1. Purpose

In 2015, the Aquaculture Stewardship Council (ASC) and Marine Stewardship Council (MSC) confirmed their intent to proceed with the joint development of a Seaweed Standard for public consultation in 2016. This paper presents the main technical aspects of the draft standard, including the definition of the scope and a revised set of Principles and Performance Indicators (PIs) and Scoring Issues (SI) for the assessment of seaweed production systems. The minimum and target requirements for each Scoring Issue (SI) and guidance for their interpretation are presented, as well as the criteria necessary to determine which PI should be scored in each of the production categories proposed.

2. Background

This first draft MSC-ASC Seaweed Standard comprises a combination of indicators found in the current ASC and MSC Standards covering both wild harvest and farmed seaweed operations. The document has been approved for release in January 2016 by the joint Seaweed Standard Committee (SSC), set up to oversee this process by the MSC and ASC boards.

3. Considerations

The joint Seaweed Standard is based on five principles, reflecting the content of the existing MSC and ASC Standards. The following sections is open for public consultation, including:

- **Fisheries and farming certification.** Sections 1 to 7 outline the scope of the standard and the assessment process. These aspects overlap with the assessment processes (see separate paper), and would be further developed for inclusion in the second round of consultation (summer 2016).

- **Appendix I. Performance indicators.** The performance of the harvesting system or farm is scored against a series of Performance Indicators (PIs). 33 PIs have been defined, taking into account a preliminary review done by seaweed experts contracted by MSC, further review of the available literature and the feedback received after the MSC Technical Advisory Board (TAB) and ASC Technical Advisory Group (TAG) meeting in September 2015. The specific requirements of each PI will be reviewed during the first and second public consultations of the standard.

- **Appendix II. Scoring Issues.** Each PI is composed of one or more Scoring Issues (SIs), which are the single parts of the assessment tree that need to be assessed and scored. 70 SIs have been defined. Each SI includes Scoring Guideposts (levels) that the assessment team will have to
assess, at one or both of the following levels: the minimum level (equivalent to the current MSC SG60), and the target level (=MSC SG80).

- **Guidance.** Related to the sections above, it is expected that this section will be further developed once we have the feedback from the consultation process.

4. **Potential interactions with other work**

There are interactions with the development of the Seaweed certification process.

5. **Next steps**

Consultation responses will be published anonymously on the MSC Program Improvements website after the consultation closes. Feedback will be analysed and discussed with the technical working group and the Seaweed Standard Committee. The standard will be revised with additional supportive guidance drafted. These will be subject to public consultation in August-September 2016. Final decision on the standard is expected in late 2016, and finalised for release mid-2017. Find out more detail on the Seaweed Standard development timeline.

6. **Who can comment? How do I give feedback?**

This consultation is public and open to all interested parties.

The feedback survey allows you to respond to specific questions on this topic. We also welcome any more detailed comments that you wish to make on this consultation which can be emailed directly to: seaweedstandard@msc.org
Table of Contents

1. Purpose ........................................................................................................................................... 1
2. Background ........................................................................................................................................ 1
3. Considerations .................................................................................................................................. 1
4. Potential interactions with other work ......................................................................................... 2
   There are interactions with the development of the Seaweed certification process. ......................... 2
5. Next steps ........................................................................................................................................ 2
6. Who can comment? How do I give feedback? .............................................................................. 2

MSC ASC Seaweed Standard – Consultation Draft ............................................................................ 3

Fisheries and farming certification .................................................................................................. 5
   Principle 1: Sustainable wild populations ...................................................................................... 5
   Principle 2: Environmental impacts .............................................................................................. 5
   Principle 3: Effective management ............................................................................................... 5
   Principle 4: Social responsibility .................................................................................................. 5
   Principle 5: Community relations and interaction ....................................................................... 5

1 Confirmation of scope ....................................................................................................................... 6
2 Categories of harvesting and fishing activities .............................................................................. 6
3 Defining the unit of assessment and unit of certification ............................................................... 7
4 Other eligible fishers and entities and certificate sharing ............................................................... 8
5 Inseparable or practically inseparable catches ........................................................................... 8
6 Overlapping fisheries ...................................................................................................................... 9
7 Scoring the fishery ............................................................................................................................ 9
   Checklist ........................................................................................................................................... 9
   Scoring .............................................................................................................................................. 9

8 Setting conditions, Reporting, Determination and Certification .................................................... 10
Fisheries and farming certification

Throughout the world fisheries and farms are using good management practices to safeguard jobs, secure seaweed stocks for the future and help protect the marine environment. The science based MSC-ASC environmental standard for sustainable fishing and farming of seaweeds will offer a way to confirm sustainability, using a credible, independent third-party assessment process. It means that sustainable fisheries and farms can be recognised and rewarded in the marketplace, and gives an assurance to consumers that their seaweeds (or by-products derived from seaweeds) come from a well-managed and sustainable source. Certified harvesting and farming activities incorporate institutional and operational frameworks that require use of the resource to be responsible and sustainable, from both a social and environmental point of view.

The standard and requirements have been developed to meet global best practice guidelines for certification and ecolabelling programs.

The standard will apply globally to all locations and scales of seaweed operations, including both harvesting of wild population systems and aquaculture production systems.

The standard comprises five core principles:

**Principle 1: Sustainable wild populations**

Harvesting and farming of seaweeds are conducted in a manner that does not lead to depletion of the exploited wild populations and, for those populations that are depleted, harvesting operations are conducted in a manner that demonstrably leads to their recovery.

**Principle 2: Environmental impacts**

Harvesting and farming activities allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the activity depends.

**Principle 3: Effective management**

Harvesting and farming activities are subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

**Principle 4: Social responsibility**

Harvesting and farming activities operate in a socially responsible manner.

**Principle 5: Community relations and interaction**

Harvesting and farming activities operate in a manner that minimizes impacts on other farms, activities and communities.
It should be noted that the term *depletion* in the context of this standard, refers to cases where biomass drops well below target levels. These levels are those which promote the objective of optimal utilization and maintain availability for present and future generations, taking into account that longer term changes in productivity can occur due to natural variability and/or impacts other than fishing, in line with the interpretation of FAO (FAO, 1995).

This draft of the Seaweed Standard sets out basic requirements that a fishery/farm must meet to enable it to claim that its seaweed comes from a well-managed and sustainable source.

### 1 Confirmation of scope

1.1 The Conformity Assessment Body (CAB) shall confirm that the fishery or farm is within the scope of the Seaweed Standard and verify that it is eligible for certification.

1.2 A CAB shall only accept an application for certification from a fishery or farm of an introduced species if it meets the scope criteria below:

   A. **History of the introduction.** The introduction occurred at least 20 years prior to the date the application is made for assessment against the Seaweed Standard.

   B. **No further introductions.** There is no continuing introduction of the introduced species being considered for certification to the location.

1.3 If the fishery or farm is based upon an introduced species, the CAB shall score the specific Performance Indicators as required in Appendix I.

1.4 Genetically Modified Organisms (GMOs, including transgenic species) are out of the scope for the Seaweed Standard.

1.5 The fishery shall not use poisons or explosives.

1.6 During the assessment, the CAB shall withdraw the fishery from assessment if it does not continue to meet scope requirements above.

### 2 Categories of harvesting and fishing activities

2.1 The CAB shall determine which of the following production categories is appropriate to the harvesting or farming activity under assessment.

   A. **Harvest of natural populations of seaweed.**

   B. **Cultivation of seaweeds by vegetative propagation or with some stages cultivated in hatcheries followed by grow-out at sea.**

      Bi. Supply from the wild stock required.

      Bii. Supply from the wild stock NOT required or negligible.
C. Cultivation of seaweeds entirely in land-based systems.

Ci. Supply from the wild stock required.

Cii. Supply from the wild stock NOT required or negligible.

2.2 The CAB shall include in categories Bii and Cii those systems in which supply from the wild stock is not required (closed system), or if required, is so infrequent or limited, when compared to the parental stock or to the overall production, as to be safely disregarded as having a negligible impact on the wild stock.

3 Defining the unit of assessment and unit of certification

3.1 The assessment team shall review all information that is available in order to define the Unit of Assessment (i.e. what is to be assessed) and the Unit of Certification (i.e. what is to be covered by the certification).

3.2 The assessment team, in conjunction with the client, shall confirm the definition of the Unit of Assessment (UoA) based on each particular circumstance, ensuring that an appropriate spatial scale and level of potential cumulative effects is considered.

3.3 The UoA shall include:

i. The target stock(s) harvested or species cultured.

ii. The seaweed harvesting or culture systems, as per categories defined in section 2.

iii. When harvesting natural populations of seaweeds, the fleet or groups of vessels, or individual operators harvesting that stock, including any other eligible harvesters that are outside the initial Unit of Certification (UoC).

iv. When culturing seaweeds, the farms or cluster of farms, or farming operators, including any other eligible farms that are outside the initial UoC.

v. A detailed definition and precise geographical delimitation of:

I. the water body/bodies considered (categories A and B). This should be the geographical distribution of the target stock or a smaller well-defined area, water body/bodies or site/s (e.g. as leased for seaweed production), that is managed as an independent unit.

II. the land-based culturing systems considered (category C)

3.4 The assessment team shall review all information that is available to define and justify the stock or unit of stock considered in the UoA.

