficacy of the plan is monitored by the Marine Institute on behalf of DAFM (Sea lice Monitoring Protocol (2000) and Strategy (2008)). The monitoring programme includes treatment trigger levels of parasite numbers on the farm facility. Data obtained as a result of the monitoring controls is published on the Marine Institute website ([www.marine.ie](http://www.marine.ie)). Monthly monitoring programme of lice counts in Northern Ireland for the 'North Atlantic Conservation Organisation' NASCO Wild Salmon Conservation.

finfish by the use of cleaner fish is promoted.

## **7.10 Fish Welfare and Husbandry Practices**

- 7.10.1 Duty of care and high regard to fish welfare and husbandry practices shall be afforded to all stocks under the responsibility of the applicant.
- 7.10.2 Farms shall be managed to ensure that fish are free from discomfort, stress, pain or injury and exhibit normal swimming and feeding behaviour.
- 7.10.3 The applicant shall be aware of the rate of water flow and or water exchange on the aquaculture operation and ensure that it is adequate to supply sufficient oxygen for the stocking density and ensure, where required, sufficient supporting aeration/oxygenation by alternative means.
- 7.10.4 The applicant shall document and limit the maximum stocking density for each unit and maintain records of stocking density per rearing unit.
- 7.10.5 The applicant shall reduce out-of-water fish handling practices, employ passive handling and grading practices where possible and use approved anesthetic for out-of-water fish handling procedures, as appropriate.
- 7.10.6 Mortalities and moribund animals shall be routinely removed to maintain the health of stocks. Where necessary, removals shall be seasonally adjusted and increased during periods of disease loss. Records shall be maintained for each pen / tank / pond, showing the number of mortalities, frequency of removal and cause of mortality.
- 7.10.7 Contingency plans for disease reponse procedures, including quarantine, shall be drawn up in the event of suspected transmissible agents and/or unexplained or large mortality events to to minimise risk of disease transfer, environmental pollution and nuisance: and shall include notifying the relevant authorities.
- 7.10.8 There shall be demonstrated consideration of:
  - i) Measures for escape detection
  - ii) Monitoring for and record keeping of escapes events
  - iii) Suitable training of employees
  - iv) Incident management and infrastructure, including response or recapture measures.
  - v) Regular monitoring and maintenance of the culture system
  - vi) Regular review and failure analysis
  - vii) Containment infrastructure.

## **7.11 Grading**

- 7.11.1 Fish shall be graded to prevent excessive size disparity.
- 7.11.2 Grading shall be planned in advance and carried out by suitably trained staff to minimise stress and avoid damage to stocks.
- 7.11.3 Fish shall be starved for an appropriate period depending upon grading method.
- 7.11.4 Accurate records of grading operations, stock numbers, weights and stock movements shall be maintained for each rearing unit and batch to ensure that stocks can be traced back to source.

## 7.12 Capture and Handling of Fish

- 7.12.1 Fish shall be handled with care at all times.
- 7.12.2 Fish shall not be over crowded prior to capture to prevent undue stress or damage.
- 7.12.3 Nets or brailers shall not be overloaded with fish.
- 7.12.4 Pumping operations shall be carried out by trained staff with due consideration to the welfare of the fish. (Manufacturers operating instructions shall be followed).
- 7.12.5 Hoses shall be of sufficient diameter for handling the size of fish.

## 7.13 Pen Aquaculture

Where pen aquaculture methods are used, the following shall apply.

- 7.13.1 Environmental monitoring shall be undertaken to ascertain the necessity and the frequency of implementation of fallowing practices.
- 7.13.2 A minimum fallowing period of 4 weeks shall be implemented unless individual site licenses dictate otherwise.
- 7.13.3 Pens shall be placed where there is sufficient water exchange to provide a supply of clean, well-oxygenated water.
- 7.13.4 Pens shall be moored correctly and nets shall be deployed to minimise the reduction of pen volume in strong currents.
- 7.13.5 Infrastructure (boats, rafts, barges, feeding equipment, etc.) used for the servicing of aquaculture operations shall be sufficient to ensure that optimum conditions for fish growth and welfare are maintained.
- 7.13.6 Nets used for handling fish shall either be of the brailer type or of knotless nylon mesh of a size and type to minimise scale loss.
- 7.13.7 A preventative maintenance programme shall be developed to ensure that all equipment, including pen moorings, collars, nets, boats, automated gear (graders; net washers; hydraulic lifting gear etc.), is maintained in good working order, in order to minimise escapes.
- 7.13.8 Nets shall be maintained free from excessive fouling so as not to restrict the flow of water to stocks. Fouled nets shall be cleaned either in situ, or by removal to a net washing device (in accordance with the requirements of clause 5.3.2 and 5.3.4).
- 7.13.9 Only authorised anti-foulants shall be applied to nets in a manner that precludes contamination of the local environment during application (in accordance with the requirements of clause 5.3.2 and 5.3.4). A record of net inspection, cleaning, anti-foulant application and repairs shall be maintained.
- 7.13.10 All pens supplied shall be in accordance with the farms requirements and shall be constructed so they are capable of dealing with the weather and other environmental conditions likely to be experienced on site. This shall include records of net strength testing.
- 7.13.11 There shall be annual monitoring of the benthic area beneath and adjacent to pens and pens during the period of peak biomass according to the DAFM Monitoring Protocol Number 1 for Offshore Fish Farms or equivalent protocol<sup>14</sup>.

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<sup>14</sup> In Northern Ireland an annual benthic monitoring survey is undertaken by DAERA.

7.13.12 Methods to reduce nutrient impact and maintain natural benthic diversity shall be implemented.

#### **7.14 Single Bay Management Strategies**

- 7.14.1 The Applicant shall maintain documented evidence that demonstrates commitment to the principles of single bay management.
- 7.14.2 The applicant shall maintain only one-year class of fish per site.
- 7.14.3 The applicant shall liaise with other companies operating in the same area regarding activities such as sea lice treatments in order to co-ordinate the effective reduction of such parasites to a minimum in the entire bay.
- 7.14.4 The disposal of blood-water shall not pose a hazard to the environment.
- 7.14.5 All stocks (finfish and mussels) introduced into the water shall be certified as free from disease and parasites whether being introduced for aquaculture or fisheries management purposes as per the guidelines of the relevant authorities.
- 7.14.6 The applicant shall liaise with other relevant companies with the area on matters of production and harvest schedules to facilitate synchronous following within the bay.

#### **7.15 Recirculated Aquaculture Systems**

- 7.15.1 Infrastructure (tanks, ozone, UV, biological filters) used for re-circulated aquaculture systems shall be sufficient to ensure efficient water use and that optimum conditions for fish growth and welfare are maintained.
- 7.15.2 A site map of the operation shall be posted on the wall of the office area which clearly defines the growing system and all facets and fish welfare critical aspects of the re-circulated system.
- 7.15.3 A maintenance contract with an electrician shall be in place and records of maintenance on pumps or any other equipment shall be maintained.
- 7.15.4 The condition of biological filters shall be assessed on a regular basis and their effectiveness monitored.

#### **7.16 Pre-harvest Finfish Analysis**

- 7.16.1 A documented risk assessment programme shall be implemented for the assessment, inspection, sampling and recording of safety and quality related parameters of stock nearing harvest.

