Aquaculture Stewardship Council and Marine Stewardship Council

ASC-MSC
Seaweed (Algae) Standard

Version 1.01, 30 April, 2018

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The official language of this standard is English. The definitive version is maintained at www.asc-aqua.org/seaweed-standard. Any discrepancy between copies, versions or translations shall be resolved by reference to the definitive English version.

The ASC and the MSC prohibit any modification of part or all the contents in any form.

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Versions issued

Version no.	Date	Description of amendment
1.0	22 November 2017	First version issued for application by CABs.
1.01	30 April 2018	Minor revisions in alignment with release of the ASC-MSC Seaweed (Algae) Risk Based Framework v1.0.

Justification for the Standard

The Aquaculture Stewardship Council (ASC) and the Marine Stewardship Council (MSC) are independent, non-profit organisations that are globally recognised as the world's most credible and science-based standards for sustainable and responsible seafood. The ASC sets standards for responsible aquaculture and the MSC sets standards for the sustainable capture of wild seafood. The ASC and the MSC certification programs share a common heritage and vision that global seafood supplies should be sustainable, responsibly managed, and supported by secure supply chains.

The joint vision and mission of the ASC and the MSC in developing this standard is to contribute to the health of the world's aquatic ecosystems by recognising, and rewarding through certification, environmentally sustainable and socially responsible seaweed harvesting and farming practices.

Independent third-party certification by accredited Conformity Assessment Bodies (CABs)

The science and metric based ASC-MSC Seaweed (Algae) Standard ("the Standard" thereinafter) for the sustainable farming and harvesting of wild populations of algae offers a way to confirm sustainability, using a credible, independent third-party assessment process. It means that sustainable and responsible harvesting of wild populations and farming can be recognised and rewarded in the marketplace, and gives an assurance to consumers that algae (or by-products derived from algae) 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.

Standard development process

The ASC and the MSC have developed a joint standard to certify sustainable and responsible seaweed production units under a single certification system. In accordance with the ISEAL Standard Setting Code, the Standard was developed following a participatory process. A joint governance body, the Seaweed Standard Committee, comprising representatives from the ASC and MSC Technical Advisory Groups, Boards, and additional seaweed industry and NGO stakeholders was formed to guide the standard's development. Joint procedures were developed to ensure a robust, credible process. Notably, stakeholder workshops were held in Indonesia, Japan and China. Two 60-day online consultations were held to seek views on drafts of the Standard and associated assessment process. These were supported by webinars, meetings and local outreach to the seaweed industry and affected stakeholders. Academics provided detailed technical input and a workshop was held with Conformity Assessment Bodies (CABs) in London.

Implementation

The Seaweed (Algae) Standard v1.0 and the Seaweed (Algae) Certification and Accreditation Requirements v1.0 were approved by the ASC Supervisory Board and the MSC Board of Trustees in July-August 2017. The Standard was published 22 November 2017 and is effective from 1 March 2018. Seaweed production units who wish to enter assessment against the Standard can apply from 1 March 2018, or earlier subject to approval by the ASC-MSC.

Standard review

The Standard will be reviewed 12 months after the effective date to evaluate the implementation of the program and incorporate outcomes of planned program improvements. Certificate holders will be required to comply with the most recent version of the standard at recertification (i.e. three years after first certification).

Subsequent reviews of the Standard will occur at least every five years to ensure they continue to be relevant and effective in meeting their stated objectives in accordance with the ISEAL Standard Setting Code.

The ASC-MSC welcomes comments on the Standard and Certification and Accreditation Requirements at any time. Comments will be incorporated into the next review process. Please submit comments by email to seaweedstandard@msc.org.

Introduction to this document

This document comprises of:

a. The ASC-MSC Seaweed (Algae) Standard, which is composed of five core principles, and

b. Guidance to the ASC-MSC Seaweed (Algae) Standard.

Guidance

Guidance has been produced to help CABs interpret the Standard. The headings and numbering in the guidance, when included, match those in the Standard exactly, with numbers prefaced with the letter “G” to indicate Guidance.

Where guidance is provided that generally relates to the subject of a major heading, or relates to the content of a specific clause, this icon ◙ appears at the end of the title or clause. The icons provide hyperlinks to the related guidance section.

Within the guidance, this icon ▲ provides a hyperlink back to the corresponding section or clause in the Standard.

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ASC-MSC Vocabulary – Normative

The vocabulary below defines concepts, terms, phrases and abbreviations used in the Standard and the CAR.

Term	Definition
Abuse	The intentional use of power, including verbal abuse, isolation, sexual or racial harassment, intimidation or threat of physical force.
Aquaculture operation	A (commercially managed) operation aimed at farming of aquatic organisms.
Alien species	A species, subspecies or lower taxon, introduced outside its natural past or present distribution, including any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce (CBD).
Basic needs wage	See living wage.
Beach-cast seaweed	Seaweed that has been washed up or stranded (cast) on the beach or other parts of the shoreline, including seaweed that is still drifting in the water at the front of the beach, but likely to be stranded in the near future.
Bonded labour	Refers to workers that have received loans from employers, where these loans are subject to unreasonable terms and conditions such as excessively high interest rates.
CAB	See Conformity Assessment Body.
CBD	Convention on Biological Diversity.
Certification	Procedure by which a third party gives written or equivalent assurance that a product, process or service conforms to specified requirements.
Child	Any person less than 15 years of age. A higher age would apply if the minimum age law stipulates a higher age for work or mandatory schooling. If, however, the local minimum age law is set at 14, in accordance with developing country exceptions under ILO Convention 138, lower age will apply.
Child labour	Any work by a child younger than the age specified in the definition of a child, except for light work as provided for by ILO Convention 138, Article 7.
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna.
Collective bargaining agreement	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.
Community	A group of people with possibly diverse characteristics who are linked by social ties, share common perspectives, and are joined by collective engagements within a geographically confined area. Includes all stakeholders of the resource such as neighbours and other users like fishermen.

Term	Definition
Comprehensive Strategy	A complete and tested strategy made up of linked monitoring, analyses, and management measures and responses.
Conflicts	Situations wherein one party perceives hindrance in legitimate interest as caused by the other party's actions or absence of actions. One party is the production unit owner or manager. The other party is either a surrounding community or group of stakeholders in the community. Conflicts, for the purpose of this standard, exclude complaints made by single individuals unless verified/supported by a community leader or community organisation. The production unit may not necessarily be at fault if conflicts arise, but they shall exercise due diligence to avoid any harm done to the legitimate interests of people in the surrounding community.
Conformity Assessment Body	Body that performs conformity assessment services and that can be the object of accreditation.
Consensus	General agreement, characterised by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process seeking to take into account the views of interested parties, particularly those directly affected, and to reconcile any conflicting arguments. NOTE: Consensus need not imply unanimity.
Consequence Spatial Analysis (CSA)	The Consequence Spatial Analysis (CSA) is a tool within the RBF (Risk Based Framework) and is a semi-quantitative approach to examine several consequences and spatial attributes to provide a relative measure of the risk of the UoA to the habitat. Each habitat (scoring element) is assigned its own CSA score.
CSA	See Consequence Spatial Analysis.
Cultivation	Cultivation implies some form of human intervention in the rearing process to enhance production, and should be taken to include strategies such as regular stocking, feeding and individual or corporate stock ownership.
Discrimination	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 under-represented groups may be legal in some countries.
Disciplinary practices	Disciplinary procedures make sure that a company's standards of conduct and performance at work are followed. They also provide a fair and humane method of dealing with workers who fail to meet these standards.
Due diligence	The effort made by an ordinarily prudent or reasonable party to avoid harm to another party. As applied in PI 5.2, the process of resolution is documented and meeting minutes are kept. Minutes include an agenda, the list of concerns raised, resolutions or agreements reached, a list of who shall take what action by when, and a list of participants. Local government and, if available, at least one civil society or customary organisation chosen by the community shall have access to the conflict resolution process and the documentation.

Term	Definition
Endangered, Threatened or Protected Species	Species recognised by national legislation and/or binding international agreements to which the jurisdictions controlling the production unit under assessment are party. Species listed under Appendix I of CITES shall be considered ETP species for the purposes of the assessment, unless it can be shown that the particular stock of the CITES listed species impacted by the production unit under assessment is not endangered.
ETP	See Endangered, Threatened or Protected Species.
False apprenticeship scheme	The practice of hiring workers under apprenticeship terms without stipulating terms of the apprenticeship and wages in the contract. It is a “false” apprenticeship if the purpose is to underpay people, avoid legal obligations or employ children.
Fair and decent wages	See living wage.
Production unit social impact assessment	An assessment carried out by the production unit into its impact on the surrounding community, affected stakeholders (e.g. fishermen, neighbours, or other resource users) or other group coming into contact with the production unit or its activities. The assessment should follow the guidance included in this document and in the case that the assessment is not transparent, is inaccurate or finds insufficient resolution to issues, then a p-SIA should be conducted.
Forced or compulsory labour	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.
Group Management Body	The person or group of people who manages and is responsible for the actions of the group.
Group members	Harvester/farmer operating one or several production sites and participating formally in a group for the purpose of applying for, obtaining and maintaining MSC-ASC certification as part of a Group.
Habitat	The chemical and bio-physical environment, including biogenic structures, where harvesting/farming takes place.
Habitat function	The range of services provided to an organism, including, but not limited to, mediating trophic interactions, reproduction, shelter, and feeding, and influencing the behaviour of organisms.
Habitat structure	The arrangement of physical and biogenic formations that support plant, algal and animal communities.
Harvest strategy	The combination of monitoring, stock assessment, harvest control rules and management actions, which may include a Management Procedure (MP) or an implicit MP and be tested by a Management Strategy Evaluation (MSE).
Harvesting	The collection of seaweed from the wild environment. The Standard uses the term “production unit” where applicable to cover both wild harvesting approaches and farming systems.