3.4.1 The assessment shall be conducted on all sources of seed stock used in the fishery or farm.
3.5 Any scale from an individual farm and its surrounding environment, a cluster of farms, a water body or an entire region could be in principle proposed as UoA, as long as the impacts are fully and adequately considered.

3.6 The assessment team shall inform the client that their continuation in the program depends on how the farming activity (including other farms) develops in a particular region.

3.7 In cases where a cluster of farms is selected as the UoA, the assessment team may decide to audit a reduced number of farms considered to be representative of the whole.

3.8 The assessment team shall undertake an initial review of key traceability factors and shall document whether any of the following risks are applicable:

a. The possibility of non-certified gears being used within the UoC.

b. The possibility of vessels or individuals from the UoC harvesting outside the UoC or in different geographical areas (on the same trips or different trips).

c. The possibility of vessels individuals from outside the UoC or client group harvesting the same stock.

d. Any other risks of substitution between fish from the UoC and seaweed from outside this unit.

3.9 Potential traceability risks found during the initial review are to be included in the Chain of Custody section in the notification and further assessed in the full assessment reports.

3.10 The CAB shall notify the fishery or farm of its obligations to meet traceability requirements before it sells product as certified or under-assessment including that:

3.10.1 Systems are in place to ensure that seaweed and seaweed products from the UoC are traceable back to the UoC.

3.10.2 Systems are in place to ensure that seaweed and seaweed products from the UoC shall be segregated from any products not included in the UoC.

4 Other eligible fishers and entities and certificate sharing

[TO BE DEVELOPED / CONFIRMED]

5 Inseparable or practicably inseparable catches

[TO BE DEVELOPED / CONFIRMED]
6 Overlapping fisheries

[TO BE DEVELOPED / CONFIRMED]

7 Scoring the fishery

[TO BE DEVELOPED / CONFIRMED]

After the assessment team has compiled and analysed all relevant information (including technical, written and anecdotal sources), they shall score the UoA against the Performance Indicators (PI) in the assessment tree.

Checklist

7.1 The assessment team shall use responses in 7.2 and the criteria in Appendix I (Performance Indicators) to determine which of the PIs need to be scored.

7.2 The assessment team shall complete the following check list.
   a. Is the target species an introduced species?
   b. Does the activity involve translocation of the target species?
   c. Is there contact between culturing facilities on land and the marine environment (e.g. effluents) sufficient to cause impact to the marine ecosystem?
   d. Is there evidence that because of the particular circumstances of the activity, impact is not occurring or is negligible on any other species?
   e. Does the activity require, at some point, water-based structures or substantial gear at sea?
   f. Does the activity require some stages cultivated in hatcheries?

7.3 The assessment team shall provide a detailed rationale and justification supporting the responses to each of the questions above.

Scoring

[SCORING SYSTEM TO BE FURTHER DEVELOPED]

7.4 The assessment team shall score the required individual PIs following the selection criteria for the five production categories in Appendix I.

7.5 For each PI the team shall:
   a. Discuss evidence together.
   b. Evaluate the balance of evidence.
c. Use their judgement to agree a final score following the processes below.

7.6 The team shall assess the PI against each of the Scoring Issues (SI) at the minimum and target level (Scoring Guideposts). [TO BE FURTHER DEVELOPED WHEN CONFIRMING THE SCORING SYSTEM]

7.7 To contribute to the scoring of any PI, the assessment team shall verify that each scoring issue is fully and unambiguously met.

7.8 A rationale shall be presented to support the team’s conclusion.

7.8.1 The rationale shall make direct reference to every scoring issue and whether or not it is fully met.

7.9 An exception to 7.8.1 is permitted only for those PIs that include only a single scoring issue at each Scoring Guidepost level.

A. For these PIs, it is permitted to ‘partially score’ issues to obtain intermediate scores.

B. A rationale shall be provided, clearly explaining which aspects of the scoring issue are met.

8 Setting conditions, Reporting, Determination and Certification

[TO BE DEVELOPED, SEE SEPARATE PROCESS CONSULTATION DOCUMENT]
Appendix I  Performance Indicators

The assessment team has to compile and analyse all relevant information in order to adequately score the Unit of Assessment (UoA) against the Performance Indicators (PIs) in the assessment tree. Unless specifically noted, all PIs shall be scored. However, the relevance of each indicator depends on the type and particular circumstances of the activity. In order to determine which PIs are required to be assessed and scored, the assessment team shall define and categorize the harvesting or farming activity under assessment (see section 2.1) and complete the checklist (see section 7.2) to better identify the particularities of the activity.

Categories:

A. Harvest of natural populations of seaweed.

Bi. Cultivation of seaweeds by vegetative propagation or with some stages cultivated in hatcheries followed by grow-out at sea. Supply from the wild stock required.

Bii. Cultivation of seaweeds by vegetative propagation or with some stages cultivated in hatcheries followed by grow-out at sea. Supply from the wild stock NOT required or negligible.

Ci. Cultivation of seaweeds entirely in land-based systems. Supply from the wild stock required.

Cii. Cultivation of seaweeds entirely in land-based systems. Supply from the wild stock NOT required or negligible.

Checklist:

☐ Is the target species an introduced species?

☐ Does the activity involve translocation of the target species?

☐ Is there contact between culturing facilities on land and the marine environment (e.g. effluents) sufficient to cause impact to the marine ecosystem?

☐ Is there is evidence that because of the particular circumstances of the activity, impact is not occurring or is negligible on any other species?

☐ Does the activity require, at some point, water-based structures or substantial gear at sea?

☐ Does the activity require some stages cultivated in hatcheries?

The assessment team should use this information to justify which of the PIs need to be scored, according to the criteria in the table below. Once the assessment team has determined the PIs to be scored, they should be scored according to the table in Appendix II - Scoring Issues.
Means that this PI is required to be ALWAYS scored for the category considered (column A, Bi, Bii, Ci or Cii)

Means that this PI is should NOT be scored for the category considered (column A, Bi, Bii, Ci or Cii)

Means that this PI is should be scored for the category considered (column A, Bi, Bii, Ci or Cii) DEPENDING on the criteria defined in the column “Applicability”, which takes into account the particularities of the activity

<table>
<thead>
<tr>
<th>Principles (P) and Performance Indicators</th>
<th>A</th>
<th>Bi</th>
<th>Bii</th>
<th>Ci</th>
<th>Cii</th>
<th>Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong> Sustainable wild Populations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stock Status</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>Do NOT score when supply from the wild stock is NOT required or negligible (Bii and Cii). See notes on negligible supply from wild stock (section 2.2).</td>
</tr>
<tr>
<td>Harvest strategy</td>
<td>Y</td>
<td>Y</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Genetic impact on wild stock</td>
<td>N</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>ONLY score in cases where translocation is occurring OR when the activity requires stages cultivated in hatcheries.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Do NOT score in category A.</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Do NOT score in land-based systems (C), if there is no contact, or this is considered negligible, with marine environment.</td>
</tr>
<tr>
<td><strong>P2</strong> Environmental impacts</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Habitat</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>D</td>
<td>D</td>
<td>Do NOT score in land-based systems (C), if there is no contact, or this is considered negligible, with marine environment.</td>
</tr>
<tr>
<td>Ecosystem structure and function</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>D</td>
<td>D</td>
<td>SCORE in land-based systems (C) when there is contact with the marine environment (e.g. water from the tanks are discharged into the sea, in such amount or manner that the risk cannot be considered insignificant) and this cannot be considered negligible.</td>
</tr>
<tr>
<td>ETP species outcome</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>Principles (P) and Performance Indicators</td>
<td>A</td>
<td>Bi</td>
<td>Bii</td>
<td>Ci</td>
<td>CII</td>
<td>Applicability</td>
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</tr>
<tr>
<td>2.4 ETP species management</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score. Even in cases where is assumed that impact is negligible, the assessment team shall provide specific rationale, and award subsequent score.</td>
</tr>
<tr>
<td>2.5 Other species outcome</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score. Even in cases where is assumed that impact is negligible, the assessment team shall provide specific rationale, and award subsequent score.</td>
</tr>
<tr>
<td>2.6 Other species management</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score. Even in cases where is assumed that impact is negligible, the assessment team shall provide specific rationale, and award subsequent score.</td>
</tr>
<tr>
<td>2.7 Waste management and pollution control</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score. Even in cases where is assumed that impact is negligible, the assessment team shall provide specific rationale, and award subsequent score.</td>
</tr>
<tr>
<td>2.8 Energy efficiency</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score. Even in cases where is assumed that impact is negligible, the assessment team shall provide specific rationale, and award subsequent score.</td>
</tr>
<tr>
<td>2.9 Disease and pest management practices</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score. Even in cases where is assumed that impact is negligible, the assessment team shall provide specific rationale, and award subsequent score.</td>
</tr>
<tr>
<td>2.10 Translocation Outcome</td>
<td>N</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>ONLY score in cases where translocation is occurring.</td>
</tr>
<tr>
<td>2.11 Translocation Management</td>
<td>N</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>Do NOT score in category A. Do NOT score in land-based systems (C), if there is no contact, or this is considered negligible, with marine environment.</td>
</tr>
<tr>
<td>2.12 Introduced species management</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>ONLY score in cases where targeting introduced species. Do NOT score in land-based systems (C), if there is no contact, or this is considered negligible, with marine environment.</td>
</tr>
<tr>
<td>P3 Effective Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Harvesting and farming activities are subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.</td>
</tr>
<tr>
<td>3.1 Legal and/or customary framework</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
</tr>
</tbody>
</table>
### Principles (P) and Performance Indicators