#### **Residues**

- 7.16.2 Fish shall be sampled for testing of residues according to the documented risk assessment programme.
- 7.16.3 The applicant shall ensure that, if necessary, adequate samples are taken in sufficient time to ensure reference analysis.
- 7.16.4 Where the applicant subcontracts analyses critical to safety and legality, the laboratory contracted shall be independently accredited by a competent authority.

- 7.16.5 In the event that pre-harvest samples are proven to contain a residue in excess of the EU approved level, it shall be established that the medicine in question was prescribed by veterinary surgeon, properly recorded, and the sample was taken during the prescribed withdrawal period. In these circumstances harvesting shall be postponed until subsequent sampling indicates that the residue level has been reduced to acceptable levels.
- 7.16.6 In the event that a post-harvest sample, confirmed by reference analyses, contains a residue of a permitted substance in excess of approved levels or a residue of a non- permitted substance, the Certification Body shall be informed immediately and the applicant's product recall procedure shall be activated.
- 7.16.7 Records relating to sampling, testing and results shall be maintained and readily available.

#### **Quality**

- 7.17.8 Monthly fish weight, general condition quality grade and maturity assessment shall be carried out at least 3 months prior to harvest.
- 7.17.9 The pre-slaughter starvation period shall be documented and based on site specific data.

#### **Sensory**

- 7.17.10 Batches of fish shall be organoleptically assessed prior to harvest to ensure the absence of odours or taints and assessment records shall be maintained.
- 7.17.11 Fish exhibiting off-odours or taints shall not be harvested.
- 7.17.12 Records of organoleptic assessments shall be retained.

#### **Pigments**

- 7.17.13 For pigmented stocks, flesh colour shall be monitored prior to harvest.

### **7.18 Harvest Practices**

#### **Hygiene**

- 7.18.1 The applicant shall operate a documented hygiene programme for the harvesting of stock to eliminate the risks of product contamination. This shall include:
- Cleaning and disinfection of protective clothing worn by operatives;
  - Cleaning and disinfection of harvest equipment (e.g. nets, brailers, harvest bins, bin liners ice bins, ice shovels, bleeding knives);
  - Cleaning of harvest boats, barges, shore harvest sites and trucks used for fish transport.
  - The use of the disinfectants on site and the necessity in using those chemicals when going off site or moving between sites.
  - There shall be records of cleaning, disinfection and inspection of harvest equipment available and these shall be completed by the harvest supervisor or management appointed representative.
- 7.18.2 The applicant shall have provisions in place to ensure a clean, tidy harvesting area that eliminates the hazard of product contamination.
- 7.18.3 Adequate quantities of good, potable quality ice shall be available which is stored in a manner to preclude its contamination.

## Equipment

- 7.18.4 Boats, rafts and lifting gear shall be designed to allow harvesting and transport of fish as quickly and efficiently as possible
- Brailers shall be equipped with a canvas inner lining and quick release function and shall allow transfer of water along with fish.
  - Fish pumps and set-ups shall be operated within specified head-height ranges and must not cause damage to fish, excessive handling stress or stress due to lengthy pipe runs with inadequate oxygenated water.
- 7.18.5 Hand nets used for handling fish shall be of knotless nylon mesh of a size and type, to reduce scale loss to a minimum.
- 7.18.6 Tables and chutes used for handling fish shall be constructed from easily cleaned materials and be free from sharp edges which might cause damage to fish.
- 7.18.7 Harvest bins shall be in good condition, leak proof and lined with polythene bags. The lids must fit tightly.

## Transport

- 7.18.8 Where tanker transport is used for harvested fish there shall be a cleaning and disinfection programme for the vehicle. Where the applicant uses third party transport contractors, there must be a managed contract defining responsibilities, standards and precautions.
- 7.18.9 Tankers shall be loaded to ensure adequate ice/slurry /fish mixtures are attained to a ratio of 1/3 ice to weight of fish.
- 7.18.10 Tanks for transport of harvested fish shall be:
- manufactured in smooth hygienic materials;
  - insulated;
  - sufficiently sealed to prevent spillage during transport.

## 7.19 Slaughter and Bleeding of Fish

- 7.19.1 The aim of slaughter is to “put fish to death” in a manner which is humane, causes minimal physical damage and maintains quality.
- 7.19.2 The slaughter or stunning method shall render the fish instantly insensible to pain either before or within a few seconds of their removal from water.
- 7.19.3 Slaughter Practice shall include one of the following:
- Concussion to the head causing immediate death or stunning followed by severing of the gill arches
  - Electrical stunning followed by severing of the gill arches
- 7.19.4 Slaughter systems that do not result in prolonged out of water situations are preferred.
- 7.19.5 Where fish are received live in reception hoppers prior to slaughter adequate oxygenated water must be provided.

## Concussion

- 7.19.6 Instruments used for concussing fish shall be purpose designed with a handgrip and made from heavy-duty plastic materials, which are easily cleaned and disinfected.

- 7.19.7 The instrument shall be smooth and rounded to prevent puncturing the skin.
- 7.19.8 Trained personnel shall carry out concussion by administering one or two sharp blows to the head avoiding damage to the edible portion of the fish.
- 7.19.9 Stunning shall be carried out so that fish lose consciousness instantaneously without suffering; there shall be no opportunity for recovery of fish before bleeding and death.
- 7.19.10 Ice slurry mixtures shall be managed to ensure quality is maintained.
- 7.19.11 Loading density shall not cause damage to product by crushing.

## 8.0 Mussel Requirements

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### 8.1 Mussel Seed Collection

#### Rope Mussels

- 8.1.1 The applicant shall collect seed through natural settlement of spat mussels on collectors. This process shall be carried out in licenced areas only.

#### Bottom Mussels

- 8.1.2 The applicant shall comply with the terms of their fishing licence when collecting seed<sup>15 16 17 18 19 20 21</sup>.
- 8.1.3 The applicant must ensure that mussel seed comes from ecological sustainable sources managed through appropriate fishery plans/regulations by local management organisations aiming at safeguarding the biological sustainability of the stock, avoiding destructive fishing practices such as dynamite or poison fishing, and avoiding significant impacts of the fishery on the wider ecosystem (e.g. bycatch, ETP species interactions, habitat, ecosystem structure) with the inclusion of remedial actions where these may be necessary<sup>22</sup>.
- 8.1.4 Sustainability of seed harvesting can also be verified through credible 3<sup>rd</sup> party certification to a recognized Standard for well managed fisheries. (e.g. MSC).
- 8.1.5 For all movements (rope and bottom seed, applicants shall be aware of any restrictions that prevent the movement of settled spat from certain areas due to the known presence of IAS or other biosecurity risks identified and follow the guidelines in place.

**Mussels shall have the following characteristics:**

### 8.2 General

- 8.2.1 Variance in shell colour is acceptable; colour can vary from brown, black-blue to black in colour.

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<sup>15</sup> Mussel seed harvest in Ireland, where relevant to active collection methods, is managed through appropriate licensing (see the Sea-Fisheries and Maritime Jurisdiction Act 2006 Chapter 2) by the local management organisation to ensure that controls are in place (see S.I. No. 347/2008).