Term	Definition
Hazardous work	Work that, by its nature or the circumstances in which it is carried out, is likely to harm the health or safety of workers.
ILO	International Labour Organization.
Implemented successfully	There is objective evidence that the production unit is following the practice/s required by the measure or strategy, and that some expected consequences of that measure/s are seen in the performance of the production unit. It is not necessary to have evidence that the measure or strategy has resulted in benefits to the component being modified.
Incidence	When reliable corroborated evidence is established of the event taking place (as used in Principle 4 PIs).
ISEAL	International Social and Environmental Accreditation and Labelling.
IUCN	International Union for the Conservation of Nature.
Labour-only contracting arrangement	The practice of hiring workers without establishing a formal employment relationship for the purpose of avoiding payment of regular wages or the provision of legally required benefits, such as health and safety protection.
Light work	Work that is 1) not likely to be harmful to a child's health or development and 2) not likely to prejudice their attendance at school, participation in vocational orientation or training programs or diminish their capacity to benefit from instruction received.
Living wage	Consistent with the ISEAL Global Living Wage Coalition, 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.
Macroalgae	Macroscopic algae.
Management Procedure	The combination of pre-defined data, together with an algorithm to which such data are input to provide a value for a Total Allowable Catch (TAC) or effort control measure; this combination has been demonstrated, through simulation trials, to show robust performance in the presence of uncertainties. Additional rules may be included, for example to spread a TAC spatially to cater for uncertainty about stock structure.
Management Strategy Evaluation	Usually synonymous with MP approach; often used to describe the process of testing generic MPs or harvest strategies.
Maximum Sustainable Yield	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.
May	A permitted course of action, within the limits of the standard.
Measure	Actions or tools in place that either explicitly manage impacts on the component or indirectly contribute to management of the component

Term	Definition
	under assessment having been designed to manage impacts elsewhere.
Microalgae	Microscopic algae.
Minimum wage	The legal minimum wage set by law in the country.
MP	See Management Procedure.
MSE	See Management Strategy Evaluation.
MSY	See Maximum Sustainable Yield.
Native range	Natural limits of geographical distribution of a species (modified after (Zaitsev, 2001)).
Negligible	So small or unimportant as to be not worth considering; insignificant.
Introduction	The human-mediated movement of a species outside its present distribution.
Overharvesting	Harvesting higher than the level that results, in the long term, in the stock being at Maximum Sustainable Yield (MSY).
Partial strategy	A cohesive arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and an awareness of the need to change the measures should they cease to be effective. It may not have been designed to manage the impact on that component specifically.
Participatory Social Impact Assessment (p-SIA)	An assessment of positive and negative consequences and risks of a planned or ongoing project of a production unit (here: a farm, harvesting or farm development) undertaken in such a manner that all stakeholder groups have input into the process, results, and outcome of the assessment, and that steps taken and information gathered are openly accessible to all. A p-SIA should only be conducted if the production unit social impact assessment determines that it is necessary.
Penalty	Penalty can imply monetary sanctions and physical punishment, such as loss of rights and privileges or restriction of movement (or withholding of identity documents). As used in PI 5.2.
Performance Indicator	The level in the assessment tree at which the performance of the production unit is scored by the team (sub-divided into scoring issues in some PIs).
PI	See Performance Indicator.
PPE (Personal Protective Equipment)	Protective clothing, helmets, goggles, or other garments or equipment designed to protect the wearer's body from injury or infection.
Premium rate	A rate of pay higher than the regular work rate. Must comply with national laws, regulations and/or industry standards.
Principle	The highest level in the assessment tree used as the basis for defining a well-managed and sustainable production unit.

Term	Definition
Production unit	The harvesting unit or farm from which the seaweed is produced (the extent of the production unit is defined explicitly as the UoA).
Production system	The type of gear or production methodology employed in the production unit.
p-SIA	See Participatory Social Impact Assessment.
Remediation of child labour	All support and actions necessary to ensure the safety, health, education and development of children who have been subjected to child labour, as defined above, and whose work has been terminated.
Risk Based Framework	A framework of assessment tools for scoring the "outcome" Performance Indicators in cases where insufficient information is available to score the UoA using the default Scoring system.
RBF	See Risk Based Framework.
Scoring element	The different parts of a Performance Indicator, where more than one part exists and covering related but different topics (e.g. different species scored in Principle 2).
Seagrass	Flowering plants (angiosperms) which grow in marine, fully saline environments. Not to be confused with seaweed.
Seaweed	The term seaweed should be interpreted as equivalent to "algae", including both macroalgae (i.e. large, multicellular algae easily observed without a microscope, such as kelps, rockweeds, wakame, kombu, nori, etc.) and, by extension, microalgae (i.e. microscopic algae, often unicellular).
Seed	The term seed should be interpreted as both the vegetative propagules (cuttings) and spores, or gametes and zygotes, which can be used as planting materials. Stocks of seeds used in seaweed production units may come from natural stocks or from cultivation.
Serious or irreversible harm to "structure and function"	Serious or irreversible harm to "structure and function" means changes caused by the UoA that fundamentally alter the capacity of the habitat or ecosystem to maintain its structure and function. For the habitat component, this is the reduction in habitat structure, biological diversity, abundance and function such that the habitat would be unable to recover to at least 80% of its unimpacted structure, biological diversity and function within five to 20 years, if harvesting/farming were to cease entirely. For the ecosystem component, this is the reduction of key features most crucial to maintaining the integrity of its structure and functions and ensuring that ecosystem resilience and productivity is not adversely impacted. This includes, but is not limited to, permanent changes in the biological diversity of the ecological community and the ecosystem's capacity to deliver ecosystem services.
Shall	A requirement that is always expected to be followed.
Should	A requirement that shall be followed unless there are reasons not to. If so, the justification for not following the requirement shall be recorded.

Term	Definition
Site	A discrete physical location.
Species	In biology, a species is the basic unit of biological classification and a taxonomic rank. The Standard does not, however, distinguish between different strains, varieties or any other lower level taxonomic rank of the same species, considering all of them as equivalent, in particular when applying requirements related to the introduction or translocation of species.
Sporeling	A sporeling is a young plant, alga or fungus produced by a germinated spore, similar to a seedling derived from a germinated seed. They occur in algae, fungi, lichens, bryophytes and seedless vascular plants.
Standard	A document established by consensus and approved by a recognised body that provides for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context.
Stock Assessment	An integrated analysis of information to estimate the status and trends of a population against benchmarks such as reference points.
Stock Region	A textual description of the geographic area within which the harvesting is taking place. When harvesting natural populations of seaweeds, the smaller well-defined area, water body/bodies or site/s that is/are managed as an independent unit.
Strategy	A cohesive and strategic arrangement which may comprise one or more measures, an understanding of how it/they work to achieve an outcome and which should be designed to manage impact on that component specifically. A strategy needs to be appropriate to the scale, intensity and cultural context of the harvesting/farming system and should contain mechanisms for the modification of harvesting/farming practices in the light of the identification of unacceptable impacts.
Translocation	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.
Unit of Assessment (UoA)	The extent of the specific production unit/s that is/are to be assessed for compliance with the Standard requirements.
Unit of Certification (UoC)	The unit entitled to receive an ASC/MSC certificate.
Water-based structures	Structures that are part of production unit and/or production unit equipment used in water or in contact with water, situated in or around the production unit (e.g. rafts, nets, boats, buoys, etc.).
Worker	Non-management personnel carrying out work or labour.
Young worker	Any worker older than the age recognised as a child and under the age of 18.

1 Wild harvest and farming certification

1.1 For the purpose of the Standard, the term “seaweed” shall be considered as equivalent to “algae”, and includes:

a. Both marine and fresh water algae

b. Both macroalgae and microalgae

1.1.1 The term “harvesting” shall be considered as equivalent to “harvesting of wild populations”.

1.1.2 The term “production unit” shall be interpreted as either the harvesting unit or farm from which the seaweeds are produced.

1.2 The Standard and requirements have been developed to meet global best practice guidelines for certification and labelling programs, as defined by the ISEAL Code of Conduct for Standard Setting (ISEAL, 2014).

1.3 The Standard comprises five core principles:

Principle 1: Sustainable wild populations

Harvesting and farming of seaweeds are conducted in a manner that maintains the productive capacity of the wild seaweed populations and their sustainable use.

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 environmentally sustainable and socially responsible.

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 minimises negative impacts on neighbours, respects rights and cultures, and benefits communities.

2 Scope criteria

2.1 Harvesting or farming activities are only eligible for certification if the target species is a seaweed.

2.2 The Standard applies globally to all locations and scales of operations, including both harvesting of wild stocks and production from aquaculture systems.

2.3 The Standard applies to seaweed production units only. Other production units in scope for assessment under the existing ASC or MSC standards are in no way affected by the Seaweed Standard.

2.4 Harvesting or farming activities involving the introduction of alien (i.e. non-native) species are not eligible for certification, unless:

2.4.1 The introduction occurred at least 20 years prior to the date the application is made for assessment against the Seaweed Standard, or

2.4.2 The alien species is cultured in on-land facilities that are completely separated from the aquatic environment.

2.5 Organisations seeking certification shall have been in operation for at least 12 months, or one harvest cycle, whichever is less.

2.6 Organisations seeking certification shall have available records of performance data covering the periods of time specified in the Standard.

2.7 Harvesting or farming activities which use mutagenic, carcinogenic or teratogenic pesticides, or any other chemicals that persist as toxins in the marine environment or on the farm or farmed seaweeds, are not eligible for certification.

3 Unit of Assessment and Unit of Certification

Unit of Assessment

3.1 The Unit of Assessment ("UoA" thereinafter) defines the extent of the specific production unit that is to be assessed for compliance with the Standard.

3.2 The definition of the UoA shall include:

a. Target species. The target species harvested and/or cultured.

b. Production system. The seaweed harvesting and/or culture system/s.

c. Stock region. When harvesting natural populations of seaweeds (categories A, Bi and Ci), the smaller well-defined area, water body/bodies or site/s that is managed as an independent unit.

d. Receiving water body. A precise geographical delimitation of the water body or bodies that may be impacted by the activity.

e. Client. The person/s, entity or entities harvesting and/or culturing the target stock or species.

f. Facilities. Any at-sea or land-based facilities associated with the culturing/harvesting activities.

Unit of Certification (UoC)

3.3 The Unit of Certification ("UoC" thereinafter) is the unit entitled to receive an ASC-MSC certificate.

3.4 In addition to the information required in 3.2, the definition of the UoC shall also include any other client group members to be covered by the certificate.

Scale and cumulative impacts

3.5 The scale of operations that may be considered a UoA can range from an individual production unit and its surrounding environment, to a group of production units in a water body or an entire region, provided that the potential environmental impacts of the activity are fully and adequately considered.

3.6 The continuation of the production unit in the certification program depends on how the activity (including other farms) develops in a particular region.

3.7 The impacts of the production unit/s on the target stock/s selected for inclusion in the UoA shall be assessed under Principle 1.

3.7.1 All sources of seed coming from natural stocks used in the production unit shall be assessed under Principle 1.

3.8 The impacts of the production unit/s on the structure, productivity, function and diversity of the ecosystem, including habitat and associated dependent and ecologically related species, shall be assessed under Principle 2.

3.8.1 When assessing the impacts on habitats, ecosystems and species in Principle 2 (Performance Indicators 2.1–2.4), the overall impact produced by both the proposed UoA and any other previously certified ASC-MSC seaweed UoAs impacting the same habitat, ecosystem or species shall be considered.

3.8.2 When assessing the impacts of waste and pollution and the management of diseases and pests in Principle 2 (Performance Indicators 2.5–2.6), the impact of the proposed UoA and any other previously certified ASC-MSC seaweed UoAs impacting the same "receiving water body" shall be considered.

3.8.3 When assessing energy efficiency and the management of translocation and introduced alien seaweed species (Performance Indicators 2.7–2.9), only the proposed UoA shall be considered.

3.9 The institutional and operational framework on which the production unit/s operates shall be assessed under Principle 3.

3.10 Social and community requirements for the person/s, entity or entities that are part of the UoA shall be assessed under Principles 4 and 5.

3.11 The assessment shall only consider those environmental, social, and community impacts which are directly related to the production unit (i.e. harvesting or farming activity).

3.11.1 The social and community impacts resulting from primary or secondary processing of seaweeds shall not be considered as part of the assessment except where they are performed by the same people engaged in the harvesting or farming work.

4 Group and multi-site assessments[1]

4.1 In cases where a group of producers join to become assessed, the CAB should follow the Group Certification Requirements.

4.2 In cases where a client has several sites (of the same ownership) where the seaweed species are cultured/harvest, the CAB should follow the Multi-Site Certification Requirements.