<table>
<thead>
<tr>
<th>Principles (P) and Performance Indicators</th>
<th>A</th>
<th>B</th>
<th>Bi</th>
<th>Bii</th>
<th>Ci</th>
<th>Cii</th>
<th>Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2 Consultation, roles and responsibilities</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>3.3 Farms and fishery specific objectives</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>3.4 Decision-making processes</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>3.5 Compliance and enforcement</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td><strong>P4 Social responsibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Harvesting and farming activities operate in a socially and culturally responsible manner.</td>
<td></td>
</tr>
<tr>
<td>4.1 Child labour</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>4.2 Forced, bonded or compulsory labour</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>4.3 Discrimination</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>4.4 Health, safety and insurance</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>4.5 Fair and decent wages</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>4.6 Freedom of association and collective bargaining</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>4.7 Disciplinary practices</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>4.8 Working hours</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
<tr>
<td>4.9 Environmental training</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
<td></td>
</tr>
</tbody>
</table>
## Principles (P) and Performance Indicators

### P5 Community relations and interaction

<table>
<thead>
<tr>
<th>Indicator</th>
<th>A</th>
<th>Bi</th>
<th>Bii</th>
<th>Ci</th>
<th>Cii</th>
<th>Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1 Visibility, positioning and orientation of farms or water-based structures</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>D</td>
<td>N</td>
<td>Do NOT score for land-based systems when supply from the wild stock is NOT required or negligible (Cii). See notes on negligible supply from wild stock.</td>
</tr>
<tr>
<td>5.2 Identification and recovery of substantial gear</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>D</td>
<td>N</td>
<td>Do NOT score in land-based systems when supply from the wild stock is required (Ci) IF the activity does not require farm structures or substantial gear.</td>
</tr>
<tr>
<td>5.3 Noise, light and odour</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
</tr>
<tr>
<td>5.4 Decommissioning of abandoned farms or water-based structures</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>ALWAYS score.</td>
</tr>
</tbody>
</table>
### Scoring Issues

<table>
<thead>
<tr>
<th>PRINCIPLE</th>
<th>Performance Indicator</th>
<th>SI</th>
<th>Scoring Issue</th>
<th>Minimum</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Stock Status</td>
<td>1.1.1</td>
<td>Stock status relative to irreversible impact</td>
<td>Available information indicates that the stock is above the point where the harvesting impact is irreversible or very slowly reversible.</td>
<td>The stock is at or fluctuating around a level consistent with MSY (or proxy) OR Available information indicates that harvesting impact causes insignificant change to the wild population, which is unlikely to be detectable against natural variability for this population, or if detectable this is minimal and not having impact on population dynamics.</td>
</tr>
<tr>
<td>1.2</td>
<td>Harvest strategy</td>
<td>1.2.1</td>
<td>Harvest strategy design</td>
<td>The harvest strategy is expected to achieve stock management objectives reflected in the stock status target (SI 1.1.1).</td>
<td>The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in the stock status (SI 1.1.1). The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.</td>
</tr>
<tr>
<td>1.2</td>
<td></td>
<td>1.2.2</td>
<td>Harvest strategy evaluation</td>
<td>The harvest strategy is likely to work based on prior experience or plausible argument.</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>Genetic impact on wild stock</td>
<td>1.3.1</td>
<td>Genetic outcome</td>
<td>The harvesting or farming activity is highly unlikely to impact genetic structure of wild populations to a point where there would be serious or irreversible harm.</td>
<td>There is a strategy in place, which is expected to maintain the genetic structure of the wild population at levels compatible with the Genetic outcome (SI 1.3.1) of performance.</td>
</tr>
<tr>
<td>1.3</td>
<td></td>
<td>1.3.2</td>
<td>Genetic impact management</td>
<td>There is a partial strategy in place for managing the activity such that it does not pose a risk of serious or irreversible harm to the genetic diversity of the wild population.</td>
<td></td>
</tr>
<tr>
<td>Performance Indicator</td>
<td>SI</td>
<td>Scoring Issue</td>
<td>Minimum</td>
<td>Target</td>
<td></td>
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<tr>
<td>------------------------</td>
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<td></td>
</tr>
<tr>
<td><strong>Habitats</strong></td>
<td></td>
<td>2.1.1</td>
<td>The UoA is unlikely to reduce structure and function of the habitat created by the target seaweed to a point where there would be serious or irreversible harm.</td>
<td>The UoA is highly unlikely to reduce structure and function of the habitat created by the target seaweed to a point where there would be serious or irreversible harm.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.1.2</td>
<td>The UoA is unlikely to reduce structure and function of other commonly encountered habitats to a point where there would be serious or irreversible harm. [SPECIFIC GUIDANCE MIGHT BE REQUIRED IN ORDER TO ADEQUATELY CONSIDER THE IMPACTS ON MANGROVE AREAS, OR EVEN A SPECIFIC SI TO BE DEFINED FOR MANGROVES].</td>
<td>The UoA is highly unlikely to reduce structure and function of other commonly encountered habitats to a point where there would be serious or irreversible harm. [SPECIFIC GUIDANCE MIGHT BE REQUIRED IN ORDER TO ADEQUATELY CONSIDER THE IMPACTS ON MANGROVE AREAS, OR EVEN A SPECIFIC SI TO BE DEFINED FOR MANGROVES].</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.1.3</td>
<td>The UoA is unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.</td>
<td>The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.</td>
<td></td>
</tr>
<tr>
<td><strong>Ecosystem structure and function</strong></td>
<td></td>
<td>2.2.1</td>
<td>The UoA is unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.</td>
<td>The UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.</td>
<td></td>
</tr>
<tr>
<td><strong>ETP species outcome</strong></td>
<td></td>
<td>2.3.1</td>
<td>[Where national and/or international requirements set limits for ETP species, the effects of the UoA on the population/stock are known and likely to be within these limits.]</td>
<td>[Where national and/or international requirements set limits for ETP species, the combined effects of the UoAs on the population/stock are known and highly likely to be within these limits.]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.3.2</td>
<td>Known direct effects of the UoA are likely to not hinder recovery of ETP species.</td>
<td>Direct effects of the UoA are highly likely to not hinder recovery of ETP species.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.3.3</td>
<td>Indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts.</td>
<td>Indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts.</td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td><strong>ETP species management</strong></td>
<td>2.4.1</td>
<td>Management strategy in place (national and international requirements)</td>
<td></td>
<td></td>
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<tr>
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<tr>
<td></td>
<td></td>
<td></td>
<td>[There is a partial strategy in place that minimises the UoA-related impact on ETP species, and it is expected to be highly likely to achieve national and international requirements for the protection of ETP species.]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OR, where there are no requirements for protection and rebuilding provided through national ETP legislation or international agreements.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[There is a partial strategy in place that is expected to ensure the UoA does not hinder the recovery of ETP species.]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>OR where there are no requirements for protection and rebuilding provided through national ETP legislation or international agreements.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>[There is a strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be highly likely to achieve national and international requirements for the protection of ETP species.]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td></td>
<td>2.4.2</td>
<td>Management strategy evaluation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The partial strategy/strategy is considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).</td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td>There is an objective basis for confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or the species involved.</td>
<td></td>
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</tr>
<tr>
<td>2.4</td>
<td></td>
<td>2.4.3</td>
<td>Management strategy implementation</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>There is some evidence that the partial strategy/strategy is being implemented successfully.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td></td>
<td>2.4.4</td>
<td>Review of alternative measures to minimise mortality of ETP species</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td><strong>Other species outcome</strong></td>
<td>2.5.1</td>
<td>Main species stock status</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Main species are likely to be above biologically based limits OR If below biologically based limits, there are measures in place expected to ensure that the UoA does not hinder recovery and rebuilding.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Main species are highly likely to be above biologically based limits OR If the species is below the biologically based limits there is either evidence of recovery or a demonstrably effective strategy in place between all UoAs which categorise this species as main, to ensure that they collectively do not hinder recovery and rebuilding.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
<td>Description</td>
<td>Notes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2.6</td>
<td>Other species management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6.1</td>
<td>Management strategy in place</td>
<td>There is a partial strategy in place, if necessary, which is expected to maintain or not hinder rebuilding of main species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.</td>
<td>There is a strategy in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main species at/to levels which are highly likely to be above the biologically based limits or to ensure that the UoA does not hinder their recovery.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6.2</td>
<td>Management strategy evaluation</td>
<td>The partial strategy /strategy considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).</td>
<td>There is some objective basis for confidence that the partial strategy /strategy will work, based on some information directly about the UoA and/or species involved.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6.3</td>
<td>Management strategy implementation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6.4</td>
<td>Review of alternative measures</td>
<td>There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main species.</td>
<td>There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main species and they are implemented as appropriate.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td>Waste management and pollution control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.7.1</td>
<td>Waste reduction</td>
<td>There are some measures in place that can help to reduce waste.</td>
<td>There is a waste reduction program in place.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.7.2</td>
<td>Biological waste</td>
<td>There are some measures in place that can help to reduce biological waste.</td>
<td>There is evidence of appropriate storage and/or disposal of biological waste.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.7.3</td>
<td>Chemical and hydrocarbon wastes</td>
<td>There are some measures in place that can help to reduce chemical and hydrocarbon wastes.</td>
<td>There is evidence of appropriate storage and/or disposal of chemical and hydrocarbon waste.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.7.4</td>
<td>Chemicals and hydrocarbons spills</td>
<td>There are some measures in place that can help to prevent spills of chemicals and hydrocarbons.</td>
<td>There is a spill prevention and response plan in place for chemicals and hydrocarbons originating from the harvesting or farming operation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.8</td>
<td>Energy efficiency</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.8.1</td>
<td>Energy use monitoring</td>
<td>There is some information about energy use of the fishery/farm.</td>
<td>There is evidence of energy use monitoring relative to production and ongoing effort to improve efficiency.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.8.2</td>
<td>Maintenance records of equipment</td>
<td>There are maintenance records for equipment (e.g., boats and generators).</td>
<td>Maintenance records for equipment (e.g., boats and generators) are up to date and available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Section</td>
<td>Disease and pest management practices</td>
<td>Chemicals</td>
<td>There is no evidence that the UoA uses chemicals that persist as toxins in the marine environment or on the farm or farmed seaweeds.</td>
<td>There is evidence that the UoA does not use chemicals that persist as toxins in the marine environment or on the farm or farmed seaweeds.</td>
<td></td>
</tr>
<tr>
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<td>--------------------------------------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>2.9.2</td>
<td>Pesticides</td>
<td>There is no evidence that the UoA uses mutagenic, carcinogenic or teratogenic pesticides in the aquatic environment or on the farm or farmed seaweeds.</td>
<td>There is evidence that the UoA does not use mutagenic, carcinogenic or teratogenic pesticides in the aquatic environment or on the farm or farmed seaweeds.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.9.3</td>
<td>Spread of disease and parasites</td>
<td>There is some evidence that management practices are effective in preventing the spread of disease and parasites.</td>
<td>There is evidence that management practices are effective in preventing the spread of disease and parasites.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.10.1</td>
<td>Impact of translocation activity</td>
<td>The translocation activity is unlikely to introduce diseases, pests, pathogens, or non-native species into the surrounding ecosystem.</td>
<td>The translocation activity is highly unlikely to introduce diseases, pests, pathogens, or non-native species into the surrounding ecosystem.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.11.1</td>
<td>Translocation management strategy evaluation</td>
<td>There is a partial strategy in place that is expected to protect the surrounding ecosystem from the translocation activity at levels compatible with the translocation outcome level of performance.</td>
<td>There is a strategy in place that is expected to protect the surrounding ecosystem from the translocation activity at levels compatible with the translocation outcome level of performance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.12.1</td>
<td>Management strategy for introduced species</td>
<td>There is a partial strategy in place to prevent progression of ecosystem impacts from occurring due to the presence of the introduced species.</td>
<td>There is a strategy in place to prevent progression of ecosystem impacts from occurring due to the presence of the introduced species.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## PRINCIPLE 3