<sup>16</sup> European Communities (Control on Mussel Fishing) Regulations 2008, Article 3 and related), and the collection of seed is not detrimental to the status of the wild target and non-target populations, nor the wider ecosystem (see the Sea-Fisheries and Maritime Jurisdiction Act 2006 (No 8 of 2006); Determination (No.20) of the Need for an Authorisation for Certain Fish Stocks; S.I. No. 311 of 2006.

<sup>17</sup> Mussel Seed (Fishing ) Regulations 2006; S.I. No. 345 of 2006.

<sup>18</sup> Molluscan Shellfish (Conservation of Stocks Regulations 2006; S.I. No. 261 of 2008.

<sup>19</sup> European Communities (Health of Aquaculture Animals and Products) Regulations 2008; S.I. No. 346 of 2009.

<sup>20</sup> European Communities (Natural Habitats and Birds) (Sea-fisheries) Regulations 2009).

<sup>21</sup> Northern Ireland National equivalent to National SI legislation: Seed Fishery Management and Controls NI; The Mussels (Prohibition of Fishing) Regulations (Northern Ireland) 2013 (S.R. 2013 No. 1); The Sea Fish Conservation Act 1967; Fisheries Act (Northern Ireland) 1966; and Council Regulation (EC) No. 2371/2002 on the conservation and sustainable exploitation of fisheries resources under the Common Fisheries Policy. S.I. No. 345 of 2006 - Molluscan Shellfish (Control of Deposit) Order (Northern Ireland) 1972 (S.R. 1972 No.9) and legislation such as the Conservation of Scallops (Regulations (Northern Ireland) 2008 (S.R. 2008 No 430) which is species specific. Marine Act (Northern Ireland) 2013. Fisheries Act (Northern Ireland) 1966. Sea Fish Conservation act 1967. Molluscan Shellfish (Conservation of Stocks) Regulations 2006. S.I. No. 261 of 2008 - The Aquatic Animal Health Regulations (Northern Ireland) 2009 (S.R. 2009 No. 129). European Communities (Health of aquaculture animals and products) Regulations 2008. S.I. No. 346 of 2009 - Conservation (Natural Habitats, etc.) Conservation (Natural Habitats, etc.) Regulations (Northern Ireland) 1995 (as amended) (S.R. 1995 No. 380). Marine Act (Northern Ireland) 2013. Fisheries Act (Northern Ireland) 1966. Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. Ireland & Northern Ireland mussel seed fisheries are certified to the MSC Sustainable Fishing Standard (<https://fisheries.msc.org/en/fisheries/>).

<sup>22</sup> Note exception. There are no mussel hatcheries in Ireland to supply mussel seed. The industry operates fulling within the confines of naturally available seed for natural spat settlement or sustainable collection from wild sources (e.g. through licensed and MSC certified fishing activities). Mussel seed harvest in Ireland, where relevant to active collection methods, is managed through appropriate licensing (see the Sea-Fisheries and Maritime Jurisdiction Act 2006 Chapter 2) by the local management organisation to ensure that controls are in place (see S.I. No. 347/2008).

- 8.2.2 Fouling present must not exceed market acceptability.
- 8.2.3 Less than 5% broken shell detected in each batch of mussels.

### **8.3 Meat**

- 8.3.1 Meat colour can vary from cream to deep orange.
- 8.3.2 Greater than 20% meat yield is acceptable.
- 8.3.3 Meat shall be plump in appearance.
- 8.3.4 There shall be no off odours, should smell sea-fresh.

### **8.4 Harvesting**

- 8.4.1 Live mussels must be harvested only from areas declared open under the Marine Biotoxin Monitoring Programme.
- 8.4.2 Each harvested batch of live Mussels shall be accompanied by a completed "Gatherers Registration Document".
- 8.4.3 Each incoming batch shall be traceable to test results for the screening of biotoxins in accordance with legislative limits as implemented by the national Marine Biotoxin Monitoring Programme, conducted by the Marine Institute National Reference Laboratory.

### **8.5 Depuration**

- 8.5.1 All depuration systems and their operation must comply with all relevant legislation, local requirements and must be approved by the relevant authority.
- 8.5.2 Purification tanks and water storage containers must meet the following requirements:
- Internal surfaces must be smooth, durable, impermeable and easy to clean;
  - Must be constructed so as to allow complete draining of water;
  - Any water intake must be situated in a position that avoids contamination of the water supply;
  - Purification tanks must be suitable for the volume and type of products to be purified.
- 8.5.3 Before purification commences, live mussels must be washed free of mud and accumulated debris using a suitable clean water supply.
- 8.5.4 Operation of the purification system must:
- Allow live mussels rapidly to resume and to maintain filter feeding activity;
  - Eliminate or reduce potential microbiological contamination to an acceptable level in line with legislative requirements;
  - Allow live mussels not to become re-contaminated and to be able to remain alive in a suitable condition after purification for wrapping, storage and transport before being placed on the market.
- 8.5.5 The quantity of live mussels to be purified must not exceed the capacity of the purification centre.

- 8.5.6 The live mussels must be continuously purified for a period sufficient to achieve compliance with the health standards of Chapter V -Freshness and viability and Biotoxins (Council Directive 2074/2005) and microbiological criteria (Commission Regulation (EC) No 2073/2005).
- 8.5.7 Containers used to hold live mussels in purification systems must be of a construction that allows clean seawater to flow through. The depth of layers of live mussels must not impede the opening of shells during purification.
- 8.5.8 Should a purification tank contain several batches of live mussels, they must be of the same species and the length of the treatment must be based on the time required by the batch needing the longest period of purification.
- 8.5.9 No crustaceans, fish or other marine species may be kept in a purification tank in which live mussels are undergoing purification.

#### **Ultra Violet Purification**

- 8.5.10 The applicant must adhere to the UV unit manufacturer's specified flow rates that can be used with the units.
- 8.5.11 The applicant must adhere to the UV lamps manufacturer's specified lifetimes for UV lamps to maintain 80% efficiency.
- 8.5.12 Purified live mussels must be maintained in immersed storage in clean seawater of at least water from 'A' classified areas or seawater that has been re-circulated through the UV purification system.

#### **Validation of Purification System**

- 8.5.13 All purification systems must be commissioned and approved by the appropriate Competent Authority<sup>23</sup>. Prior to achieving an Approval Number, the applicant must demonstrate the effectiveness of the purification system by conducting a validation study.
- 8.5.14 A validation study must address the following:
- Validation pre & post purification testing of live mussels for the presence of *E.coli* (MPN method).
  - Validation post purification of the process must demonstrate the absence of *Salmonella* in 25g.

A record of the validation study must be retained.

- 8.5.15 The applicant's Food Safety Management System must include a Microbiological Sampling Frequency Plan with analyses for the verification of the effectiveness of the purification system.

The Microbiological Sampling Frequency Plan must incorporate the following:

- Microbiological analysis on the water.
- Microbiological analysis on pre and post purified live mussels.

#### **Purification Records**

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<sup>23</sup> The recommended method of validation is by testing naturally contaminated live mussels pre purification and post purification via the ISO TS 16649-3 5 tube three dilution method expressed as MPN *E.coli*/100grams shellfish flesh, with a limit of 230MPN/100grams of flesh and intervalvular fluid).