5 Traceability

5.1 The UoC shall provide all information necessary to support the CAB's identification of applicable traceability risks and determination of the start of the chain of custody.

5.2 The UoC shall have sufficient systems in place to ensure that seaweed and seaweed products from the UoC are:

a. Segregated from any seaweed products not included in the UoA.

b. Identified as coming from the UoA.

c. Traceable back to the harvesting/culturing facilities of the UoA from the point of first sale.

5.3 The systems in 5.2 must be in place before the UoC sells product as certified or under-assessment, and must be implemented throughout the production of any products sold as certified or under-assessment.

5.4 An Eligibility Date shall be set, from which product from a certified UoC is eligible to bear the ASC/MSC label according to the Seaweed (Algae) Certification and Accreditation Requirements ("CAR" thereinafter) Section 17.15.

[1] Derogation: Until CABs are notified by the ASC-MSC that the ASC Multi-Site and Group Certification Requirements are effective, all production units shall be assessed as single sites.

5.5 If the Eligibility Date is set before the certification date:

a. All under-assessment product harvested after the Eligibility Date shall be fully traceable back to the UoC and harvest date.

b. All under-assessment product/s shall be clearly identified and segregated from certified and non-certified product.

c. The certificate holder shall not apply the ASC/MSC label to under-assessment product, use ASC/MSC trademarks on under-assessment product or sell under-assessment product as certified until:

i. The UoC has been certified and the certificate issued by the CAB.

ii. There is a signed licence agreement between the client and the ASC-MSC if the ASC and/or MSC label is to be used.

6 The assessment tree

Assessment tree structure

6.1 The assessment tree structure includes the Performance Indicators (PIs) and scoring issues, as specified at the minimum and target levels, for each of the five Principles that comprise the Standard.

6.2 The full list of PIs included in the default assessment tree is presented in Table 1.

6.3 The applicability of each PI will depend on the seaweed production category considered and on the characteristics of the activity.

Table 1: List of Performance Indicators

Principle	Performance Indicator	
1	PI 1.1	Stock status
	PI 1.2	Harvest strategy
	PI 1.3	Genetic impact on wild stock
2	PI 2.1	Habitat
	PI 2.2	Ecosystem structure and function
	PI 2.3	ETP species
	PI 2.4	Other species
	PI 2.5	Waste management and pollution control
	PI 2.6	Pest and disease management
	PI 2.7	Energy efficiency
	PI 2.8	Translocations
	PI 2.9	Introduction of alien species
3	PI 3.1	Legal and/or customary framework
	PI 3.2	Decision-making processes

Principle	Performance Indicator	
	PI 3.3	Compliance and enforcement
4	PI 4.1	Child labour
	PI 4.2	Forced, bonded or compulsory labour
	PI 4.3	Discrimination
	PI 4.4	Health, safety and insurance
	PI 4.5	Fair and decent wages
	PI 4.6	Freedom of association and collective bargaining
	PI 4.7	Disciplinary practices
	PI 4.8	Working hours
	PI 4.9	Environmental and social training
5	PI 5.1	Community impacts
	PI 5.2	Conflict resolution
	PI 5.3	Rights of indigenous people
	PI 5.4	Visibility, positioning and orientation of production units or water-based structures
	PI 5.5	Identification and recovery of substantial gear
	PI 5.6	Noise, light and odour
	PI 5.7	Decommissioning of abandoned production units

Seaweed production categories

6.4 Seaweed production units shall be classified into one of the five categories defined in Table 2, to determine the PIs to include in the final assessment tree.

6.4.1 Categories Bii and Cii include those systems in which supply from the wild stock is not required (closed systems), 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.

Table 2: Seaweed production categories

Category	Production location and type	Linkages to wild stock
A ◙	Harvest of natural populations	Wild stocks harvested
Bi ◙	Cultivation at sea (including production units which require some stages cultivated in land-based hatcheries followed by grow-out at sea)	Seed supplied from wild stocks
Bii ◙		Supply of seed from wild stocks NOT required or negligible
Ci ◙	Cultivation entirely in land-based systems	Seed supplied from wild stocks
Cii ◙		Supply of seed from wild stocks NOT required or negligible

6.5 The final set of PIs to be included in the assessment tree shall be defined depending on the characteristics of the production unit in the UoA, as indicated in Table 3.

6.5.1 Unless otherwise indicated, each PI shall be scored.

Table 3: Applicability of PIs depending on the characteristics of the UoA production unit

Performance Indicators	Criteria	Yes/ No	Action
PI 1.1 Stock Status PI 1.2 Harvest strategy	1. Does the activity depend on wild stocks of seaweed or on seed supplied from them (categories A, Bi or Ci)?	Yes	Score these PIs
		No	Do not score these PIs
PI 1.3 Genetic impact on wild stock ◙	1. Is translocation occurring or the activity requires stages cultivated in hatcheries?	Yes	See next criteria
		No	Do not score this PI
	2. Is it a land-based system (category C)?	Yes	See next criteria
		No	Score this PI
	3. Is there contact with, extraction from, or impact on the marine environment which cannot be considered negligible?	Yes	Score this PI
		No	Do not score this PI
PI 2.1 Habitat PI 2.2 Ecosystem structure and function	1. Is it a land-based system (category C)?	Yes	See next criteria
		No	Score these PIs
	2. Is there contact with, extraction from, or impact on the marine environment which cannot be considered negligible?	Yes	Score these PIs
		No	Do not score these PIs
PI 2.7 Energy efficiency	1. Is it a micro family business?	Yes	Do not score this PI
		No	Score this PI
PI 2.8		Yes	See next criteria

Performance Indicators	Criteria	Yes/ No	Action
Translocations	1. Is translocation occurring?	No	Do not score this PI
	2. Is it a land-based system (category C)?	Yes	See next criteria
		No	Score this PI
	3. Is there contact with, extraction from, or impact on the marine environment which cannot be considered negligible?	Yes	Score this PI
		No	Do not score this PI
PI 2.9 Introduction of alien species	1. Is the UoA targeting an alien species?	Yes	Score this PI
		No	Do not score this PI
PI 3.1 Legal and/or customary framework	1. Is the production of such low intensity, scale, and level of development as to be considered to not yet need a national legal framework?	Yes	Do not score this PI
		No	Score this PI
PI 5.4 Visibility, positioning and orientation of farms or water-based structures PI 5.5 Identification and recovery of substantial gear	1. Is it a land-based system (category C)?	Yes	See next criteria
		No	Score these PIs
	2. Does the activity require the use of substantial gear or structures in the wild aquatic environment?	Yes	Score these PIs
		No	Do not score these PIs

Scoring and conditions

6.6 The UoA shall be assessed against the PIs set in the final assessment tree.

6.7 Each PI is composed of one or more scoring issues, which are the single parts of the assessment tree that shall be assessed and scored.

6.8 Each scoring issue shall be assessed at one or both of the following scoring levels (levels, thereinafter): ◙

a. Minimum level.

b. Target level.

6.9 One or more auditable and verifiable conditions for continuing certification shall be set if the UoA does not meet the target level, but meets the minimum level for any individual PI (see CAR Section 17.12 for further details).

6.10 One or more critical conditions shall be set if the UoA does not meet the minimum level (see CAR Section 17.13 for further details).

6.11 A UoA shall not be awarded certification if any PI is not met at the minimum level.

6.12 A UoA shall not be awarded certification if it has more than the number of conditions allowed in each Principle given in Table 4. ◙

Table 4: Maximum number of conditions allowed for a certified UoA

	Production unit category (as in Table 2)				
Principle	**A**	**Bi**	**Bii**	**Ci**	**Cii**
P1	1	1	0	1	0
P2	2	2	2	2	2
P3	1	1	1	1	1
P4	2	2	2	2	2
P5	2	2	2	1	1
Total	**8**	**8**	**7**	**7**	**6**

Use of risk based methods for data-deficient UoAs

6.13 The criteria in Table 5 shall be used to determine whether a UoA may or may not be data-deficient with respect to one or more PIs.

6.14 If the UoA is data-deficient with respect to PI 1.1, the ASC-MSC Risk Based Framework (RBF) approach shall be used to score it.

6.14.1 The CAB shall propose an alternative Productivity Susceptibility Analysis (PSA) specific to seaweeds.

6.14.2 Such a proposal shall be submitted as a variation request to the ASC-MSC following the procedure as set out in the CAR Section 4.7.

6.15 If the UoA is data-deficient with respect to one or more PIs in Principle 2 listed in Table 5, the ASC-MSC Seaweed (Algae) Risk Based Framework shall be used to score it.

6.15.1 The criteria in Table 5 shall be applied to all known scoring elements in Principle 2.

6.15.2 If a PI contains both data-deficient and non-data-deficient scoring elements:

a. The RBF shall be used only to assess the data-deficient scoring elements.

b. Non-data-deficient scoring elements shall be scored using the levels in the assessment tree announced for the assessment.

Table 5: Criteria for triggering the use of the RBF

Performance Indicators		**Criteria**	**Yes/ No**	**Action**
PI 1.1	Stock Status	Stock status reference points are available, derived either from analytical stock assessment or using empirical approaches	Yes	Use default levels for this PI
			No	Use ASC-MSC RBF for this PI
PI 2.1	Habitat	Information on habitats encountered is available and information on the impacts of the production unit on the habitats encountered is available	Yes	Use default levels for this PI
			No	Use ASC-MSC RBF for this PI

Performance Indicators		Criteria	Yes/ No	Action
PI 2.2	Ecosystem structure and function	Information on the impacts of the production unit on the ecosystem is available	Yes	Use default levels for this PI
			No	Use ASC-MSC RBF for this PI
PI 2.3	ETP species	The impact of the production unit on ETP species can be analytically determined	Yes	Use default levels within for this PI
			No	Use ASC-MSC RBF for this PI
PI 2.4	Other species	Stock status reference points are available, derived either from analytical stock assessment or using empirical approaches	Yes	Use default levels within for this PI
			No	Use ASC-MSC RBF for this PI

7 Principle 1: Sustainable wild seaweed populations

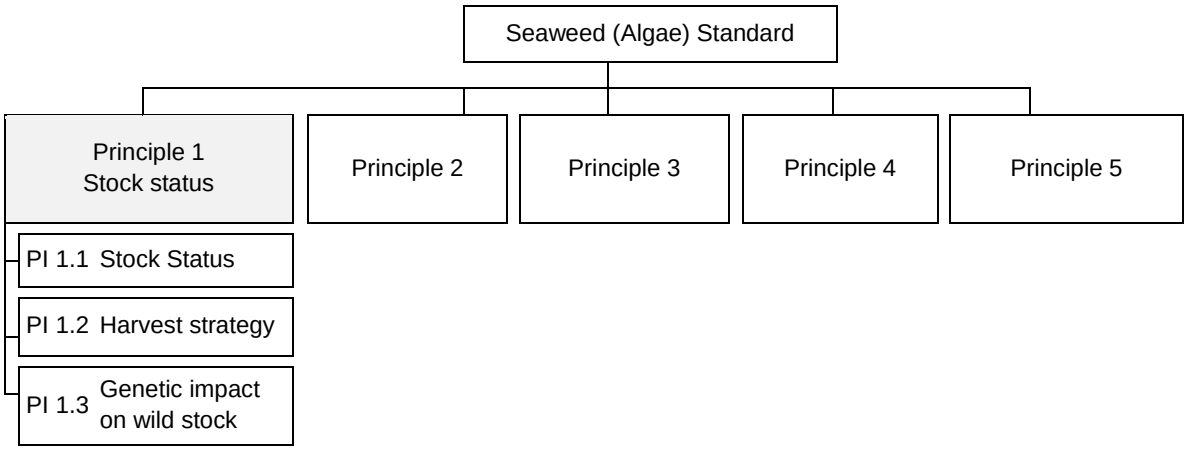

Figure 1: Principle 1 Assessment tree structure

General requirements for Principle 1

7.1 In Principle 1, the seaweed stock/s and area/s selected for inclusion in the UoA/s shall be scored.

Stock status (PI 1.1)

Table 6: PI 1.1 Stock status

Performance Indicator		Scoring Issue	Minimum	Target
1.1	Stock status	a. Stock status relative to irreversible impact	Available information indicates that the wild stock is above the point where the harvesting impact is irreversible or very slowly reversible.	The wild 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 stock, which is unlikely to be detectable against natural variability for this population, or if detectable is minimal and has no impact on population dynamics.