### Performance Indicator

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>SI</th>
<th>Scoring Issue</th>
<th>Minimum</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Legal and/or customary framework</td>
<td>3.1.1</td>
<td>Compatibility of laws or standards with effective management</td>
<td>There is an effective national legal system and a framework for cooperation with other parties, where necessary, to deliver management outcomes consistent with Principles 1 and 2.</td>
<td>There is an effective national legal system and organized and effective cooperation with other parties, where necessary, to deliver management outcomes consistent with Principles 1 and 2.</td>
</tr>
<tr>
<td>3.1</td>
<td>3.1.2</td>
<td>Resolution of disputes</td>
<td>The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.</td>
<td>The management system incorporates or is subject by law to a transparent mechanism for the resolution of legal disputes which is considered to be effective in dealing with most issues and that is appropriate to the context of the UoA.</td>
</tr>
<tr>
<td>3.1</td>
<td>3.1.3</td>
<td>Respect for rights</td>
<td>The management system has a mechanism to generally respect the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of Principles 1 and 2.</td>
<td>The management system has a mechanism to observe the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of Principles 1 and 2.</td>
</tr>
<tr>
<td>3.2 Consultation, roles and responsibilities</td>
<td>3.2.1</td>
<td>Roles and responsibilities</td>
<td>Organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.</td>
<td>Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction(s).</td>
</tr>
<tr>
<td>3.2</td>
<td>3.2.2</td>
<td>Consultation process</td>
<td>The management system includes consultation processes that obtain relevant information from the main affected parties, including local communities and knowledge, to inform the management system.</td>
<td>The management system includes consultation processes that regularly seek and accept relevant information, including local communities and knowledge. The management system demonstrates transparency and consideration of the information obtained.</td>
</tr>
<tr>
<td>3.2</td>
<td>3.2.3</td>
<td>Participation</td>
<td></td>
<td>The consultation process provides opportunity for all interested and affected parties to be involved.</td>
</tr>
</tbody>
</table>
### 3.3 Farms and fishery specific objectives

| 3.3.1 Objectives | Long term objectives to guide decision-making, consistent with the P1 and P2 and the precautionary approach, are implicit within management policy. | Short and long term objectives, which are consistent with achieving the outcomes expressed by Principles 1 and 2, are explicit within the fishery/farm-specific management system. |

### 3.4 Decision-making processes

| 3.4.1 Decision-making process | There are some decision-making processes in place that result in measures and strategies to achieve the fishery/farm-specific objectives. | There are established decision-making processes that result in measures and strategies to achieve the fishery/farm-specific objectives. |

| 3.4.2 Responsiveness of decision-making processes | Decision-making processes respond to serious issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications. | Decision-making processes respond to all issues identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions. |

| 3.4.3 Use of precautionary approach | Decision-making processes use the precautionary approach and are based on best available information. |

| 3.4.4 Accountability and transparency of management system and decision-making process | Some information on the fishery/farm’s performance and management action is generally available on request to stakeholders. | Information on the fishery/farm’s performance and management action is available on request, and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring evaluation and review activity. |

| 3.4.5 Approach to disputes | Although the management authority or fishery/farm may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery/farm. | The management system or fishery/farm is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges. |

### 3.5 Compliance and enforcement

| 3.5.1 MCS implementation | Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery/farm and there is a reasonable expectation that they are effective. | A monitoring, control and surveillance system has been implemented in the fishery/farm and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. |
### PRINCIPLE 4