8.5.16 The following ongoing records must be maintained for each purified batch:

- Dates and quantities of live mussels delivered to the purification centre and corresponding Shellfish Registration Document numbers.
- The times of filling and emptying of purification systems (Time In – Time Out or cumulative hours).
- Dispatch details of consignments after purification.
- Seawater temperature in purification tanks.
- Seawater salinity in purification tanks.
- Seawater oxygen in purification tanks.
- Tank cleaning records.
- UV usage. The hours of UV usage should be recorded and the specified likely lifetimes for UV lamps to maintaining 80% efficiency should not be exceeded.

#### **Purification Specific Parameters**

8.5.17 The depuration or purification process of live mussels will only begin after the shellfish resume their filtration activity.

8.5.18 The company must adhere to the following minimum specific parameters:

- Minimum depuration period: Mussels >36 hours;
- Salinity >20% <35%;
- Temperature >8°C <18°C;
- Dissolved oxygen levels Minimum 50% with a recommended level of 70%.

#### **Product Analysis and Microbiological Criteria**

8.5.19 The applicant shall demonstrate that they are in possession of, and in compliance with, the most up to date legislation with regard to microbiological criteria for food stuffs.

8.5.20 The applicant shall demonstrate that they undertake or subcontract inspections and analysis which are critical to confirm product safety, legality and quality.

8.5.21 Results of inspections and analysis shall be reviewed regularly to identify trends. These records shall be available for inspection.

8.5.22 Personnel conducting sampling and analyses, such as microbiological assessments, shall be qualified or trained to be competent in the procedures.

8.5.23 For both contract and internal laboratories the laboratory shall have a recognised laboratory accreditation (reference analyses methods critical to product safety and legality) or demonstrate that they take part and conform to a comparative testing programme with other accredited laboratories for that method.

#### **Labelling**

8.5.24 The applicant shall have a system in place to confirm that labelling of the product or other forms of customer information meets legislation for the designated country of use and in accordance with the appropriate product specification.

## 8.6 Hazard Analysis and Critical Control Point

8.6.1 The applicant shall establish and maintain an effective Hazard Analysis Critical Control Points (HACCP) system specific to their operation and appropriate to the nature and volume of the production. This system will demonstrate compliance with the programme standards and statutory legislation.

### HACCP Principles

8.6.2 The applicant shall use the HACCP principles as described by the Codex Alimentarius Commission ([www.codexalimentarius.net](http://www.codexalimentarius.net)) to:

- Conduct a hazard analysis assessment on the process;
- Determine the Critical Control Points (CCPs) in the system;
- Establish critical limits for the CCPs identified;
- Establish a system to monitor control of the CCPs;
- Establish the corrective actions to be taken when monitoring indicates that a particular CCP is not under control;
- Establish procedures of validation to confirm that the HACCP system is working effectively;
- Establish documentation concerning all procedures and records appropriate to these principles and their application.

8.6.3 The HACCP system shall be reviewed at least annually and also prior to the introduction of new products, processes, systems, equipment or infrastructure changes.

8.6.4 The HACCP team leader or nominated team representative shall be able to demonstrate competence in the understanding of HACCP principles and their application.

8.6.5 Key personnel identified as HACCP team members shall have appropriate training, product and process knowledge and experience.

8.6.6 HACCP shall have senior management commitment and shall be implemented through agreed procedures. Reference to requirements for product safety shall include any measures identified in the HACCP plan.

8.6.7 Through the HACCP system, the applicant shall be able to demonstrate effective control of all operations critical to food safety.

### HACCP Documentation and Records

8.6.8 Controlled documentation shall be established which adequately describes the system and records all monitoring activities essential to the implementation and operation of HACCP.

8.6.9 The documentation should include:

- The procedures describing the HACCP system;
- Data used in the hazard analysis;
- Specification of product and materials used;
- Monitoring procedures (for CCPs);
- CCP monitoring records signed and dated by responsible person(s);
- Audit reports and minutes produced at meetings.

# Certified Quality Aquaculture; Eco Requirements

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## 1.0 Environmental Management

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### 1.1 Environmental Management and Commitment

- 1.1.1 The applicant shall be able to demonstrate a commitment to the reduction in environmental impact arising from activities under their direct control.

### 1.2 Environmental Management

- 1.2.1 Management commitment to the implementation, maintenance and operation of an Environmental Management System (EMS) shall be established.
- 1.2.2 Key components of the EMS shall include:
- Management commitment;
  - Staff involvement;
  - Baseline and periodic review;
  - Environmental policy;
  - Setting of environmental objectives and targets, usually in the form of an environmental management programme.
- 1.2.3 An understanding of and commitment to the principles of environmental management and sustainability.
- 1.2.4 Commitment to the enhancement of environmental awareness and knowledge throughout the applicant.

### 1.3 Staff Training and Involvement

- 1.3.1 Management shall designate a key member of staff with overall responsibility for the implementation of the eco-standard.
- 1.3.4 The designated member of staff must be able to demonstrate competence in the tasks required to implement this eco-standard through professional qualification or training.
- 1.3.5 Key staff shall be aware of the requirements of the Eco-standard and any relevant legislation involvement in the process of environmental management. Training shall be documented.
- 1.3.6 There shall be provision for staff information and training on environmental issues.

### 1.4 Environmental Reviews – Baseline and Periodic Baseline Review

- 1.4.1 Prior to establishing an EMS, a baseline review shall have been carried out and documented to identify all relevant environmental aspects of production and establish the current position with regard to the environment.
- 1.4.2 The review shall include the following areas:
- 1.4.2.1 Identification of environmental aspects, including those associated with normal operating conditions,

abnormal conditions including start up and shut down, and emergency situations and accidents.

- 1.4.2.2 Identification of applicable legal requirements and other requirements to which the organisation subscribes and determines how they apply to environmental aspects.
- 1.4.2.3 Examination of existing environmental management practices and procedures including those associated with procurement and contracting activities.
- 1.4.2.4 Evaluation of previous emergency situations and accidents.

#### **Periodic Review**

- 1.4.3 The review shall be carried out periodically (minimum annually) and contain details of the activities and operations under the control of the applicant related to the environmental aspects and against the requirements of this Eco-standard.
- 1.4.4 The review shall include a review of potential Environmental Impact arising from proposed new activities, products and processes in advance of commencement with respect to relevant environmental aspects.
- 1.4.5 Environmental Impacts shall be progressively addressed.

### **1.5 Environmental Management System (EMS)**

- 1.5.1 The applicant shall establish, document maintain and continually improve an EMS.
- 1.5.2 The performance of the EMS shall be periodically internally assessed and at least annually.
- 1.5.3 The applicant shall establish an internal audit procedure to carry out this periodic review of the EMS.
- 1.5.4 Records of internal audits and actions shall be maintained.
- 1.5.5 Key environmental objectives and targets shall be set within the context of the EMS.
- 1.5.6 The applicant shall be able to demonstrate how they maintain up-to-date on new farming methods, systems and biotechnology applications, which are proven to improve environmental performance associated with the environmental objectives of the applicant.