7.2 The biology of the species and the scale and intensity of both the UoA and management system and other relevant issues shall be considered when determining time periods over which to judge fluctuations.

7.3 Where information is not available on the stock status relative to MSY levels, proxy indicators and reference points may be used to score PI 1.1.

7.4 Where proxy indicators and reference points are used to score PI 1.1, their use as reasonable proxies of stock biomass for MSY shall be justified.

Harvest Strategy (PI 1.2)

Table 7: PI 1.2 Harvest strategy

Performance Indicator		Scoring Issue	Minimum	Target
1.2	Harvest strategy	a. Harvest strategy design	The harvest strategy is expected to achieve stock management objectives reflected in the stock status target (PI 1.1), based on plausible argument.	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 target (PI 1.1).
		b. Harvest strategy evaluation		The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.

7.5 The scoring of the harvest strategy design and its evaluation shall be based on the available and verifiable information that is relevant to both the design and the effective operation of the production unit.

7.5.1 Information that may be relevant to the harvest strategy includes:

a. Stock structure
b. Stock productivity
c. Stock abundance
d. Fleet composition/harvesting individuals and/or organisations
e. UoA removals
f. Other data

7.6 In scoring issue (b), the term “tested” shall be interpreted as the involvement of some sort of structured logical argument and analysis that supports the choice of strategy.

7.7 In scoring issue (b), the scoring of “evidence” shall include consideration of the current levels of exploitation in the UoA such as measured by the harvest rate, where available.

7.8 Where information is not available on the exploitation rate consistent with achieving a long term MSY, proxy indicators and reference points may be used to evaluate the effectiveness of the harvest strategy.

Genetic Impact on wild stock (PI 1.3)

Table 8: PI 1.3 Genetic Impact on wild stock

Performance Indicator		Scoring Issue	Minimum	Target
1.3	Genetic impact on wild stock	a. Genetic outcome	The harvesting or farming activity is **unlikely** to impact the genetic structure of wild populations.	The harvesting or farming activity is **highly unlikely** to impact the genetic structure of wild populations.
		b. Genetic impact management	There are **measures** in place, which are expected to maintain the genetic structure of the wild population at levels compatible with the target genetic outcome level of performance.	There is a **partial strategy** in place, which is expected to maintain the genetic structure of the wild population at levels compatible with the target genetic outcome level of performance.

8 Principle 2: Environmental impacts

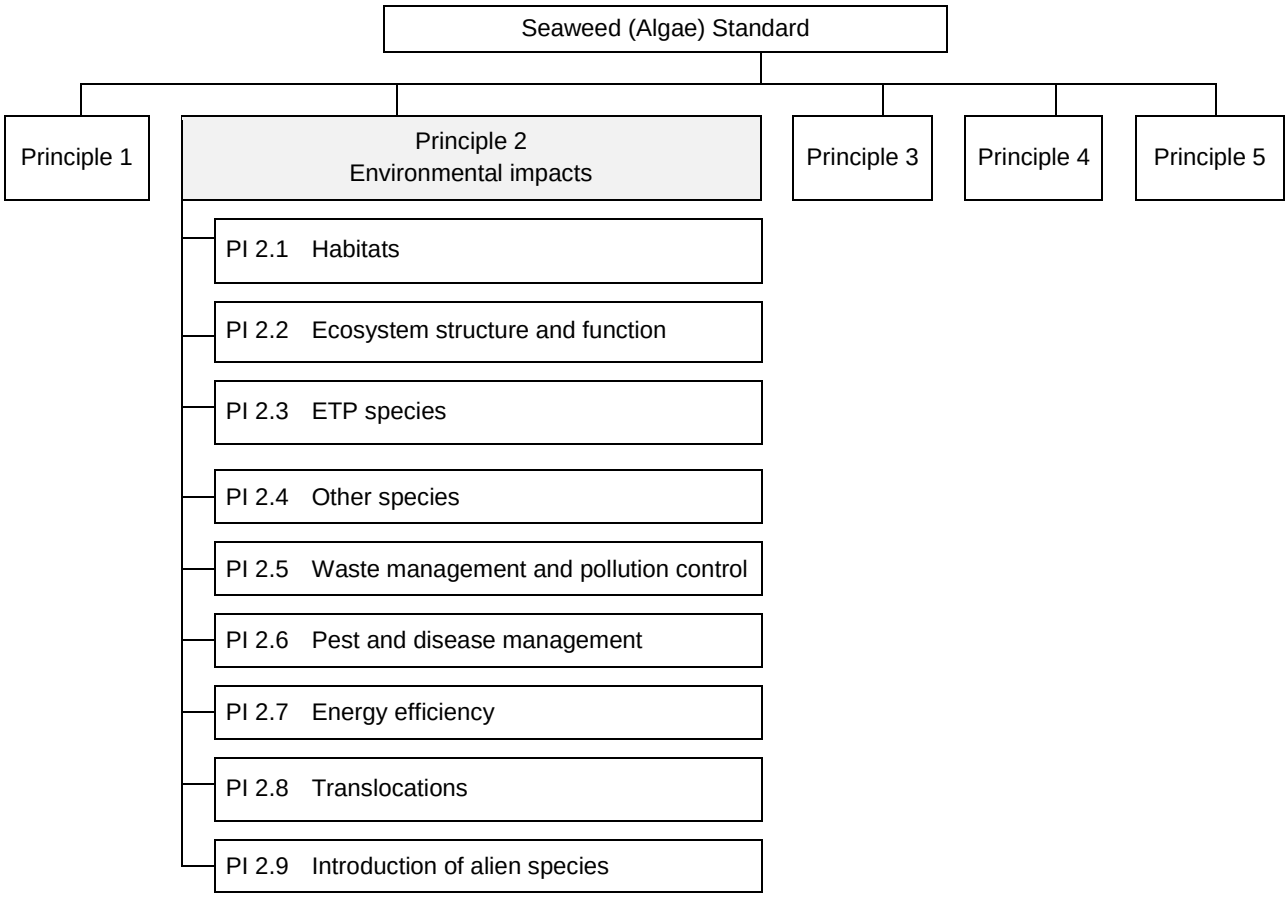

Figure 2: Principle 2 Environmental Impacts

General requirements for Principle 2

8.1 Principle 2 covers impacts of the UoA on:

a. All species not scored in Principle 1.

b. Structure and function of the habitats.

c. Structure and function of the ecosystem.

8.2 Each Principle 2 species shall be considered within only one of the ETP species or Other species PIs.

8.3 Endangered, threatened or protected (ETP) species shall be assessed under PI 2.3.

8.3.1 All other species shall be assessed under PI 2.4.

8.4 ETP species shall be defined as follows:

a. Species that are recognised by national ETP legislation

b. Species listed in the binding international agreements given below:

i. Appendix 1 of the Convention on International Trade in Endangered Species (CITES), unless it can be shown that the particular stock of the CITES listed species impacted by the UoA under assessment is not endangered.

ii. Binding agreements concluded under the Convention on Migratory Species (CMS), including:

A. Annex 1 of the Agreement on Conservation of Albatrosses and Petrels (ACAP).

B. Table 1 Column A of the African-Eurasian Migratory Waterbird Agreement (AEWA).

C. Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS).

D. Annex 1, Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (ACCOBAMS).

E. Wadden Sea Seals Agreement.

F. Any other binding agreements that list relevant ETP species concluded under this Convention.

c. Species that are amphibians, reptiles, birds or mammals, and listed in the IUCN Red list as vulnerable (VU), endangered (EN) or critically endangered (CE).

8.5 If a UoA has no impact on either the Habitat, Ecosystem, ETP species or Other species, the relevant PIs (PI 2.1, PI 2.2, PI 2.3 or PI 2.4) shall be considered to have met the target level.

Principle 2 Terminology

8.6 Key words or phrases used in Principle 2 shall be interpreted as shown in Table 9.

Table 9: Principle 2 phrases

Term	Definition
Biologically based limits	These are benchmarks against which the status of a species can be evaluated, to show that there is a high probability of persistence of the species over time. For many fish species, this will be equivalent to the point below which recruitment may be impaired (PRI). For other species types, this should have the same general intent but alternatives such as minimum viable population size (MVP), potential biological removal (PBR), or other metrics which help determine the sustainability of a population, may be used. The benchmark should be derived from biological information that is relevant to the ecosystem feature and UoA, although the information does not necessarily have to come from the specific area.
Does not hinder	The impact of the UoA is low enough that if the species is capable of improving its status, the UoA will not hinder that improvement. It does not require evidence that the status of the species is actually improving.
In place	When a measure or strategy is “in place”, the measure or strategy has been implemented, and if multiple measures have been identified to address an impact of the UoA, there is a specified process with a clear timetable and endpoint for implementation of all the measures.
Objective Basis for Confidence	“Objective basis for confidence”, as used at the target level in the Principle 2 Management Strategy Evaluation scoring issues (SIs), refers to the levels of information required to evaluate the likelihood that the management partial strategy will work. • The minimum level for these SIs requires “plausible argument” based on expert knowledge. • The target level requires expert knowledge augmented by some information collected in the area of the UoA and about the specific component/s and/or UoA.

8.7 The definitions of required probability shall be those in Table 10.

Table 10: Probability required at different levels

Performance Indicator	Minimum level	Target level
PIs 2.1 and 2.2 (Habitats and Ecosystem)	Unlikely = < 40th %ile	Highly unlikely = < 30th %ile
PIs 2.3 and 2.4 (ETP and Other species)	Likely = > 70th %ile	Highly likely = > 80th %ile
PI 2.8 (Translocations)	Unlikely = < 40th %ile	Highly unlikely = < 30th %ile

8.8 Where qualitative analysis and/or expert judgements are used in scoring the UoA at the minimum and target levels, a justification showing equivalence with the probability levels expected (highly unlikely, unlikely, likely, highly likely) shall be provided.

8.9 A range of informed viewpoints or alternative hypotheses may be used to make qualitative judgements about the probability interpretation of the levels.