#### Performance Indicator

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>SI</th>
<th>Scoring Issue</th>
<th>Minimum</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Child labour</td>
<td>4.1.1</td>
<td>Child labour Outcome</td>
<td>No incidences of child labour or young worker abuse are found to have occurred.</td>
<td>There is evidence that risk of child labour or young worker abuse occurring has been minimised.</td>
</tr>
<tr>
<td></td>
<td>4.1.2</td>
<td>Child labour Management</td>
<td>There is a policy in place to against child labour and to protect young workers.</td>
<td>Policies are complete, strong and properly implemented.</td>
</tr>
<tr>
<td>4.2 Forced, bonded or compulsory labour</td>
<td>4.2.1</td>
<td>Incidences and risk of forced, bonded or compulsory labour (Outcome)</td>
<td>No incidences of forced, bonded or compulsory labour are found to have occurred.</td>
<td>There is evidence that risk of forced or bonded labour or occurring has been minimised.</td>
</tr>
<tr>
<td></td>
<td>4.2.2</td>
<td>Incidences and risk of forced, bonded or compulsory labour (Management)</td>
<td>There is a policy in place to ensure against forced, bonded or compulsory labour.</td>
<td>Contracts are clearly articulated and understood by personnel and minimise risk that labour is not forced, bonded or compulsory.</td>
</tr>
<tr>
<td>4.3 Discrimination</td>
<td>4.3.1</td>
<td>Incidences and risk of discrimination (Outcome)</td>
<td>No incidences of discrimination is found to have occurred.</td>
<td>There is evidence that the risk of discrimination has been minimised.</td>
</tr>
<tr>
<td>4.3.2</td>
<td>Incidences and risk of discrimination (Management)</td>
<td>There is a policy in place to ensure against worker discrimination.</td>
<td>There is in place an official anti-discrimination policy that covers all aspects of potential discrimination. There are clearly outlined procedures to raise, file and respond to a discrimination complaint in an effective manner. Management and workers are clear on the policy and procedures. Contracts include clauses ensuring no discrimination.</td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>Health, safety and insurance</td>
<td>4.4.1 Health and safety records and corrective action</td>
<td>There is evidence that health and safety related accidents and violations are recorded and corrective action is taken when necessary. No immediate and serious dangers to personnel health or safety were identified.</td>
<td>Hazards to personnel health and safety are known. Accidents are analysed for the root causes, root causes addressed, remediated and future accidents of similar nature prevented. All incidences including minor accidents are included. Records are complete and accurate. Preventive action (for example PPE) is properly applied and operating in place with appropriate staff.</td>
</tr>
<tr>
<td>4.4.2 Occupational health and safety assessment and personnel training</td>
<td>There is evidence that personnel are trained effectively in health and safety related to their role, responsibilities and activities.</td>
<td>Formal and regular training courses are undertaken. Risk assessments are documented and/or certified. Personnel are appointed to apply health and safety, for example, an overseeing management committee, first aiders and/or fire marshalls. Special risks such as expectant mothers will have due consideration.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4.3 Organisation responsibility and insurance provided for personnel accident or injury</td>
<td>No incidences of workers having to cover their own work-related medical expenses.</td>
<td>Organisation is responsible and there is proof of insurance (accident or injury) for personnel medical costs in a job-related accident or injury, unless otherwise covered. This includes all seasonal workers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>Fair and decent wages</td>
<td>4.5.1 Fair and decent wages</td>
<td>The organisation pays at least the legally required minimum wage. Deductions in pay for disciplinary actions are not allowed, and payments are made in a manner convenient to workers.</td>
<td>The organisation has accurately calculated the living wage or uses an accepted publicly available proxy and pays at least this level to workers. Overtime (as set by law or at a minimum hours in excess of 48) is paid at a premium rate. Labour-only contracting does not take place.</td>
</tr>
<tr>
<td>4.6</td>
<td>Freedom of association and collective bargaining</td>
<td>4.6.1 Freedom of association and collective bargaining</td>
<td>There are no incidences of organisation restricting worker access to associate or bargain collectively.</td>
<td>Organisation openly gives the freedom of association and collective bargaining to workers for instance via notice boards or in contracts. The organisation commits not to interfere in the operation of worker groups and to enter into dialogue with the group. There is evidence that workers are not prohibited from accessing trade union or similar organization, when they exist.</td>
</tr>
<tr>
<td>Section</td>
<td>Subsection</td>
<td>Description</td>
<td>Details</td>
<td></td>
</tr>
<tr>
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</tr>
<tr>
<td>4.7</td>
<td>Disciplinary practices</td>
<td>Disciplinary practices</td>
<td>There is a policy in place to ensure against abusive disciplinary practices. No incidences of tolerated abuse have taken place. If they do not exist or are illegal, companies shall make it clear that they are willing to engage in a collective dialogue through a representative structure freely elected by the workers.</td>
<td></td>
</tr>
<tr>
<td>4.8</td>
<td>Working hours</td>
<td>Working hours</td>
<td>The organisation abides at least to the legally required working and overtime laws. All overtime is voluntary. The organisation abides by industry norms. They adhere to 48 hours as a normal working week and 60 hours maximum working week including overtime. Overtime is not regular. Workers shall be provided with at least one day off following every six consecutive days of working.</td>
<td></td>
</tr>
<tr>
<td>4.9</td>
<td>Environmental training</td>
<td>Environmental awareness and training</td>
<td>Some information is delivered to fishery/farm employees about disposal of waste, and prevention and management of chemical and hydrocarbon spills. There is evidence of environmental awareness and training, in fishery/farm employees, sufficient for them to properly dispose of waste, and prevent and manage chemical and hydrocarbon spills.</td>
<td></td>
</tr>
</tbody>
</table>
### Principle 5

<table>
<thead>
<tr>
<th>Performance Indicator</th>
<th>SI</th>
<th>Scoring Issue</th>
<th>Minimum</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5.1 Visibility, positioning and orientation of farm structures</strong></td>
<td>5.1.1</td>
<td>Compliance with navigational rules and regulations</td>
<td>There is evidence of compliance with all applicable navigational rules and regulations.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.1.2</td>
<td>Position and orientation of farm sites</td>
<td></td>
<td>Visible farms structures are arranged in a uniform orientation and position, except where specified by law.</td>
</tr>
<tr>
<td></td>
<td>5.1.3</td>
<td>Floats</td>
<td></td>
<td>Visible floats are not made out of open-cell Styrofoam, and are of a uniform colour, except where otherwise specified by law.</td>
</tr>
<tr>
<td><strong>5.2 Identification and recovery of substantial gear</strong></td>
<td>5.2.1</td>
<td>Identification of substantial gear</td>
<td>There is evidence that all substantial gear is identifiable to farm.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5.2.2</td>
<td>Equipment for gear recovery</td>
<td></td>
<td>There is evidence that adequate equipment for gear recovery is available.</td>
</tr>
<tr>
<td><strong>5.3 Noise, light and odour</strong></td>
<td>5.3.1</td>
<td>Noise, light and odour</td>
<td>There are some measures that can help to minimise noise, light and odour originating from the farm.</td>
<td>There is evidence that noise, light and odour originating from the farm are minimized in areas where it may impact others.</td>
</tr>
<tr>
<td><strong>5.4 Decommissioning of abandoned farms</strong></td>
<td>5.4.1</td>
<td>Decommissioning of abandoned farms</td>
<td></td>
<td>There is a mechanism in place for the decommissioning of abandoned farms.</td>
</tr>
</tbody>
</table>
Guidance

Fisheries and farming certification

Sustainable and Responsible ▲

The MSC and ASC aims to develop a standard for sustainable and responsible seaweed fisheries and farming. The principles of the standard follow the references sustainable and responsible as defined in The Code of Conduct for Responsible Fisheries (FAO, 1995), the Guidelines for the Ecolabelling of Fish and Fishery Products from Marine (FAO, 2009) and from Inland Capture Fisheries (FAO, 2011), and FAO Technical Guidelines for Aquaculture Certification (FAO, 2011).

The Code of Conduct for Responsible Fisheries (FAO, 1995) states that, art. 6.1 […] The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of the living aquatic resources. Article 6.2 of the CCRF further states that Fisheries management should promote the maintenance of the quality, diversity and availability of fishery resources in sufficient quantities for present and future generations in the context of food security, poverty alleviation and sustainable development (FAO, 1995).

The Guidelines for the Ecolabelling of Fish and Fishery Products from Marine (FAO, 2009) and from Inland Capture Fisheries (FAO, 2011) are designed to certify and promote labels for products from well-managed capture fisheries and focus on issues related to the sustainable use of fisheries resources.

On the other hand, the FAO Technical Guidelines for Aquaculture Certification (FAO, 2011) states:

- […] Aquaculture should be planned and practised in an environmentally responsible manner, in accordance with appropriate local, national and international laws and regulations.
- […] When wild seeds are used, they should be collected using responsible practices.
- […] Aquaculture should be conducted in a socially responsible manner, within national rules and regulations, having regard to the ILO-convention on labour rights, not jeopardizing the livelihood of aquaculture workers and local communities.
- […] Infrastructure construction and waste disposal should be conducted responsibly.
- […] Workers should be treated responsibly and in accordance with national labour rules and regulations and, where appropriate, relevant ILO conventions.

Responsible aquaculture is the Aquaculture which is consonant with sustainable development and sustainable use (FAO, 1999).

Sustainable development is the management and conservation of the natural resource base and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal
genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable (FAO, 1999).

Sustainable use is the use of components of biological diversity (and resources generally) in a way and at a rate that does not lead to the long-term decline if biological diversity or of any of its components, thereby maintaining their potential to meet the needs and aspirations of present and future generations (FAO, 1999).

Seaweeds

The standard will apply globally to all locations and scales of seaweed operations. The term “Seaweeds” includes a diversity of large marine macroalgae (Redmond, 2014). Note that marine plants other than seaweeds would not be considered within scope. Seaweeds differ from true plants because they lack true roots, stems and leaves. Instead, they have holdfasts, midribs (in some cases), and fronds, all of which differ in structure and function when compared to true plants. There are other related terms commonly used, although these are not equivalent:

- **Macroalgae**: large, multicellular algae easily observed without a microscope. Macroalgae can be classified into three distinct classes: brown algae (Phaeophyta), green algae (Chlorophyta), or red algae (Rhodophyta).
- **Algae**: autotrophic organisms with unprotected reproductive cells and exposed zygotes.
- **Kelp**: common name for large seaweeds (algae) belonging to the brown algae (Phaeophyceae) in the order Laminariales.

G1 Confirmation of scope

G1.3 Introduced species

The ICES Code of Practice on the Introductions and Transfers of Marine Organisms (ICES, 2004) defines an introduced species (= non-indigenous species, = exotic species) as any species transported intentionally or accidentally by a human-mediated vector into aquatic habitats outside its native range. Note: Secondary introductions can be transported by human-mediated or natural vectors.

Native range: Natural limits of geographical distribution of a species (modified after Zaitsev and Ozturk, 2001).

New introduction: The human-mediated movement of a species outside its present distribution.

Fisheries or farms that target **Introduced species** are out scope for the seaweed standard, unless they meet the two scope criteria below:

A. **History of the introduction.** The introduction occurred at least 20 years prior to the date the application is made for assessment against the Seaweed Standard.
B. **No further introductions.** There is no continuing introduction of the introduced species being considered for certification to the location.

Unlike the scope criteria in MSC FCR (v2.0) 7.4.4, species that meet both criteria A and B, would be considered within scope, even if:

- the introduction was deliberate.
- these species could be still eradicated from the location by known mechanisms. That is, the criteria "Irreversibility of the introduction in the new location" is not considered here.
- the species is not entirely self-sustaining in its new location (i.e. rely on farming activities).