### **1.6 Environmental Policy**

- 1.6.1 An environmental policy shall be established, documented, implemented and maintained.
- 1.6.2 The policy shall be appropriate to reflect the unique nature, scale and environmental aspects of the operation.
- 1.6.3 The policy shall be communicated to all persons working for or on behalf of the organisation ensuring that employees are aware of the applicant's Environmental Policy and of their own responsibilities and given the support and training necessary.
- 1.6.4 The policy shall be publicly available.
- 1.6.5 The policy shall establish a framework/basis for setting and reviewing environmental objectives and targets that shall include as a minimum:
  - 1.6.5.1 Respect for the working environment, supporting sustainable development and environmentally

sound business practices;

- 1.6.5.2 Compliance with applicable legal requirements and any other requirements to which the organisation subscribes;
- 1.6.5.3 Ensuring that employees are aware of the applicant's environmental policy and of their own responsibilities and given the support and training necessary;
- 1.6.5.4 Working and liaising with government and non-government bodies towards the improvement of the local environment;
- 1.6.5.5 Engaging and listening to the concerns of customers, employees, neighbours and the wider community;
- 1.6.5.6 The provision of information to the public necessary to understand the commitment to environmental sustainable practices by the applicant;
- 1.6.5.7 Participation in local aquaculture management systems and/or single bay management plans where applicable;
- 1.6.5.8 The assessment of environmental impact of all new activities, products and processes in advance of their adoption;
- 1.6.5.9 The provision for the access to external information on environmental issues by the applicant;
- 1.6.5.10 Prevention of pollution;
- 1.6.5.11 Application of the best available technology and procedures in order to optimise both the farm husbandry and the interactions of the farm with the environment.

## **2.0 Site Selection and Management**

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The applicant shall ensure that land based and foreshore operations and surrounding areas are maintained in a neat and ordered manner. In order to do this, the following practices apply.

### **2.1 Site Selection and Maintenance**

- 2.1.1 On choosing a site, in consultation with the equipment suppliers, technical experts and the farm's insurance applicant (where applicable), the applicant shall determine the most appropriate equipment, mooring systems and structures to be used and their suitability for the specific location and purpose intended and with due consideration to prevailing weather conditions.
- 2.1.2 All aquaculture operations shall be easily identifiable and appropriate records maintained for each unit with regard to stock, movements, maintenance, repair and testing records.
- 2.1.3 The applicant shall ensure that operations are within relevant licensed area.
- 2.1.4 The applicant shall demonstrate commitment to the maintenance of clean and tidy pier facilities.
- 2.1.5 In cases where landing facilities are used for storage of equipment applicant shall maintain them neat and orderly and ensure that such storage does not obstruct other pier users.
- 2.1.6 The applicant shall produce site plans for all facilities including common facilities such as piers and slipways. These shall clearly mark, site boundaries, access points and where necessary, any hazards, obstacles to navigation and safe navigational routes for servicing sites. Clean and dirty areas, waste storage and collection areas shall also be identified.

- 2.1.7 An inventory of all stored equipment shall be maintained.
- 2.1.8 The applicant shall promptly remove and repair damaged equipment and avoid the accumulation of disused and de-commissioned equipment.
- 2.1.9 The applicant shall organise or take part in periodic shore clean-up operations involving staff and the local community as appropriate.
- 2.1.10 All structures shall comply with any agreed engineering requirements regarding anchorage, stability, strength and buoyancy specified by the licensing authority.
- 2.1.11 All structures shall be properly installed serviced and maintained by competent personnel in compliance with the manufacturer's instructions and specifications.
- 2.1.12 The applicant shall keep an inventory of proper disposal of decommissioned and scrapped equipment.
- 2.1.13 The applicant shall provide clear separation of clean and dirty areas in a manner to discourage infestation by pests.
- 2.1.14 There shall be provisions for pest control at piers, slipways and any area which is used to receive, hold or handle fresh product and or feed.

## **2.2 Land use**

To minimise visual impact of developments the applicant shall respect the character and diversity of their landscape setting and help sustain the qualities that lend a distinctive sense of place to coastal landscapes.

- 2.2.1 The applicant shall adhere to the following practices:
  - 2.2.1.1 Management of existing aquaculture operations according to planning consent conditions and best practice principle outlined in license conditions;
  - 2.2.1.2 Use dark subdued or neutral colours where possible with a matt surface;
  - 2.2.1.3 Ensure design and colour continuity between aquaculture operations in the same area;
  - 2.2.1.4 For new developments, assess potential visual impact according to the national and international guidelines;
  - 2.2.1.5 Consult with local co-operation groups and take part in any local area and single bay management initiatives in this regard.

## 3.0 Environmental Aspects

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The applicant shall manage facilities to avoid and reduce the impact of operations on the natural environment from all activities – accidental leaks, spillages, wastes, visual and odour impacts.

### 3.1 Prevention of Spills, Taints and Odours

- 3.1.1 The applicant shall commit to choose, where appropriate, disinfectant, cleaning and other chemicals with an improved environmental profile.
- 3.1.2 Chemicals shall be managed to avoid accidental release into the environment and minimise impact from daily use and handling and ensure staff safety.
- 3.1.3 There shall be a minimisation of use of any chemical on site.
- 3.1.4 The applicant shall be aware of the associated risks for all chemicals and chemical substances shall be managed accordingly.
- 3.1.5 An up-to-date copy of the Material Safety Data Sheet (MSDS) shall be made available to relevant staff and a copy retained in the same storage place as the chemical and on file for reference.
- 3.1.6 Responsibility shall be assigned for chemical storage and stock control systems.
- 3.1.7 Accurate records of incoming and outgoing stock shall be maintained.
- 3.1.8 A thorough regular inspection of chemical storage shall be carried out and documented.
- 3.1.9 All chemicals shall be securely and safely stored, excessive stocks shall not be held on site.
- 3.1.10 All containers used to hold chemicals shall be leak-proof, of suitable design and material for intended use and clearly labelled. They shall be stored according to instructions where given.
- 3.1.11 The applicant shall provide appropriate personal protective equipment as itemised in MSDS for the handling of hazardous materials.
- 3.1.12 Any chemical stock that shows signs of deterioration or has lost its label shall be disposed of in a legal manner (transported by licensed contractor and licensed waste disposal method, appropriate to the classification of the waste so as to avoid Environmental Impact).
- 3.1.13 A record shall be maintained of all chemical and hazardous waste disposal.
- 3.1.14 The applicant shall provide appropriate bunded storage of at least 110% of volume for fuels and chemicals and provision for draining in a manner not to cause Environmental Impact.
- 3.1.15 Bunding shall include a method to remove contained spillages without causing risk of contamination.
- 3.1.16 Biodegradable hydraulic fluid shall be used where feasible.

### 3.2 Leaks, Spills from Internal and External Sources

- 3.2.1 Preventative maintenance of equipment shall be in place for the avoidance of fuel spills from vehicles, winches, cranes, and mechanical equipment on land and water.
- 3.2.2 All machinery, vehicles and vessels shall be operated by appropriately qualified and trained staff in a safe and professional manner to avoid collision and contamination of the environment.