Habitats (PI 2.1)

Table 11: PI 2.1 Habitats

Performance Indicator		Scoring Issue	Minimum	Target
2.1	Habitats	a. Seaweed-habitat status	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.	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.
		b. Other commonly encountered habitat status	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.	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.
		c. Vulnerable marine Ecosystem (VME) status	The UoA is **unlikely** to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	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.

8.10 Where there is not enough information to assess PI 2.1, the ASC-MSC Seaweed (Algae) Risk Based Framework (CSA) shall be adapted.

8.10.1 The CSA may be used even when there is sufficient information to assess PI 2.1 but is not mandatory under these circumstances.

8.11 If a benthic habitat is being assessed, habitat categories based on the following habitat characteristics shall be recognised: ◙

a. Substratum – sediment type.

b. Geomorphology – seafloor topography.

c. Biota – characteristic floral and/or faunal group/s.

8.12 A "commonly encountered habitat" shall be interpreted as a habitat that regularly comes into contact with a gear used by the UoA, considering the spatial (geographical) overlap of harvesting effort or farming with the habitat's range within the management area/s covered by the governance body/bodies relevant to the UoA. ◙

8.13 A "VME" shall be interpreted as a habitat having one or more of the following characteristics: ◙

a. Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems.

b. Functional significance – discrete areas or habitats that are necessary for survival, function, spawning/reproduction, or recovery of fish stocks, for particular life-history stages (e.g. nursery grounds, rearing areas), or for ETP species.

c. Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities.

d. Life-history traits of component species that make recovery difficult – ecosystems that are characterised by populations or assemblages of species that are slow growing, are slow maturing, have low or unpredictable recruitment, and/or are long lived.

e. Structural complexity – an ecosystem that is characterised by complex physical structures created by significant concentrations of biotic and abiotic features.

8.14 Complex kelp-dominated or rockweed-dominated habitats (except where already scored as the Principle 1 species in scoring issue (a)), mangroves, seagrass beds, and biogenic reefs shall be scored as VME habitats. ◙

8.14.1 These should also be scored when they are used as sources of production of the seaweed operation, such as mangroves or coral reefs used as sources of construction materials.

8.15 A "serious or irreversible harm" shall be interpreted as reductions in habitat structure and function such that the habitat would be unable to recover at least 80% of its structure and function within five to 20 years if harvesting/farming on the habitat were to cease entirely. ◙

8.15.1 In the case of VMEs, "serious or irreversible harm" shall be interpreted as reductions in habitat structure and function below 80% of the unimpacted level.

8.16 When assessing the status of habitats and the impacts of harvesting/farming, the full area managed by the local, regional, national, or international governance body/bodies responsible for harvesting/farming management in the area/s where the UoA operates (the "managed area" hereinafter) shall be considered. ◙

8.16.1 In cases where a habitat's range falls within the "managed area", the habitat's range inside the "managed area" shall be considered.

8.16.2 In cases where a habitat's range overlaps the "managed area", the habitat's range both inside and outside the "managed area" shall be considered.

Ecosystem structure and function (PI 2.2)

Table 12: PI 2.2 Ecosystem

Performance Indicator		Scoring Issue	Minimum	Target
2.2	Ecosystem structure and function	a. Ecosystem status	The UoA is **unlikely** to disrupt the key elements underlying ecosystem structure and function to the point where there would be serious or irreversible harm.	The UoA is **highly unlikely** to disrupt the key elements underlying ecosystem structure and function to the point where there would be serious or irreversible harm.

8.17 "Serious or irreversible harm" in this PI shall be interpreted as the reduction of key features most crucial to maintaining the integrity of its structure and functions and ensuring that ecosystem resilience and productivity is not adversely impacted. This includes, but is not limited to, permanent changes in the biological diversity of the ecological community and the ecosystem's capacity to deliver ecosystem services.

ETP species (PI 2.3)

Table 13: PI 2.3 ETP species

Performance Indicator		Scoring Issue	Minimum	Target
2.3	ETP species	a. Effects of the UoA on population/ stocks within national or international limits, where applicable	Where national and/or international requirements set limits for impact on ETP species, the effects of the UoA on the population/ stock are known and **likely** to be within these limits.	Where national and/or international requirements set limits for impacts on ETP species, the **combined effects** of the UoAs and any other certified seaweed UoA on the population/stock are known and **highly likely** to be within these limits.
		b. Direct effects	Known direct effects of the UoA are **likely** to not hinder recovery of ETP species.	Direct effects of the UoA are **highly likely** to not hinder recovery of ETP species.
		c. Indirect effects		Indirect effects have been considered for the UoA and are thought to be highly likely to not create unacceptable impacts.
		d. Management strategy in place	There are **measures** in place that minimise the UoA-related impact on ETP species, and it is expected to be **highly likely** to achieve national and international requirements	There is a **strategy** in place for managing the impact of the UoA on ETP species, including measures to minimise mortality, which is designed to be **highly**

Performance Indicator		Scoring Issue	Minimum	Target
			for the protection of ETP species. OR Where there are no requirements for protection and rebuilding provided through national ETP legislation or international agreements, there are **measures** in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	**likely** to achieve national and international requirements for the protection of ETP species. OR Where there are no requirements for protection and rebuilding provided through national ETP legislation or international agreements, there is a **strategy** in place that is expected to ensure the UoA does not hinder the recovery of ETP species.
		e. Management strategy evaluation	The **measures** are considered likely to work, based on plausible argument.	There is an **objective basis for confidence** that the measures/strategy will work, based on information directly about the UoA and/or the species involved.
		f. Management strategy implementation		There is some evidence that the measures/strategy is being implemented successfully.
		g. Review of alternative measures to minimise mortality of ETP species	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	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.

8.18 In scoring issue (a), “where national and/or international requirements set limits” shall be interpreted as limits set for protection and rebuilding, provided through the national legislation or binding international agreements, as defined in 8.4 and subclauses.

8.18.1 If there is no applicable national legislation or binding international agreement, scoring issue (a) shall not be scored.

8.19 Scoring shall reflect the likelihood that the UoA meets these requirements and its likelihood of causing unacceptable impacts.

8.19.1 The requirement for the UoA to be “within national or international limits” shall be interpreted as:

a. At the minimum level, where it is likely that the UoA meets the requirements, there is some evidence that requirements for protection and rebuilding are being achieved.

b. At the target level, where it is highly likely that the combined ASC-MSC UoAs meet the requirements, there is direct demonstration that requirements for protection and rebuilding are being achieved.

8.20 When assessing scoring issues (a) and (b), it shall be considered whether there are any changes in the catch or mortality of ETP species resulting from the implementation of measures to minimise their mortality (scoring issue (g)).

8.21 When scoring the ETP species management strategy (scoring issues (d) to (g)), the need to minimise mortality shall be considered.

8.21.1 All sources of direct mortality shall be considered, including, but not limited to, direct mortality and injuries leading to mortality.

8.22 If there is unwanted catch, scoring issue (g) shall be assessed.

8.22.1 The requirements in 8.31-8.33 shall be used as also applicable to scoring issue (g) here.

Other species (PI 2.4)

Table 14: PI 2.4 Other species

Performance Indicator		Scoring Issue	Minimum	Target
2.4	Other species	a. Main species stock status ◙	Main species are **likely** to be above biologically based limits. OR If the main species are below biologically based limits, there are **measures** in place expected to ensure that the UoA does not hinder recovery and rebuilding.	Main species are **highly likely** to be above biologically based limits. OR If the main species are below biologically based limits there is either **evidence of recovery or a demonstrably effective strategy** in place between the UoA and any other certified seaweed UoAs, which categorise these species as main, to ensure that they collectively do not hinder recovery and rebuilding.
		b. Management strategy in place ◙	There are **measures** in place, if necessary, which are 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.	There is a **partial strategy** in place for the UoA, if necessary, which 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.

Performance Indicator		Scoring Issue	Minimum	Target
		c. Management strategy evaluation	The measures are considered **likely** to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species, etc.).	There is **some objective basis for confidence** that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.
		d. Management strategy implementation		There is **some evidence** that the measures/partial strategy is being implemented successfully.
		e. Review of alternative measures	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main species.	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**.

8.23 A species shall be considered “main” if:

a. The catch of a species by the UoA comprises 5% or more by weight of the total catch of all species by the UoA, or

b. The species is classified as “less resilient” and the catch of the species by the UoA comprises 2% or more by weight of the total catch of all species by the UoA.

8.24 One or both of the following criteria shall be used to determine whether a species should be classified as “less resilient”:

a. The productivity of the species indicates that it is intrinsically of low resilience, or

b. Even if its intrinsic resilience is high, the existing knowledge of the species indicates that its resilience has been lowered due to anthropogenic or natural changes to its life-history.

8.25 In the case where individuals are released alive they shall not contribute to the definition of “main”.

8.25.1 Strong scientific evidence of a very low post capture mortality shall be provided.

8.26 In cases where a species does not meet the designated weight thresholds of 5% or 2% as defined in 8.23, the species shall be still classified as “main” if the total catch of the UoA is exceptionally large, such that even small catch proportions of the species significantly impact the affected stocks/populations.

8.27 All other species not considered “main” shall not be considered further in scoring this PI.

8.28 At the target level, where a species is below the level at which recruitment could be impaired, “evidence of recovery” or a “demonstrably effective strategy” shall be recognised as being in place such that all ASC-MSC Seaweed UoAs do not collectively hinder recovery of the species using any or a combination of the following as rationale:

a. Direct evidence from time series estimates of stock status.

b. Indirect evidence from time series of indicators or proxies of stock status indicative of the state of the whole stock.

c. Indicators, proxies or absolute estimates of exploitation rate that show that harvesting mortality experienced by the stock is lower than F_{MSY}.

d. Direct evidence that the proportion of combined catch by all ASC-MSC Seaweed UoAs relative to the total catch of the stock does not hinder recovery.

8.29 The term “unwanted catch” shall be interpreted as the part of the catch that a harvester/farmer did not intend to catch but could not avoid, and did not want or chose not to use.

8.30 If there is unwanted catch, scoring issue (e) shall be assessed.

8.31 “Alternative measures” in scoring issue (e) shall be interpreted as alternative harvesting gear and/or practices that have been shown to minimise the rate of incidental mortality of the species or species type to the lowest achievable levels.

8.32 “Regular review” in scoring issue (e) shall be interpreted as at least once every five years.

8.33 ‘‘As appropriate” in scoring issue (e) in the context of implementing reviewed measures shall be interpreted as situations where potential alternative measures reviewed are:

a. Determined to be more effective at minimising the mortality of unwanted catch than current harvesting gear and practices.

b. Determined to be comparable to existing measures in terms of effect on target species catch, and impacts on vessel and crew safety.

c. Determined to not negatively impact on other species or habitats.

d. Not cost-prohibitive to implement.

Waste management and pollution control (PI 2.5)

Table 15: PI 2.5 Waste management and pollution control

Performance Indicator		Scoring Issue	Minimum	Target
2.5	Waste manage-ment and pollution control	a. Waste reduction	There are **some measures** in place that can help to reduce waste produced by the UoA.	There is a **strategy** in place, which is expected to reduce waste produced by the UoA.
		b. Chemicals and hydrocarbon wastes	There are **some measures** in place that can help to reduce chemical and hydrocarbon wastes produced by the UoA.	There is a **strategy** in place, which is expected to reduce chemical and hydrocarbon waste produced by the UoA.
		c. Chemicals and hydrocarbon spills	There are **some measures** in place that can help to prevent spills of chemicals and hydrocarbons originating from the UoA.	There is a **spill prevention and response plan** in place for chemicals and hydrocarbons originating from the UoA.