### G1.4 Genetically modified organisms (GMOs) and transgenic species

The ICES Code of Practice on the Introductions and Transfers of Marine Organisms (ICES, 2004) defines a GMO as an *organism in which the genetic material has been altered anthropogenically by means of recombinant DNA technologies.*

This definition includes transgenic organisms, i.e., an organism bearing within its genome one or more copies of novel genetic constructs produced by recombinant DNA technology, but excludes chromosome manipulated organisms (i.e., polyploids), where the number of chromosomes has been changed through cell manipulation techniques (ICES, 2004). The farming of transgenic species may create additional issues regarding genetic impacts on wild populations. For this reason, transgenic species are excluded from the proposed standard.

### G2 Categories of harvesting and fishing activities

A review of the main seaweed harvesting and culture systems was carried out by MSC. The overall conclusion reached is that the degree of dependence on the wild stock; the degree of control of the environment; and the degree of control of a given species life history are the main aspects that define seaweed production systems. Based on these considerations, five major categories were proposed here as the basis for the definition of the standard for seaweeds, each of them having different implications in terms of indicators to be scored.
**G3  Defining the unit of assessment and unit of certification**

**G3.1** The **Unit of Assessment** (UoA) refers to the extent of the specific fishery that is to be assessed for compliance with the standard requirements and should include the target stock(s) harvested or species cultured.

In contrast, the **Unit of Certification** (UoC) is the unit entitled to receive an MSC or ASC certificate. Differences between the two arise in cases where certificate sharing options may be offered to producers that are included in the UoA, but are not initially part of the UoC.

The **target stock(s)** would be those seaweeds that are assessed under Principle 1 of the standard. Only the target stock(s) from the UoC would be eligible to carry the MSC ASC logo. It is required that harvesting of seaweeds is at a level that is sustainable for the whole stock.

**G3.4** However, the application of the “stock” concept may vary depending on the knowledge available and management complexity. Clear delineation of the stocks has proven to be difficult or even impossible to define for many benthic species and other species organized as metapopulations. This seems to be especially true for seaweed populations.

For this reason, it is proposed that the UoA can be defined based on **units of stocks**. That is, groups of seaweeds that can be treated and managed as an independent unit (e.g. “Unit of Management”), as long as the results of the assessment and the impact of management measures do not differ significantly from what they would be in the case of a truly independent stock.

The exploitation of coastal benthic species like bivalves, sea-urchins and seaweeds are frequently based on granting fishing licenses or use rights for harvesting in a particular region. This region is not necessarily (in fact, not in most cases) linked to the actual distribution of the stock, and can be as big as the whole (known) distribution of the stock, or as small as the intertidal area of a particular beach. In any case and due to the sessile condition and biology of seaweeds (e.g. ability to re-grow after harvesting, asexual reproduction, etc.) it seems that local populations can be sustainably managed, independently of other surrounding populations. Many examples can be found that this can be a successful approach.

**G3.5** In the case of farming activities, the definition of the UoA should focus on assessing the potential negative social and environmental issues related to aquaculture. Therefore, any scale from an individual farm, cluster of farms, water body or entire region could in principle be proposed as the UoA, as long as the full impacts are considered.

**G3.6** The assessment team should look for defining a potentially larger unit in relation to wider impacts. For example, even if the UoA is a single farm in one bay, the assessment team should still need to set the UoA considering the whole bay, or possibly other bays or nearby areas (and not just the current area of influence of the farm), allowing for future UoC expansions without undue difficulty.
G3.7 The client should be aware of the risk that his farm can be certified, but after some time the number of farms increases to a level which may further interfere with the surrounding environment, making a renewed determination of applicable scores necessary, and therefore face the prospect of having a suspended certificate or losing certification unless appropriate action is taken over the new, larger UoA. This is similar to the approach in MSC fisheries in FCR v2.0.

G7 Scoring the fishery

The performance of the harvesting system or farm is scored against a series of Performance Indicators (PIs).

Checklist

G7.1 The requirement for using each of the performance indicators will mostly depend on the category of production system considered. Besides this, some PIs should not be scored in cases where the impact is not occurring or is negligible because of the particular circumstances of the activity (e.g. the target is not an introduced species, there is no translocation, there is no contact with the marine environment, there is no impact on any other species, there are no water-based structures or substantial gear at sea).

For this reason, a check list and criteria is presented in showing the Performance Indicators to be scored in each of the five production system categories. At the beginning of the assessment, the team should complete this check list and use the criteria presented in Appendix I to determine whether or not each PI needs to be scored.

G7.2b Translocation is the human-mediated movement of living organisms from one area, with release in another. Translocations may move living organisms from the wild or from captive origins. Translocations can be accidental (e.g. stowaways) or intentional. Intentional translocations can address a variety of motivations, including for reducing population size, for welfare, political, commercial or recreational interests, or for conservation objectives (IUCN, 2012). Unlike introduced Species, and for the purpose of these requirements, translocation does not include the transfer of species to a production area from outside the distribution of their natural range. Translocation of species are therefore considered within scope.

Inadequately managed translocations of seaweeds between different areas may have both genetic and other impacts that need to be assessed (e.g., the spread of diseases between areas, accidental species introductions, etc.) (MSC, 2014).

Translocation of seaweeds should ensure that farming activities maintain the diversity, structure and function of the ecosystem on which they depend while minimizing any adverse effects that are caused. Specific Performance Indicators (PIs) have been developed to determine the extent of movement within a range that can be considered to have acceptably low risks. Related performance assessment will require the identification of the ‘natural production area’ or genetic range of a stock.

The extent of translocation must be considered to ensure that the farming activity predominantly utilize stocks or populations that are native to the natural production area from which the fishery’s catch
G7.6 Each performance indicator is composed of one or more scoring issues, which are the single parts of the assessment tree that need to be assessed and scored. Seventy-one Scoring Issues have been defined. Each scoring issue includes scoring guideposts (levels) that the assessment team will have to assess, at one or both of the following levels: the minimum level (equivalent to the current MSC SG60), and the target level (=MSC SG80). ▲

Guidance for Performance Indicators and Scoring Issues

**Principle 1 Sustainable wild populations ▲**

Fisheries management should promote the maintenance of the quality, diversity and availability of fishery resources in sufficient quantities for present and future generations in the context of food security, poverty alleviation and sustainable development. Management measures should not only ensure the conservation of target species but also of species belonging to the same ecosystem or associated with or dependent upon the target species (FAO, 1995).

**G PI 1.1 Stock Status ▲**

Assessment teams should determine, based on the information available, whether the “stock under consideration” is not overharvested, and is maintained at a level which promotes the objective of optimal utilization and maintains its availability for present and future generations, taking into account that longer term changes in productivity can occur due to natural variability and/or impacts other than fishing (modified from FAO) (FAO, 2009).

**Overharvesting** can be defined as the harvesting level higher than the level that results, in the long term, in the stock being at maximum sustainable yield (modified from current "overfishing" interpretation under the MSC FCR 2.0).

The knowledge of standing stocks and the location of seaweed beds suitable for harvesting are a prerequisite for developing a management strategy (Modified from Werner, 2004).

The term **depleted** in the context of this standard, refers to cases where biomass drops well below target levels. These levels are those which promote the objective of optimal utilization and maintains its availability for present and future generations, taking into account that longer term changes in productivity can occur due to natural variability and/or impacts other than fishing, in line with the interpretation of FAO (FAO, 1995).
MSY approach

The stock status PI is scored to reflect management behaviour that increases the probability that exploited biomass fluctuates around the MSY target.

The MSY can be defined as *the highest theoretical equilibrium yield that can be continuously taken (on average) from a stock under existing (average) environmental conditions without affecting significantly the reproduction process.*

Directly measurable (empirical) proxies or surrogates for biomass and associated empirical harvest strategies, can be used where they are expected to achieve performance consistent with MSY or a similar highly productive level (Starr et al 1997, Prince et al 2011 in MSC FCR 2.0).

Where information is not available on the stock status relative to MSY levels, proxy indicators and reference points may be used to score PI stock status. Where proxy indicators and reference points are used to score PI stock status, the assessment team shall justify their use as reasonable proxies of stock biomass for the MSY.

However, although management of some seaweed fisheries can be based on the MSY concept (e.g. West coast of South Africa), this approach seems to be difficult to apply or inappropriate in most cases, at least in those aspects related to the use and definition of appropriate target and limit reference points. Some studies suggest that equal to or more important than the amount of seaweed harvested, are the harvesting method and strategy (taking the whole plant or a part of it, which part of the plant is taken, when it is taken, the proportion of plants taken, the distance left between seaweeds after harvesting, harvesting frequency (e.g. rotating every 5 years), limitation of depth of harvesting, etc.), other external factors such as the abundance of seaweed grazers (e.g. sea-urchin), or local environmental conditions.

RBF approach

There are many ways in which state and trends in stocks may be evaluated, that fall short of the highly quantitative and data-demanding approaches to stock assessment that are often used for large scale fisheries in developed countries. Use of less elaborate methods for stock assessment should not preclude fisheries from possible certification for ecolabelling. However, it should be noted that, to the extent that the application of such methods results in greater uncertainty about the state of the “stock under consideration”, more precautionary approaches to managing fisheries on such resources will be required which may necessitate lower levels of utilization of the resource (FAO, 2009).