- 3.2.3 There shall be mitigation of and contingency plans for spills from internal or external sources. This shall include:
- 3.2.3.1 An emergency spill response plan which shall detail proper procedures, responsibilities and the availability of appropriate equipment to ensure rapid containment and clean-up of spillages;
  - 3.2.3.2 Provision for **notification of the Certification Body** and any relevant authorities of any potential threat of pollution that the applicant observes and taking samples where necessary;
  - 3.2.3.3 An up-to-date contact list of all the relevant organisations as part of the emergency spill response;
  - 3.2.3.4 Provision for the rapid contact and deployment of staff and appropriate technical personnel (on and off site) in the event of a potential threat of pollution.

### **3.3 Protection from Oil Contamination**

In the event of an oil spillage every effort to protect the local environment and reduce the potential stock contamination shall be taken.

- 3.3.1 In the event of an oil spillage that cannot be contained by on site equipment such as spill kits, the applicant shall immediately inform the coast guard and other relevant authorities.
- 3.3.2 Emergency spill response plans shall address how to deal with larger scale contamination incidents, (including access to deflective and containment booms, chemical dispersion, beach cleanup operations) in order to limit potential impact on and conserve the local environment. The plan shall include provisions for notifying the Certification Body of any incidents within 24hrs from incident.
- 3.3.3 Consideration shall be given to the health and welfare of stock including movement of stock to unaffected sites and emergency harvesting of unaffected stock that is of market size.
- 3.3.4 Stock shall not be sold as certified product until it is established that it is free from taints, off-odours and residues as a consequence of chemical/oil spillage.
- 3.3.5 A sampling programme including analytical and organoleptic tests shall be carried out to ascertain the nature and extent of any stocks affected by the absorption and tainting of spill before the commencement of harvesting.
- 3.3.6 Sale of stock that may be injurious to health is illegal and is prohibited.

### **3.4 Visual Impact Reduction**

The applicant shall manage facilities to reduce the visual impact of aquaculture operations

- 3.4.1 Farming systems, facilities and gear shall be of a design and colour that minimises the visual impact of the farming activity.
- 3.4.2 Lights and bright coloured buoys shall be minimised to those required for navigational safety.
- 3.4.3 Land based and foreshore facilities shall adhere to license or other regulatory requirements that specify conditions relating to preservation of visual amenity of the area.
- 3.4.4 There shall be minimisation of the use of lights on site without compromising safe navigation and health and safety.

- 3.4.5 The applicant shall avoid shining bright light seawards to minimise navigation hazards.
- 3.4.6 The applicant shall position spotlights directly above the work area to maximise specific illumination and minimise reflection.
- 3.4.7 The applicant shall inform neighbours where navigational lighting failures are observed on their sites.
- 3.4.8 For long-line mussel culture, operators are required to have 100% grey floats apart from those used to mark site as necessary for navigation.
- 3.4.9 For long-line mussel culture, lines must be deployed in neat, straight lines with similar separation distances between lines to facilitate access.

### **3.5 Noise Impact Reduction**

Aquaculture operations can create incidental noise that can impact on the surrounding environment especially through the use of motorised equipment. Noise travels particularly well across water and during the night. To minimise noise pollution and protect staff, residents, other marine users and wildlife from noise impact.

- 3.5.1 The applicant shall adhere to planning permission for conditions on noise levels, where defined.
- 3.5.2 The applicant shall establish arrangements to reduce the impact of noise, particularly for night time operations.
- 3.5.3 Ongoing and thorough maintenance of all machinery, vessels and other marine equipment including adequate lubrication of all rotating parts and the fitting of sound suppression devices e.g. mufflers/silencers, barriers and baffles shall be carried out.
- 3.5.4 Vessel speed close to the shore shall be reduced.
- 3.5.5 All noise shall be kept to an absolute minimum when working at night.
- 3.5.6 Recreational sound systems shall be avoided unless using headphones.

### **3.6 Odour Impact Reduction**

Aquaculture products, by-products and various substances used in daily operations have the potential to create odours. To avoid odour nuisance outside the operational area companies shall adhere to the following practices.

- 3.6.1 The applicant shall adhere to conditions of planning permission regarding odour levels where applicable.
- 3.6.2 There shall be designation of storage areas and containers for materials that may create odour.
- 3.6.3 There shall be proper storage and maintenance of facilities and equipment at all times.
- 3.6.4 The build-up of harvest by-product material shall be avoided. Mortalities, fouled nets or equipment shall not be stored on or near public access areas. Materials that may emit odours shall be removed or correctly disposed of before an odour problem can develop.
- 3.6.5 Boats and machinery in contact with product shall be washed, cleaned and where applicable disinfected on a regular basis to avoid the buildup of organic material that may cause odour or a risk to product.

### 3.7 Feed Management and Nutrient Impact Reduction (Finfish)

- 3.7.1 There shall be a feed management system in place for its economic and sustainable use.
- 3.7.2 Provisions to ensure that feed is ordered, stored and delivered to the aquaculture operation and fed in a manner that avoids accidental spillage, losses through pest and predator activity, deterioration in quality, disposal due to shelf life expiration or through accidental contamination.
- 3.7.3 Substantial quantities of feed spillage, subsequent loss and feed disposal shall be recorded and preventative actions taken to mitigate its reoccurrence.
- 3.7.4 A feeding strategy shall be devised in consultation with qualified technical staff to ensure the correct type and quantity of feed is fed to meet the physical and nutritional requirements of stocks at all times.
- 3.7.5 A feeding strategy shall be devised that actively measures and sets as an objective, specific goals and targets for the reduction of the feed conversion ratio.
- 3.7.6 Accurate records of the quantity of feed delivered, growth rate, stock biomass (less mortality) and feed conversion ratio shall be maintained.
- 3.7.7 Feed management (ordering, storing, delivery and recording) shall be subject to periodic internal auditing, at least on an annual basis.
- 3.7.8 For sea sites an annual impact assessment on the benthic area beneath and adjacent to pens during the period of peak biomass shall be carried out.
- 3.7.9 This assessment shall satisfy the conditions set out in the regulators monitoring protocol for offshore finfish operations or equivalent national protocol.
- 3.7.10 Where the results and the independent conclusions of benthic surveys indicate that there has been an unsustainable increase in benthic impact the applicant shall implement measures to reduce nutrient impact to sustainable levels.
- 3.7.11 The applicant shall ensure that fresh water aquaculture operations adhere to the relevant authority abstraction and discharge consents.
- 3.7.12 The applicant shall ensure that for fresh water aquaculture operations the deviation of effluent water from influent is assessed and reviewed to ascertain the impact on the local water course, particularly during periods of peak biomass.
- 3.7.13 For fresh water aquaculture operations the applicant that shall include the following water quality parameters in this assessment:
- Biological Oxygen Demand (BOD);
  - Suspended Solids;
  - Nitrates, Nitrite and Total Nitrogen (N);
  - Orthophosphates and Total Phosphates (P).

## 4.0 Nature and Biodiversity

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Impacts on habitats and species within the production area shall be minimised. The applicant shall adhere to the following.