Pest/s and disease/s management (PI 2.6)

Table 16: PI 2.6 Pest/s and disease/s management

Performance Indicator		Scoring Issue	Minimum	Target
2.6	Pest/s and disease/s manage-ment	a. Spread of pest/s and disease/s	There is a **partial strategy** that is expected to prevent the spread of pest/s and disease/s.	There is a **strategy** that is expected to prevent the spread of pest/s and disease/s.

Energy efficiency (PI 2.7)

Table 17: PI 2.7 Energy efficiency

Performance Indicator		Scoring Issue	Minimum	Target
2.7	Energy efficiency	a. Energy use monitoring	There is some information about energy use of the production unit.	There is evidence of energy use monitoring relative to production and ongoing effort to improve efficiency.
		b. Maintenance records of equipment	There are maintenance records for equipment.	Maintenance records for equipment are up to date and available.

Translocations (PI 2.8)

Table 18: PI 2.8 Translocations

Performance Indicator		Scoring Issue	Minimum	Target
2.8	Trans-locations	a. Impact of translocation activity	The translocation activity is **unlikely** to introduce diseases, pests, pathogens, or non-native species into the surrounding ecosystem.	The translocation activity is **highly unlikely** to introduce diseases, pests, pathogens, or non-native species into the surrounding ecosystem.
		b. Translocation management strategy evaluation	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 impact target level of performance defined in SIa (target level).	There is a **strategy** in place that is expected to protect the surrounding ecosystem from the translocation activity at levels compatible with the translocation impact target level of performance defined in SIa (target level).

Introduction of alien species (PI 2.9)

Table 19: PI 2.9 Introduction of alien species

Performance Indicator		Scoring Issue	Minimum	Target
2.9	Introduction of alien species	a. Management of alien species	There is a **partial strategy** in place to prevent progression of ecosystem impacts from occurring due to the presence of the alien species.	There is a **strategy** in place to prevent progression of ecosystem impacts from occurring due to the presence of the alien species.

9 Principle 3: Effective management

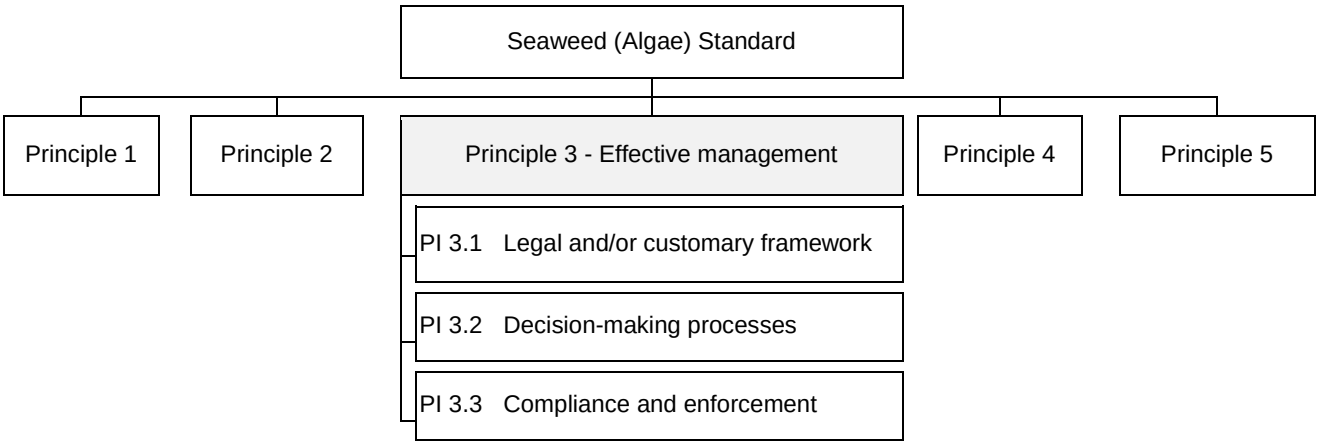

Figure 3: Principle 3 Effective management

General requirements for Principle 3

9.1 The jurisdictional category or combination of jurisdictional categories, which apply to the management system of the UoA, including consideration of formal, informal and/or traditional management systems, shall be determined and stated when assessing performance of UoAs under Principle 3, including:

a. Single jurisdiction.

b. Single jurisdiction with indigenous component.

c. Shared stocks.

9.2 The scale and intensity of the UoA shall be considered in determining the appropriateness of the management system.

Principle 3 Terminology

9.3 The term “explicit” in this section shall be interpreted as formally codified or documented management measures and mechanisms as well as informal management measures and mechanisms that are well established and effective.

9.4 In scoring management performance in the continuum from implicit to explicit, the following shall be considered:

a. The extent to which such management measures, whether formal or informal, are established in the UoA.

b. How well they are understood and applied by users within the UoA.

c. The extent to which such measures are considered durable and unambiguous.

Legal and/or customary framework (PI 3.1)

Table 20: PI 3.1 Legal and/or customary framework

Performance Indicator		Scoring Issue	Minimum	Target
3.1	Legal and/or customary framework	a. Compatibility of laws or standards with effective management	There is an effective national legal system and a **framework for cooperation**, with other parties where necessary, to deliver management outcomes consistent with the Principles of this standard.	There is an effective national legal system and organised and **effective cooperation**, with other parties where necessary, to deliver management outcomes consistent with the Principles of this standard.
		b. Respect for rights	The management system has a mechanism to **generally respect** the legal rights created explicitly or established by custom of people dependent on harvesting or farming for food or livelihood in a manner consistent with the objectives of Principles of this standard.	The management system has a mechanism **to observe** the legal rights created explicitly or established by custom of people dependent on harvesting or farming for food or livelihood in a manner consistent with the objectives of Principles of this standard.

9.5 Scoring shall focus on whether or not there is an appropriate and effective legal and/or customary framework that is capable of delivering sustainability in the UoA/s in accordance with Principle 1 and 2, and of delivering responsible operations in accordance with Principle 4 and 5.

9.6 At the minimum level for scoring issue (a), “compatibility with laws and standards” shall be interpreted as follows:

9.6.1 For a UoA not subject to international cooperation for management of the stock this shall be interpreted as:

a. The existence of national laws, agreements and policies governing the actions of all the authorities and actors involved in managing the UoA.

b. That these laws, agreements and/or policies provide a framework for cooperation between national entities (e.g. between regional and national management, state/provincial and federal management, indigenous and other groups) on national management issues, as appropriate for the context, size, scale or intensity of the UoA.

9.6.2 For a UoA subject to international cooperation for management of the stock, this shall be interpreted as the existence of:

a. National and international laws, arrangements, agreements and policies governing the actions of the authorities and actors involved in managing the UoA, and

b. A framework for cooperation with other territories, sub-regional or regional seaweed harvesting/farming management organisations, or

c. Other bilateral/multilateral arrangements that create the cooperation required to deliver sustainable management under the obligations of UNCLOS Articles 63(2), 118, 119, and UNFSA Articles 8 and 10.

9.7 At the target level for scoring issue (a), consistency with laws and standards shall be interpreted as follows:

9.7.1 For a UoA not subject to international cooperation for management of the stock, this shall be interpreted as:

a. The existence of national laws, agreements and policy governing the actions of all the authorities and actors involved in managing the UoA.

b. That these laws, agreements and/or policies also provide for organised cooperation between national entities (e.g. between regional and national management, state and federal management, indigenous and other groups) on national management issues.

9.7.2 For a UoA subject to international cooperation for management of the stock this shall be interpreted as:

a. The existence of national and international laws, agreements and policies governing the actions of the authorities and actors involved in managing the UoA.

b. That effective regional and/or international cooperation creates a comprehensive cooperation under the obligations of UNCLOS Articles 63(2) and 118.

c. That cooperation at least allows sharing and dissemination of scientific data, the scientific assessment of stock status and development of management advice, the agreement and delivery of management actions consistent with this sustainable management advice, and on monitoring and control.

9.8 The use of the term “treaties”, in relation to scoring issue (b), shall not include international treaties or treaties between states or nations, and is limited, in this context to national treaties relating specifically to aboriginal or indigenous people and, where applicable, their associated sovereign nations.

9.9 At the minimum level for scoring issue (b), “generally respect” shall be interpreted as meaning that there is some evidence that the legal rights created explicitly or established by custom of people dependent on harvesting/farming for food or livelihood, and their long-term interests, are considered within the legal and/or customary framework for managing harvesting/farming.

9.10 At the target level for scoring issue (b), the term “observe” shall be interpreted as meaning that:

a. There are more formal arrangements such as bylaws or regulation that make explicit the requirement to consider the legal rights created explicitly or by custom of people dependent on harvesting/farming for food or livelihood.

b. The long-term interests of those people are taken into account within the legal and/or customary framework for managing production units.

Decision-making processes (PI 3.2)

Table 21: PI 3.2 Decision-making processes

Performance Indicator		Scoring Issue	Minimum	Target
3.2	Decision-making processes	a. Objectives	Objectives to guide decision-making, which are consistent with achieving the outcomes expressed in the Principles of this standard, are **implicit** within the production unit	**Short and long-term** objectives, which are consistent with achieving the outcomes expressed in the Principles of this standard, are **explicit** within the production unit’s

Performance Indicator		Scoring Issue	Minimum	Target
			specific management system.	specific management system.
		b. Decision-making process	There are **some** decision-making processes in place that result in measures and strategies to achieve the production unit specific objectives.	There are **established** decision-making processes that result in measures and strategies to achieve the production unit specific objectives.
		c. Responsive-ness 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.
		d. Use of precautionary approach		Decision-making processes use the precautionary approach and are based on the best available information.
		e. Accountability and transparency of management system and decision-making process	**Some** information on the production unit's performance and management action is **generally** available on request to stakeholders.	Information on the production unit's performance and management action is available on request to stakeholders, 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.**
		f. Approach to disputes	Although the management authority or production unit 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 of the production unit.	The management system or production unit is attempting to comply in a timely fashion with judicial or administrative tribunal decisions arising from any legal challenges.

9.11 The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.

9.12 The “precautionary approach” in scoring issue (d) shall be interpreted as meaning that decision-making processes use caution when information is uncertain, unreliable or inadequate.

9.13 In assessing the performance and management actions of the production unit in scoring issue (e), “Accountability and transparency of management system and decision-making process”, the extent to which transparency and accountability are embedded within the management system shall be considered including in relation to:

a. Public access to information on the production unit’s performance and data.

b. The availability of information to stakeholders on actions taken by management that have implications for sustainable use of harvesting/farming resources.

c. The transparency of the decision-making process, so that it is clear to all stakeholders that decisions were made based on available evidence and due process.

9.13.1 At the minimum level, a general summary of information on subsidies, allocation, compliance and harvesting/farming management decisions should be available to stakeholders on request.

9.13.2 At the target level, in addition to the information provided at the minimum level, information on decisions, production unit data supporting decisions, and the reasons for decisions, should be made available to all stakeholders on request.

9.14 If the production unit is not subject to any legal challenges, scoring issue (f) shall be scored as met at the target level.