In the absence of proper limit and references points (which would be the case in most situations in seaweed fisheries), a modification of the MSC RBF for assessing stock status of seaweed species could be appropriate. For example, based on information available and discussion with stakeholders, to determine whether there is: “Full exploitation rate but long-term recruitment dynamics not adversely damaged” (RBF Consequence Analysis (CA) score = 60), or “Possible detectable change in size/growth rate but minimal impact on population size and none on dynamics” (CA = 80).

[A PRODUCTIVITY SUSCEPTIBILITY ANALYSIS (PSA) COULD ALSO BE DEVELOPED TO ENSURE CONSISTENCY OF THE RBF BUT NECESSARY ATTRIBUTES HAVE NOT BEEN DEVELOPED YET, AND WOULD REQUIRE CALIBRATION BEFORE BEING IMPLEMENTED].
G PI 1.2 Harvest strategy ▲

Users of living aquatic resources should conserve aquatic ecosystems. The right to fish carries with it the obligation to do so in a responsible manner so as to ensure effective conservation and management of the living aquatic resources. FAO CCRF 6.1

Management decisions for fisheries should be based on the best scientific evidence available, also taking into account traditional knowledge of the resources and their habitat, as well as relevant environmental, economic and social factors. FAO CCRF 6.4

FAO CCRF 9.1.2 States should promote responsible development and management of aquaculture, including an advance evaluation of the effects of aquaculture development on genetic diversity and ecosystem integrity, based on the best available scientific information. (FAO, 1995)

Seaweed species might differ in various biological aspects (e.g. growth, longevity, habitat forming aspects). They can also differ in stock-forming biomass. Therefore, resources of each species should be managed differently, especially with respect to the application of fallow periods. (Werner, 2004)

The management measures should include or take into account the total harvesting of seaweeds from all sources. Management targets are consistent with achieving maximum sustainable yield (MSY) (or a suitable proxy) on average, or a lesser harvesting level if that is optimal in the circumstances of the fishery (e.g. multispecies fisheries) or to avoid severe adverse impacts on dependent predators. The management system should specify limits or directions in key performance indicators, consistent with avoiding impacts that are likely to be irreversible or very slowly reversible, and specify the actions to be taken if the limits are approached or the desired directions are not achieved. GEFMCF 29.2bis

In assessing the robustness and precautionary of the harvest strategy for seaweeds the assessment team should assess whether the measures in place consider:

- the biology of the species (e.g. growth, longevity, habitat forming aspects, sexual or asexual reproduction abilities)
- the time required for regeneration of seaweeds, especially with respect to the application of fallow periods.
- potential differences in plant growth (length) and age distribution of seaweed population at the different sites along the coast (it could be found, for example, that when increasing latitude, the growth is slower and average plant age in undisturbed seaweed beds is higher (Sjoetun et al., 1993; Christie et al, 1998) in (Werner, 2004).

In assessing the whether there are well-defined and effective harvest control rules (HCRs) the assessment team should assess the existence of, for example (Werner, 2004):

- A percentage of standing stock (assessed biomass) allowed to be harvested per year specific to the species (e.g. in Norway, 15 - 20% of the standing stock of L. hyperborea is harvested annually; in France about 30% of total biomass of L. digitata is removed). The percentages should take into consideration that effects of harvesting a high percentage of standing stock are certainly more severe for a slow-growing, long-lived species than for a faster growing species. As a precautionary measure it would be advisable to allow not more than 10 - 15% of total biomass to
be harvested per annum. If quotas are introduced, detailed figures of the standing stock are essential, as well as measures to control the compliance with quotas.

- Provision from the fisheries administration for reducing the initial harvest removal amount to less than the formal percentage set after considering environmental factors (e.g., ice scour, natural loss) and the long-term health and ecosystem function of rockweed in a sector; or reduce the originally approved harvest amount at any time to preserve the viability and ecosystem function of seaweed stands in a sector.

- A minimum cutting height (e.g. the 16”), allowing sufficient biomass remaining to preserve the stature and ecosystem function of rockweed stands: biomass regeneration in a few years; sufficient canopy to prevent desiccation and regulate temperature of organisms inhabiting rockweed beds at low tide; and provide refuge from predators for organisms inhabiting beds at high tide.

- Formal fallow periods and the order in which fields are harvested based on the biology of the species, harvesting gear and site (e.g. latitude).

- Requirement for a harvesting licence. It can be issued for up to a number of years [5 years] but only if the licensed area and neighbouring areas can withstand the harvesting impact without negative effects on the ecosystem.

- Allowance for harvesting licenses to be closed before the licence expires if unexpected consequences, caused by harvesting arise. A licence can also be revoked with a permanent ban.

- Coast wide sector management to promote accountability, incentivize responsible harvest, simplify enforcement, and collect long-term harvest data to inform future management decisions.

- Regulations relative to the harvesting equipment (e.g. technical specifications).

- Requirement to register harvesters and harvesting boats.

- Requirement to inform in advance (e.g. 1 month before harvesting) the fishery administration in which area will be harvested.

- Requirement to write a harvesting diary stating dates, sites and quantities harvested. The harvested quantity per year has to be reported to the fishery administration.

- Existence of methods of controlling the landings of seaweeds

- Requirement to Sector holders (in case that this figure exists) to submit a current list of harvesters to the Department prior to harvest, and to notify the fishery administration any changes to the harvester list prior to any new harvesters collecting seaweed.

- Requirement to Sector holders (in case that this figure exists) to submit relevant information: amount removed the previous year (in addition to required landings); noteworthy information relevant to stature, long-term sustainability, and ecosystem function of rockweed stands in the sector (e.g., ice scour or natural loss); General description of where harvesting occurred in the previous year.
Monitoring of harvested areas combined with research programmes as means of managing the resource sustainably.

**Requirements to score PIs 1.1 and 1.2 ▲**

Harvesting and farming activities involving regular supply from the wild stock (categories A, Bi and Ci) may impact the parent stock. Therefore, source locations of either spores, entire adults or fragments of seaweeds should be normally required to be scored against the stock status and harvest strategy PIs to ensure that the exploitation of the source seed resource is properly managed. It will be necessary, in any case, for assessment teams to examine each situation and provide rationale and evidence explaining the level of risk if it exists.

If there is evidence that the activity does not negatively impacts the parent stock, the assessment team should not to score the PIs related to stock status and their management (categories Bii and Cii). The assessment team should include a sound rationale for this decision in the notification report form and assessment reports.

**Requirements to score PI 1.3 ▲**

Translocations of native species among different geographic areas can pose risks to the genetic diversity of wild populations.

While there is probably a low risk for translocations of seaweeds to affect the genetic integrity of wild populations (depending on the scale of the translocation), it is still necessary for assessment teams to examine each situation and provide rationale and evidence explaining the level of risk if it exists. This will be achieved by scoring the Genetic outcome PI.

In addition to potentially diluting the genetic diversity of proximate wild populations, hatchery-based seaweed aquaculture may also affect the fitness or adaptability of natural populations (modified form ASC). This is brought about by intentional or unintentional artificial selection (“domestication” selection) in the hatchery environment.

Cultivation of seaweeds entirely in inland-based systems is expected to have negligible discernible impact on the genetic structure of the population. Therefore, this PI would not be normally scored in categories Ci and Cii. It is however necessary, in any case, for assessment teams to examine each situation and provide rationale and evidence explaining the level of risk if it exists (e.g. there is no contact with marine environment).
Principle 2 Environmental impact of seaweed harvesting.

There are objectives, and as necessary, management measures to address pertinent aspects of the ecosystem effects of fishing. FAO GEFMCF 28.2. (FAO, 2009)

G PI 2.1 Habitat

Habitat can be defined as *the chemical and bio-physical environment, including biogenic structures, where fishing takes place.*

All critical seaweed habitats in marine and fresh water ecosystems, such as wetlands, mangroves, reefs, lagoons, nursery and spawning areas, should be protected and rehabilitated as far as possible and where necessary. Particular effort should be made to protect such habitats from destruction, degradation, pollution and other significant impacts resulting from human activities that threaten the health and viability of the fishery resources. FAO CCRF 6.

In some occasions, harvesting and farming of seaweeds occur in areas with critical habitat essential for endangered species survival. In order to preserve local biodiversity, it is important that the assessment team take into account potential risks that harvesting and farming operation pose to critical habitat

An assessment should look not only at the impact on the habitat but also the habitat’s delivery of ecosystem services. For instance, if only a part of the habitat is affected by fishing but this part delivers the greatest ecosystem services, then this should be taken into account in the assessment.

G PI 2.2 Ecosystem

An ecosystem is a very complex entity with many interactive components, and can contain more than one habitats. The ecosystem is defined in FAO as “a system of complex interactions of populations between themselves and with their environment” or as “the joint functioning and interaction of these two compartments (populations and environment) in a functional unit of variable size” (Garcia, Zerbi, Aliaume, Do Chi, & Lasserre, 2003). Therefore, and unlike the more physical aspects found in the definition of habitat, the ecosystem concept is more focused on the interaction process between the populations and their environment.

G PI 2.3 ETP

If there is no applicable national legislation or binding international agreement, scoring issue (a) in PI 2.3.1 should not be scored.