### 4.1 Nature and Conservation Designation

- 4.1.1 The applicant shall be aware of and maintain documentation of any nature conservation designations in and around their licensed area. There shall also be an awareness of the features of the designation and the sensitivities of the habitats / species for which the designation was made.
- 4.1.2 The applicant shall ensure that their operations do not damage (or impact) the long term conservation and biodiversity of species and habitats.
- 4.1.3 Only non-harmful predator deterrents shall be employed, used appropriately and deployed according to manufacturer instructions.
- 4.1.4 The use of Genetically Modified Aquaculture Organisms is prohibited.
- 4.1.5 Hormone treatment of stocks sold for human consumption is prohibited.
- 4.1.6 The design and specification of any farming gear must exceed the tolerances predicted by the wave climate analysis provided within the Environmental Impact Statement for the site.
- 4.1.7 All treatments used for the purposes of fish health shall be administered according to authorisation and/or manufacturer instructions, under veterinary guidance where applicable and in a manner that causes minimal impact on the biodiversity and conservation of the local environment.
- 4.1.8 Culture density must be managed based on best practice and knowledge of the local ecosystem's carrying capacity.
- 4.1.9 The applicant must maintain a wildlife log to record any unusual sightings.
- 4.1.10 The applicant must provide contact details for local NPWS (National Parks and Wildlife) ranger and any other relevant local experts.
- 4.1.11 The applicant must commit to take part in environmental surveys/ monitoring as required.

### 4.2 Prevention of Farm Escapes (Finfish)

- 4.2.1 The applicant shall implement procedures and practices that prevent farmed fish from escaping.
- 4.2.2 The applicant shall consult and implement any national codes of practice for the prevention of farmed escapes and adhere to conditions set out by the regulator for prevention, reporting and recording of escape occurrences.
- 4.2.3 The design of any farming gear shall account for extreme weather conditions likely to be encountered at the site and due consideration given to its ability to withstand such conditions without losing stock.
- 4.2.4 The applicant shall be able to demonstrate a rationale to the choice of equipment, mooring systems, structures, nets used and their suitability for the specific location and purpose intended to avoid loss of fish.
- 4.2.5 Operational procedures such as net changes, treatments, boat transfers, grading and handling

operations must be assessed and carried out so as to avoid fish escape.

- 4.2.6 Farmed escapes shall be recorded and reported to the regulator within 24 hours of discovery and for all escapes, **an incident report must be forwarded to the Certification Body within 24 hours** with details of the suspected cause of the escape and immediate corrective actions implemented.
- 4.2.7 Net design shall ensure that under pressure, stresses are directed into reinforced areas of the net specifically designed to deal with this, such as reinforced panels, anti-chafe and higher specification reinforcements and not into the main body of the net.
- 4.2.8 Nets shall be replaced with new nets after 2 full cycles of fish rearing and always visually inspected as soon as practical after extreme weather conditions. Where net strength testing indicates that nets are within design specifications, nets may be used for longer than 2 full cycles.
- 4.2.9 All pen nets shall be treated with a UV-inhibitor if stored outside in order to prevent deterioration from exposure to ultraviolet light.
- 4.2.10 Finfish operations shall have enough spare nets of usable condition available at all times to replace damaged nets.
- 4.2.11 A system of net labelling and tracing shall be established to support the correct management of nets.
- 4.2.12 Moorings shall be compatible with the farming system installed. Installation shall be carried out to ensure that all loads or stresses imposed on the unit are distributed in accordance with its design, and that the unit has adequate movement and flexibility.
- 4.2.13 Moorings and farming systems shall be installed by competent personnel experienced in the correct deployment and mooring of gear and where relevant, in consultation with the manufacturers.

### **4.3 Sustainable Sources of Seed Mussel**

- 4.3.1 The applicant must ensure that mussel seed comes from ecological sustainable sources.
- 4.3.2 Rock sourced seed must be sourced sustainably over extensive areas of the shore allowing the majority of stock to remain.
- 4.3.3 Eco-certified mussels must not come from seed derived from dredging activities.

## **5.0 Cultural Heritage**

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To respect and protect the maritime and cultural communities, landscapes and archaeological heritage of the coastline.

### **5.1 Conservation of Heritage**

- 5.1.1 The applicant shall report potential archaeological features so that they can be investigated in an appropriate manner either in situ, removed or preserved by record.
- 5.1.2 The applicant shall not undertake developments or operations until it is established that they will not affect sites of archaeological designation or interest.
- 5.1.3 Where appropriate, the applicant shall retain evidence of investigations and assessments that establish and verify the conditions of clause 5.1.2.

## **6.0 Waste Management and Reduction**

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To minimise the amount of waste produced by farming operations and to manage all unavoidable waste in an environmentally sound manner.

The applicant shall adhere to the following practices.

### **6.1 Waste Management Plan**

- 6.1.1 Implement a waste management plan according to the principles of prevention, reduction, reuse, recycling and recovery.
- 6.1.2 Demonstrate commitment to seeking alternative recycling and re-use methods of disused equipment.
- 6.1.3 Complete a waste audit on an annual basis. Record all waste arising according to waste type, quantity and disposal destination.

### **6.2 Waste Reduction and Recycling**

- 6.2.1 The applicant shall purchase materials with a long lifespan and/or made from recycled and/or recyclable materials, e.g. recycled paper/plastics, rechargeable batteries, long life light bulbs, refillable print cartridges.
- 6.2.2 Materials that cannot be readily recycled shall be avoided, this includes plastic mussel mesh.
- 6.2.3 The applicant shall utilise recycling programmes, where feasible for decommissioned floats, buoys, plastics, glass, aluminum, metal and paper.
- 6.2.4 Where legally feasible and practical, the applicant shall compost organic matter such as reject product, paper and cardboard.
- 6.2.5 All mussel long-line floats must be recyclable.

### **6.3 Waste Disposal**

- 6.3.1 The applicant shall ensure prompt disposal of disused equipment and waste, including hazardous waste from the site according to legislation.
- 6.3.2 The applicant shall ensure separation and segregation of waste into appropriate re-cycling and non re-cycling categories for all organic and non-organic waste to eliminate cross contamination and avoid offensive odour and pest hazards.
- 6.3.3 Waste shall be disposed at approved facilities appropriate to the risk category.
- 6.3.4 Effluent discharge shall meet the discharge consents of the relevant authority.
- 6.3.5 The applicant shall establish an emergency plan to deal with unexpected large volumes of mortalities.
- 6.3.6 The applicant shall adhere to regulatory conditions for the discharge of waste water effluent.

- 6.3.7 Wastewater treatment processes shall be managed and monitored to ensure that they are operating at optimum conditions.
- 6.3.8 Discharge of toxic, noxious and dangerous substances is prohibited.
- 6.3.9 The applicant shall ensure that a waste container or refuse bag is secured on all vessels and vehicles, for domestic waste.

## **7.0 Resource Management and Conservation**

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The applicant shall use only those sites that are compatible with long-term sustainable operations and acceptable ecological effects.

### **7.1 Co-ordination of Activities**

- 7.1.1 The applicant shall coordinate with other water users to develop and foster equitable use of the resource and mutual understanding.

### **7.2 Energy Conservation**

All installations shall be designed, developed and managed with a view to the equitable and efficient use of energy resources.