Compliance and enforcement (PI 3.3)

Table 22: PI 3.3 Compliance and enforcement

Performance Indicator		Scoring Issue	Minimum	Target
3.3	Compliance and enforcement	a. MCS implementation	Monitoring, control and surveillance (MCS) **mechanisms** exist and are implemented in the production unit, and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance **system** (MCS) has been implemented in the production unit and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.
		b. Sanctions	Sanctions to deal with non-compliance exist and there is **some evidence** that they are applied.	Sanctions to deal with non-compliance exist, **are consistently applied,** and thought to provide effective deterrence.
		c. Compliance	Production units are **generally thought** to comply with the management system under assessment, including, when required, providing information necessary for effective management.	**Some evidence exists** to demonstrate production units comply with the management system under assessment, including, when required, providing information of importance to the effective

Performance Indicator		Scoring Issue	Minimum	Target
				management of the production unit.
		d. Systematic non-compliance		There is no evidence of systematic non-compliance.

9.15 In scoring issue (a), the scale and intensity of the UoA in determining the necessity of having a monitoring, control and surveillance mechanism (MCS) shall be considered.

9.16 In scoring issue (c), consideration shall be given as to whether production units cooperate, where necessary, with management authorities in the collection of information about catch, discards and other information that is of importance to the effective management of the resources and the production unit.

9.17 Judgement on this PI shall be informed, to the extent possible, by independent and credible information from relevant compliance and enforcement agencies or individuals and/or stakeholders.

10 Principle 4: Social responsibility

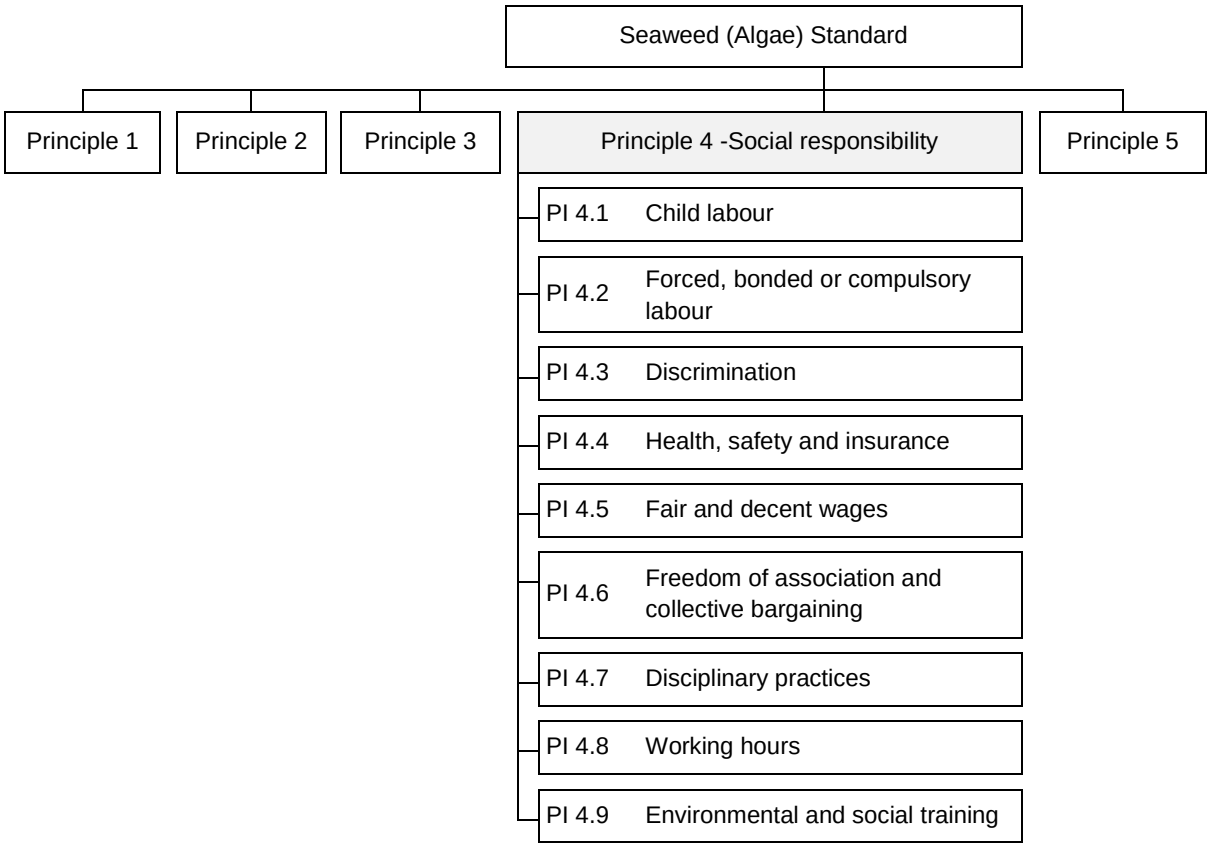

Figure 4: Principle 4 Social responsibility

Child labour (PI 4.1)

Table 23: PI 4.1 Child labour

Performance Indicator		Scoring Issue	Minimum	Target
4.1	Child labour	a. Child labour	No incidences of child labour or young worker abuse are found to have occurred.	There is evidence that the risk of child labour and young worker abuse has been minimised.

10.1 At the minimum level, the production unit shall ensure that:

a. They maintain copies of the official identification of all workers, showing date of birth.

b. No worker is younger than 15 years old or higher if specified by law.

c. Hazardous work is not performed by those below age 18. This includes heavy lifting disproportionate to their size, operating heavy machinery, working night shifts and exposure to any toxic chemicals.

10.2 At the target level, the production unit shall have and maintain:

a. A written policy or declaration stating that:

i. The organisation is against child labour and will not employ anybody younger than 15 years old.

ii. The actions that the organisation will take in the case that child labour or young worker abuse is discovered during the audit.

iii. How risks of child labour are minimised (e.g. a system to monitor hours and conditions of young workers and light work by children, and how the age of workers is verified, etc.).

b. A system in place that monitors the policy and its implementation.

10.3 For micro family businesses, this indicator may be scored through conversations with the family and observations of activities.

10.3.1 In this case, the records and written documents referred to in 10.1a and 10.2 shall not be required, but the conversations should confirm that children helping on their family seaweed production unit are doing so in a manner that does not stop them from receiving mandatory schooling as defined by national law, and is safe and on a voluntary basis.

Forced, bonded or compulsory labour (PI 4.2)

Table 24: PI 4.2 Forced, bonded or compulsory labour

Performance Indicator		Scoring Issue	Minimum	Target
4.2	Forced, bonded or compulsory labour	a. Incidences and risk of forced, bonded or compulsory labour	No incidences of forced, bonded or compulsory labour are found to have occurred.	There is evidence that the risk of forced, bonded or compulsory labour has been minimised.

10.4 At the minimum level, the production unit shall ensure that:

a. The contracts are clearly written (where written contracts are required) in a language that workers can understand and are understood by the workers.

b. Workers do not pay fees to work either directly or indirectly through, for example, labour contractors or training credit programs.

c. The employer does not withhold original identity documents of any worker.

d. Workers have freedom to terminate their employment and receive full payment till the last day of their employment.

e. The employer does not withhold any part of the salary, benefit, property or documents of the workers to oblige them to continue working for employer.

f. Workers are free to leave the workplace when not working and manage their own non-work time.

10.5 Human trafficking shall be regarded as forced labour.

10.6 At the target level, the production unit shall ensure that:

a. There is a clear policy against forced, bonded and compulsory labour in place.

b. All workers receive a copy of the policy and understand the policy clearly.

10.7 For micro family businesses, this indicator may be scored through conversations with the family and observations of activities.

10.7.1 In this case, the records and written documents referred to in 10.4 and 10.6 shall not be required.

Discrimination (PI 4.3)

Table 25: PI 4.3 Discrimination

Performance Indicator		Scoring Issue	Minimum	Target
4.3	Discrimina-tion	a. Incidences and risk of discrimination	No incidences of discrimination are found to have occurred.	There is evidence that the risk of discrimination covering all aspects of potential discrimination has been minimised.

10.8 At the minimum level, the production unit shall:

a. Maintain records of hiring, promotions and training opportunities for the workers.

b. Not engage in or support discrimination at any point of the employment stage based on the national origin, religion, disability, gender, sexual orientation, union membership, political affiliation or age.

c. Maintain records available for a minimum of six months.

d. Not interfere with the right to exercise or observe tenets or practices, or to meet needs related to race, caste, national origin, religion, disability, gender, sexual orientation, union membership or political affiliation of the workers.

e. Maintain a register of complaints (including complaints on discrimination) and verify that these records show evidence for no discrimination.

10.9 At the target level, the production unit shall:

a. Have an anti-discrimination policy in place covering all stages of employment which clearly outlines procedures to raise, file and respond to a discrimination complaint in an effective manner.

b. Ensure that the management and workers are clear on the policy and procedures and have received a copy of the anti-discrimination policy and they are able to confirm they understand its contents.

10.10 For micro family businesses, this indicator may be scored through conversations with the family and observations of activities.

10.10.1 In this case, the records and written documents referred to 10.8 and 10.9 shall not be required.

Health, safety and insurance (PI 4.4)

Table 26: PI 4.4 Health, safety and insurance

Performance Indicator		Scoring Issue	Minimum	Target
4.4	Health, safety and insurance	a. Safe and healthy working and living environment for workers	The employer provides a safe and healthy working and living environment (where accommodation is provided) for workers.	
		b. Health and safety records	There is evidence that health and safety related	Hazards to personnel health and safety are

Performance Indicator		Scoring Issue	Minimum	Target
		and corrective action	accidents and violations are recorded and corrective action is taken when necessary. No immediate and serious dangers to personnel health or safety were identified.	known. Accidents are analysed for root causes. The root causes are addressed and remediated to prevent future accidents of a similar nature. All incidences including minor accidents are included. Records are complete and accurate.
		c. Occupational health and safety assessment and personnel training	There is evidence that personnel are trained effectively on health and safety topics related to their role, responsibilities and activities.	Formal and regular training courses are undertaken. Risk assessments are documented and/or certified. Personnel are appointed to apply health and safety risk assessment, which may include an overseeing management committee, first aiders and/or fire marshals. Special risks associated with changing workplace or worker condition, such as expectant mothers, will have due consideration.
		d. Organisation responsibility and insurance provided for personnel accident or injury	No incidences of workers having to cover their own work-related medical expenses.	The 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.

10.11 At the minimum level for scoring issue (a), the production unit shall:

a. Minimise hazards and risks in the working environment.

b. In cases where accommodation is provided, it shall be clean, safe, and meet the basic needs of workers.

c. Ensure that there are not immediate serious dangers and that workers have the right to remove themselves from serious danger without seeking permission.

d. Provide safe drinking water to workers.

e. As appropriate, maintain and use safety equipment (Personal Protective Equipment, PPE).

10.12 For micro family businesses, this indicator may be scored through conversations with the family and observations of activities.

10.12.1 In this case, the records and written documents in scoring issue (b) shall not be required.

Fair and decent wages (PI 4.5)

Table 27: PI 4.5 Fair and decent wages

Performance Indicator		Scoring Issue	Minimum	Target
4.5	Fair and decent wages	a. Fair and decent wages	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.	The organisation pays a living wage and there are no labour-only contracting relationships.