G PI 2.7 Waste management and pollution control

Seaweed harvesters and farmers should be responsible for waste disposal and protect against harmful chemical and hydrocarbon spills. Farming operations should have sufficient prevention and response plans in place and farm employees should have the training necessary to properly dispose of waste, and prevent and manage chemical and hydrocarbon spills.
It is reasonable to expect harvest and seaweed farming to have proper waste management and pollution control in place in order to minimize the impact that operations have on the environment.

**G PI 2.8 Energy efficiency ▲**

Climate change and the impacts associated with anthropogenic CO2 emissions are generally considered to represent the biggest environmental challenge facing current and future generations. Because of this, energy consumption used in food production has become a source of major public concern. Therefore, the requirements state that harvesting and farm energy consumption should be monitored on a continual basis and that growers should develop means to improve efficiency and reduce consumption of energy sources, particularly those that are limited or carbon-based.

On-farm energy consumption should be monitored on a continual basis and growers should develop means to improve efficiency and reduce consumption of energy sources, particularly those that are limited or carbon-based.

**G PI 2.9 Disease and pest management practice ▲**

Some of the most challenging issues faced by farmers involve the control and management of diseases, predators, pests and fouling organisms. Since any action will have some measurable impact, it is important for these requirements to ensure that the impacts are localized, temporary and reversible. It also is important that the actions do not cause harm to endangered species or have a permanent impact on critical habitats (modified from ASC).

**G PI 2.10 Translocation Outcome ▲**

For the purpose of these requirements, translocation does not include the transfer of species to a production area from outside the distribution of their natural range. The latter should be considered as an introduction of a species.

The issue of translocation probably may arise with respect to sourcing of wild seed to farms. An environmental requirement for aquaculture operations that rely upon translocations of wild seed necessitates an assessment of the potential risk for overharvesting the reproductive sustainability of the wild source stock. Therefore, if growers are transporting seed or spat collected from other regions or harvesting excessive amounts of seed locally, an assessment is necessary to determine whether or not the manner in which the wild seed is collected for grow-out adversely affects recruitment or demography of local seaweed populations (ASC).

**G PI 2.11 Translocation management ▲**

The assessment team should check that there is documentation of compliance with established protocol or evidence of following appropriate best management practices for preventing and managing disease and pest introductions with seed and/or farm equipment (ASC). A valid documented risk assessment or equivalent environmental impact assessment exists to demonstrate that the translocation activity is highly unlikely to introduce diseases, pests, pathogens, or non-native species into the surrounding ecosystem.
Requirements to score PI 2.10 and 2.11 ▲

Translocation indicators shall be only scored in cases where translocation is occurring, regardless the type of the farming category considered. However, they should not be scored in land-based systems (C), if there is no contact, or this is considered negligible, with marine environment.

G PI 2.12 Introduced species ▲

All introductions and transfers of marine organisms carry risks associated with target and non-target species (including disease agents). Once established, introduced species can spread from foci of introductions and have undesirable ecological, genetic, economic, and human health impacts. (CPIT ICES, 2004)

Even species introduced intentionally into closed systems can be released accidentally. Thus, introductions can result whenever live organisms are moved, regardless of the original intent. As a result, a risk of introduction and subsequent impacts exists with any movement and should be considered explicitly (ICES, 2004).

Strategies in place CABs should include mechanisms against this additional scoring issue to be:

i. Setting target reference points at levels that allow for recovery of species impacted by the introduction.

ii. Containment measures such as fishing down at the boundaries of the stock to prevent further spread.

iii. Protection and/or creation of faunal refugia.

iv. Provisions in legislation to prohibit further introductions of any other alien species.

v. Other relevant mechanisms.
Principle 3 Effective management. ▲

This principle is intended to ensure that those aiming to be certified against the standard meet their legal obligations as a baseline requirement. Adhering to the law will ensure that producers meet the most basic environmental and social requirements and will serve as a platform on which the effectiveness of the requirements will be based.

Harvesting and farming operations must, at a minimum, adhere to national and local laws. The Seaweed Standard may develop sustainability requirements beyond those required by law, but the baseline requirement for any aquaculture operation must be compliance with the legal obligations of the producing country. Laws that compel a farmer to take a certain action take precedent over voluntary requirements.

[THE REQUIREMENTS IN PRINCIPLE 3 AND PRINCIPLE 4 MIGHT REQUIRE FURTHER DEVELOPMENT IN ORDER TO CONSIDER THE PARTICULARITIES OF SMALL-SCALE FISHERIES IN DEVELOPING COUNTRIES WHICH MIGHT NOT HAVE A NATIONAL LEGAL SYSTEM FOR SEAWEEDS, BUT STILL HAVE A COMMUNITY-BASED SYSTEM AND THIS COULD BE STILL CONSIDERED AS ADEQUATE TO ENSURE A RESPONSIBLE AND SUSTAINABLE HARVESTING AND FARMING OF SEAWEEDS]

Principle 4 Social responsibility. ▲

Harvesting and farming operations should be undertaken in a socially responsible manner that ensures the operations benefit workers and local communities. The labour rights of individuals working on seaweed farms are important and working conditions should ensure that employees are treated and paid fairly. Appropriate farm conditions include no child labour, no forced labour and no discrimination. Complaint procedures and protection for whistle blowers are critical to achieving and maintaining fair and equitable working conditions. Socially responsible seaweed farming should ensure worker health and welfare through safe and hygienic working conditions with relevant training available for workers and managers.

Social requirements of this standard shall be audited by an individual who is a lead assessment team in conformity with SAAS Procedure 200 section 3.1. Interviews with farm workers and others are a key part of the social audit in addition to assessment team observations and documentary evidence.

An ‘incidence’ can be considered as a discovery during the audit of an occurrence at any stage from the day of the audit previously for the duration of the first complete cycle.
G PI 4.1 Child labour ▲

The organisation needs to have a policy in place to ensure against child labour and that protects young workers. The policy should include the actions that an organisation will take in the case that child labour or young worker abuse is discovered during the audit i.e. that they are protected. To meet an unconditional pass, the organisation is expected to have a system that monitors the policy and its implementation. The policy should cover risks of child labour and that could occur to young workers for example by having a system exists to monitor hours and conditions of young workers and light work by children. Young workers have no conflicts between work and schooling; do not spend more than 10 hours/day on transportation time, school and work; and do not perform hazardous work.

G PI 4.2 Forced, bonded or compulsory labour ▲

The organisation is expected to assess the potential ways that forced, bonded or compulsory labour could take place and ensure against it occurring. Any evidence found of forced labour occurring would mean that the organisation could not be certified (ASC).

Forced labour is all work or service that is extracted from any person under the menace of any penalty for which said person has not offered himself or herself voluntarily or for which such work or service is demanded as a repayment of debt.

Penalty can imply monetary sanctions and physical punishment, such as loss of rights and privileges or restriction of movement (or withholding of identity documents).

Bonded labour is when a person is forced by the employer or creditor to work to repay a financial debt to the crediting agency.

Contracts should be clearly stated and understood by employees, no ‘pay to work’ schemes through labour contractors or training credit programs. Employees must be free to leave workplace and manage their own time. The organisation does not withhold employee’s original identity papers and shall not withhold any part of workers’ salaries, benefits, property or documents in order to oblige them to continue working for employer. Workers are not obligated to stay in job to repay debt (ASC).

G PI 4.3 Discrimination ▲

Discrimination is any distinction, exclusion or preference, which has the effect of nullifying or impairing equality of opportunity or treatment. Not all distinction, exclusion or preference constitutes discrimination. For instance, a merit or performance-based pay increase or bonus is not by itself discriminatory. Positive discrimination in favour of people from certain underrepresented groups may be legal in some countries.

G PI 4.4 Health, safety and insurance ▲

“PPE” or “Personal Protective Equipment” refers to protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer’s body from injury or infection.
G PI 4.5 Fair and decent wages ▲

“Living Wage” is the remuneration received for a standard work week by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transport, clothing, and other essential needs including provision for unexpected events.

G PI 4.6 Freedom of association and collective bargaining ▲

A Collective bargaining agreement is a contract specifying the terms and conditions for work, negotiated between an organisation (e.g. employer) or group of employers and one or more worker organisation(s).

G PI 4.9 Environmental training ▲

The final measure to ensure that farming operations are not adversely affecting the ecological integrity of the area in which they are located is to make certain that farmers have the appropriate level of environmental awareness. This can be done by requiring to have evidence of environmental training/education or to be in compliance with a set of environmental codes of practices and/or management plans.

Principle 5 Community relations and interaction. ▲

Seaweed harvesting and farming often occurs in close proximity to communities that may be affected by these activities.

Conflicts may occur between producers and surrounding communities. It is the harvester/farmer’s responsibility to minimize potential impacts by maintaining clean and orderly harvesting and farm sites that do not impede navigation.

Conflicts that arise between producers and surrounding communities shall be addressed through a verifiable conflict resolution policy in which complaints from communities are responded to and addressed in a timely manner.

Community rights and interactions with farmers, groups of farmers and corporate farms are complex and often dynamic. The intent of these requirements is to enable communities to have a clear and transparent way of interacting with producers and for producers to interact with communities in a positive manner while responsibly maintaining their harvesting farm sites.

References