- 7.2.1 The applicant shall monitor and record the energy consumption with respect to fuel and electricity on an annual basis and implement measures as part of the EMS for its efficient use.
- 7.2.2 Energy consumption per unit production shall be established and monitored.
- 7.2.3 Method and targets to reduce energy consumption and utilise renewable energy shall be investigated.
- 7.2.4 Consideration to the recovery of heat from processing operations for re-use in office heating, systems or otherwise shall be demonstrated.
- 7.2.5 Equipment with a high-energy consumption shall be identified and methods employed to ensure that energy is conserved and where possible, reduced.
- 7.2.6 All cooling equipment such as blast freezers, cold stores and chillers shall be maintained in good working order, according to manufacturer's instructions, properly insulated, and operated according to standard operating procedures for loading/unloading and defrosting to ensure energy conservation.
- 7.2.7 All boiling/cooking equipment such as steam cookers shall be maintained in good working order, according to manufacturer's instructions for their operation.
- 7.2.8 The applicant shall, where possible, source their electricity from a supplier who is committed to a programme of renewable energy.

### **7.3 Sustainability of Raw Materials used in finfish Feed**

- 7.3.1 All raw materials and feed additives used in the manufacture of finfish feed shall conform to the national feed regulations.

- 7.3.2 Marine raw materials shall be sourced from fisheries having a defined total allowable catch (TAC) and quota based on a government recognised scientific evaluation and employing legal and responsible fishing practices.
- 7.3.3 Feed shall be purchased from a licensed and reputable fish feed manufacturer who can attest to the Manufacturers Declaration contained in Annex B.

## Annex A: Feed Manufacturers Declaration

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The feed manufacturer must provide a declaration which includes the following requirements.

### General Feed Manufacturer Declaration

**We declare that:**

1. All sites owned and operated adhere to all current Feed Regulations.
2. We will undertake and provide evidence that the feeds supplied meet the legal requirements of following specification:
  - Feed shall not be derived from Genetically Modified Organisms
  - Fish feed shall not contain product from the same species being fed
  - Feed shall exclude all animal products with the exception of fish products
  - The use of ingredients derived from any material likely to cause taint in the flesh of the fish and of growth promoters is prohibited
3. We will list, in descending order of inclusion on the bag ticket, or in writing when requested, ingredient groups for all products as covered by the Feed Regulations.
4. We operate a HACCP based feed safety system to keep the risk of biological, chemical and physical contamination of feed as low as reasonably achievable according to REGULATION (EC) No 1831/2003.
5. We have written procedures on traceability of raw material of all raw materials used in feed manufacture, which with reasonable notice, relevant individuals can request to be shown the procedure.
6. We will ensure all buildings, facilities and manufacturing equipment are constructed and maintained to suit feeding stuffs manufactured and stored on site.
7. We will ensure site is clean and tidy and free from accumulated waste with relevant cleaning records retained.
8. Suitable pest control procedures are in place
9. We will operate and communicate evidence of an Open Mill/Site Policy whereby, with reasonable notice, relevant individuals can be shown around the feed/mill store.

### Marine raw materials used in the manufacture

We declare that marine raw materials (fish meal, fish oil and marine origin based products) used in the manufacture of diets conforms to the following criteria:

1. That they are derived from a fishery managed on the basis of sustainability and conservation brought about through regular scientific and technical evaluation of its biological health and abundance in order to determine effort and total allowable catch.
2. Management of the fishery includes continuous monitoring of catch and as appropriate measures to manage fishing effort such as, restricted access to fishing areas (closed areas or seasons), restricted or selective gear and measures to conserve undersized catch and non-target species.
3. Vessels in the fishery are registered and are permitted to fish in that fishery by the relevant authority.

4. Management and vessels in the fishery are committed through Authority Regulation to responsible fishing practices as described in the FAO Code of Conduct for Responsible Fisheries including:
  - a. Engaging in only legal fishing activities and supplying only legally landed fish
  - b. Conservation of fishery resources and fisheries biodiversity
  - c. Conservation and protection of non- target living aquatic resources, their environments and their biodiversity
  - d. Conforming to the Principles of the International Bill of Human Rights of the Universal Declaration of Human Rights regarding the absence of forced, bonded, slave, unpaid and child labour in fishing.
  
5. The Management and Control of the Fishery is recognised and acceptable by the wider International Community; e.g. FAO (Food and Agriculture Organisation),
  
6. We have a written policy which includes assessment of source fishery status and identification of improvement needs and work plan to deliver improvements. The policy includes a commitment and timeline to source aquaculture and fishery products from responsible/best practice sources, such as those certified to a standard benchmarked at minimum consistent with relevant FAO's ecolabelling guidelines or by identified independent risk assessment/s.

**We declare that all raw materials used in the manufacture of diets conforms to the following criteria:**

1. It does not contain residues of any pesticides and/or herbicides and environmental contaminants and toxins above the legal limits.
2. All ingredients meet the relevant Feed Regulations requirements.
3. Are traceable to the country of origin and/or manufacture.
4. Are sourced from responsible producers or traders, appropriately registered or licensed.
5. Fish meal and fish oil (>1% inclusion) is traceable to the species and, at least, to the country of origin.
6. Fish meal and fish oil is not manufactured from endangered, threatened or protected species. Endangered species are defined as species listed in relevant national listings (e.g., Vietnam's Red Data Book) and/or global listing organizations such as CITES (Appendix 1), IUCN Red List (Categories Critically Endangered (CR), Endangered (EN), Vulnerable (VU)). See [www.iucnredlist.org](http://www.iucnredlist.org) and [www.cities.org](http://www.cities.org) for more information.
7. The use of fishmeal and fish oil from illegal, unreported, and unregulated fishing (I.U.U.) is prohibited.
8. Aquatic feed protein from the same species and genus as the target farmed-species on the feed product label is prohibited in the manufacture of feed.
9. Absence of forced, bonded, slave and child labour in feed material supply chains.

**Signed:**

**Position:**

**Date:**

## AMENDMENT LOG- to be up-dated on final publication

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<b>DATE</b>	<b>CHANNEL</b>	<b>AMENDMENT</b>	<b>VERSION</b>	<b>AUTHORISED BY</b>
2021	TAC Meeting	Changes have been made to reflect the outcome of a client base survey highlighting emphasis on environmental performance, biodiversity, sustainable management and nature conservation. The revision reflects the publication of the EU Organic Regulation and the State decision to translate into a single Organic Food and Farming Standard for Ireland which supersedes the subscope of CQA Organic Aquaculture.	For Issue 2.0	Vera Flynn

## ACKNOWLEDGEMENTS

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- BIM CQA Team Members
- Food Safety Authority of Ireland
- Marine Institute (Ireland)
- Irish Farmers Association Aquaculture Division and Members
- Irish Aquaculture Industry
- ThinkAqua
- Global Trust Certification Ltd.
- RS Standards Ltd
- Independent Aquaculture Experts

## **BIM Organic Aquaculture Advisory Document**

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As a service to CQA Clients, BIM maintains an Organic Aquaculture Advisory Document which provides information to CQA Applicants and Certified Entities on the implementation and maintenance of organic aquaculture farming practices that are consistent with the Organic Food & Farming Standards in Ireland, Edition 2.

Information and guidance to applicants will be posted and updated periodically as the new Organic Regulation (848/2018) and supporting measures come into effect at: <https://bim.ie/aquaculture/sustainability-and-certification/certified-quality-aquaculture-cqa-programme/>