10.13 At the minimum level, the production unit shall ensure that:

a. The production unit is in possession of legal document showing minimum wages for the location where the production unit operates.

b. The production unit maintains copies the contracts, wage records, working hours and signed pay slips of the workers,

c. At least minimum wages are paid to workers.

d. Wages and benefits are rendered in a manner convenient to workers.

10.14 At the target level, the production unit shall:

a. Be aware of the living wage and either use an accepted calculation or calculate it themselves.

b. Ensure that labour-only contracting arrangements, consecutive short-term contracts and/or false apprenticeship or other schemes to avoid meeting its obligations to personnel under applicable laws and regulations pertaining to labour and social security do not take place.

10.15 For micro family businesses, this indicator may be scored through conversations with the family and observations of activities.

10.15.1 In this case, the records and written documents referred to in 10.13a-b shall not be required.

10.15.2 The requirements relating to wages, including 10.13c-d and 10.14 may not be met for actual family members, but shall still be required if the unit employs any non-family workers.

Freedom of association and collective bargaining (PI 4.6)

Table 28: PI 4.6 Freedom of association and collective bargaining

Performance Indicator		Scoring Issue	Minimum	Target
4.6	Freedom of association and collective bargaining	a. Freedom of association and collective bargaining	There are no incidences of the production unit restricting worker access to associate or bargain collectively.	There is evidence that the risk of restrictions to freedom of association and collective bargaining has been minimised.

10.16 At the minimum level, the production unit shall ensure that:

a. Co-signed contracts do not explicitly restrict the right to associate freely.

b. The production unit does not restrict worker access to associate or bargain collectively.

c. Trade unions and/or civil society organisations, where they legally exist, are able to access/inform all workers directly and have access to their members in the workplace at a mutually agreed time with management.

10.17 At the target level, the production unit shall not prohibit workers from accessing trade union and/or worker association, and workers are free of any form of interference from employers or competing organisations set up or backed by the employer.

10.17.1 If a union and/or workers association does not exist or are illegal, the production unit shall demonstrate evidence of their effort to engage in a collective dialogue through a representative structure freely elected by the workers.

10.18 For micro family businesses, this indicator may be scored through conversations with the family and observations of activities.

10.18.1 In this case, the records and written documents referred to in 10.16 shall not be required.

Disciplinary practices (PI 4.7)

Table 29: PI 4.7 Disciplinary practices

Performance Indicator		Scoring Issue	Minimum	Target
4.7	Disciplinary practices	a. Disciplinary practices	There is a policy in place to ensure against abusive disciplinary practices. No incidences of tolerated abuse have taken place.	The risk of potential abuse around discipline has been minimised. There are clearly outlined procedures to raise, file and respond to a complaint of abuse in an effective manner. Management and workers are clear on the policy and procedures. Training is provided to supervisors on acceptable disciplinary measures.

10.19 At the minimum level, the production unit shall:

a. Demonstrate that disciplinary actions taken by the production unit are fair and that there are no instances of abuses (including physical, verbal and/or mental).

b. Provide and ensure the implementation of an anti-harassment and anti-abuse disciplinary action policy.

c. Have and maintain copies of the anti-harassment and anti-abuse disciplinary action policy, which are annexed to the worker contracts, and brief the worker fully on the policy.

10.20 At the target level, the production unit shall:

a. Maintain records of action taken in response to instances of harassment.

b. Provide responses, which are appropriate and intended to prevent re-occurrence.

10.21 For micro family businesses, this indicator may be scored through conversations with the family and observations of activities.

10.21.1 In this case, the records and written documents referred to in the PI and in 10.19 and 10.20 shall not be required.

Working hours (PI 4.8)

Table 30: PI 4.8 Working hours

Performance Indicator		Scoring Issue	Minimum	Target
4.8	Working hours	a. Working hours	The organisation abides at least to the legally required working and overtime laws. All overtime is voluntary.	The organisation abides by industry norms. Overtime is not regular. Workers are provided with at least one day off following every six consecutive days of work.

10.22 At the minimum level, the production unit shall:

a. Keep timesheets or work attendance roll documents signed by workers.

b. Have documentation showing the legal requirements for working hours and overtime in the region where the production unit operates and verify through worker interviews or/and other evidence that the production unit complies with applicable laws related to working hours.

c. Ensure that working hours for overtime hours are voluntary and paid at a premium and overtime occurs only in exceptional circumstances.

10.23 At the target level, the production unit shall assure that:

a. Working hours do not exceed 48 hours including 12 overtime hours per week on a regular basis, as per internationally accepted industry standard.

b. At sea, the workers should be permitted averages over a well-defined working cycle.

c. Working hours at sea are well defined and sea workers abide by them.

10.24 For micro family businesses, this indicator may be scored through conversations with the family and observations of activities.

10.24.1 In this case, the records and written documents referred to in 10.22 shall not be required.

Environmental and social training (PI 4.9)

Table 31: PI 4.9 Environmental and social training

Performance Indicator		Scoring Issue	Minimum	Target
4.9	Environ-mental and social training	a. Environmental awareness and training	Information is delivered to production unit workers about environmental and social issues included in this standard such as disposal of waste, and prevention and management of chemical	There is evidence of environmental and social awareness and training in production unit workers, sufficient for them to properly dispose of waste, and prevent and manage chemical and hydrocarbon

Performance Indicator		Scoring Issue	Minimum	Target
			and hydrocarbon spills, grievance procedure.	spills, or to lodge a grievance.

10.25 At the minimum level, the production unit shall:

a. Provide workers with environmental and social training/education regarding topics relevant to this standard.

b. Record and maintain the training courses and training participants as evidenced by course documentation.

c. Be in compliance with a set of environmental codes of practices and/or management plans, labour practices and social impact.

10.26 At the target level, the production unit shall:

a. Have policies in place to ensure continuing education of workers.

b. Provide incentives that encourage workers to participate in educational initiatives.

c. Demonstrate that workers have the appropriate level of understanding of environmental and social issues.

10.27 For micro family businesses, the indicator shall be scored through conversations with the family and observations of activities.

10.27.1 In this case, the records and written documents referred to in 10.25 shall not be required.

11 Principle 5: Community relations and interaction

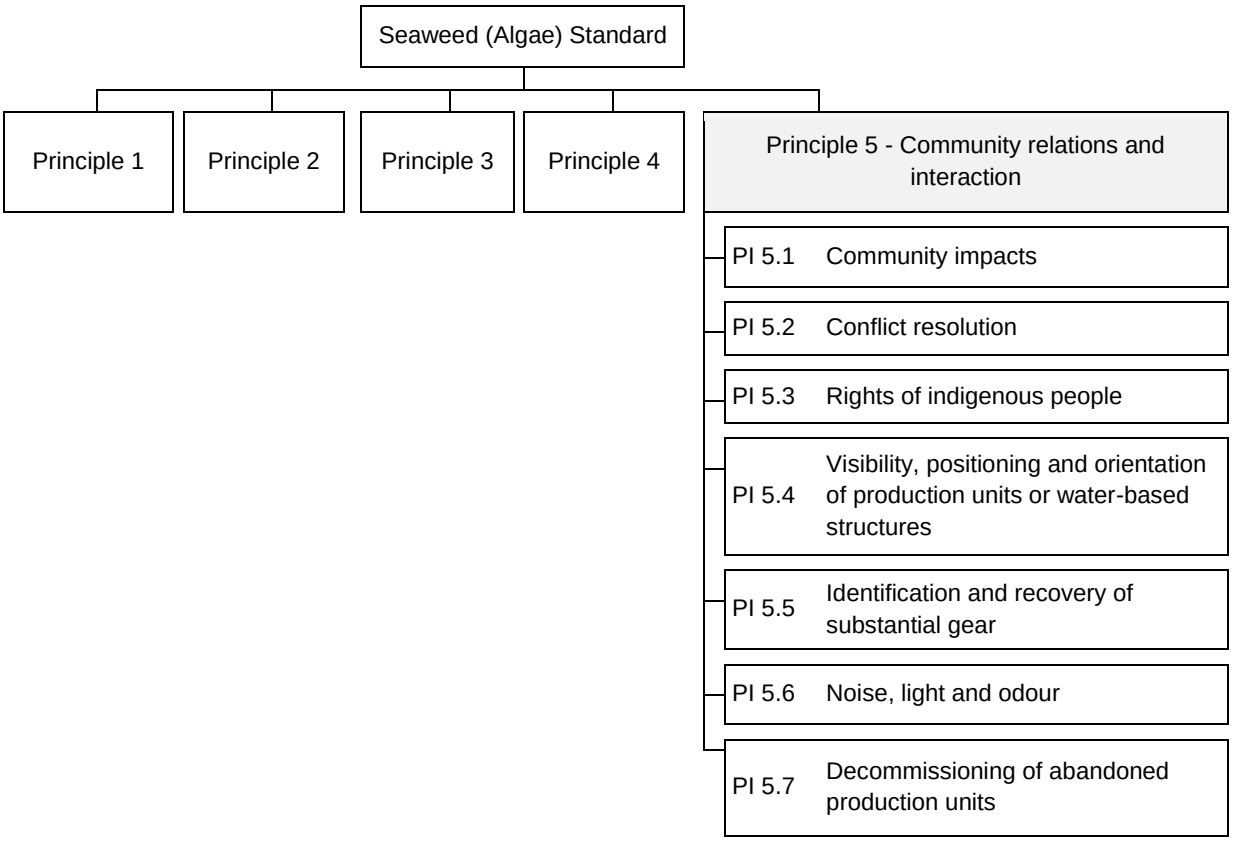

Figure 5: Principle 5 Community relations and interaction

General requirements for Principle 5

11.1 If the production unit has a positive impact on the community and stakeholders, the relevant PIs shall receive the maximum score.

11.2 A production unit may also be considered as a cooperative, association or other grouping of small-scale producers.

Community impacts (PI 5.1)

Table 32: PI 5.1 Community impacts

Performance Indicator		Scoring Issue	Minimum	Target
5.1	Community impacts	a. Community impact	An assessment of the production unit community impact is conducted, and if determined necessary by the assessment, an independent p-SIA is conducted.	Recommendations of the production unit's community impact assessment are being implemented and the production unit is shown to have positive social benefits for the community.

11.3 At the minimum level, the production unit shall ensure that:

a. The impact assessment covers:

i. The process and transparency of communication with stakeholders.

ii. The inclusiveness of the assessment undertaken in such a manner that all stakeholder groups have input in the process, are informed of the results and outcome of such an assessment, and that steps taken and information gathered are openly accessible to all.

iii. The social impact assessment process being participatory and transparent.

iv. The risks and actual impacts of the current or intended production unit and at least two alternatives have been included. One of these is the “no production unit or no expansion” scenario.

v. The inclusion of research and reports of probable impacts likely to be most important.

vi. The consequences of changes.

vii. The recommendations on avoiding issues with the intended production unit or production unit development.

viii. The mitigation and monitoring plans for negative impacts.

b. Representatives from the local community and organisations have confirmed the production unit community impacts.

c. Qualifications and previous participatory consultation of the individual/s carrying out the impact assessment are available.

d. Consultations are meaningful and include participation by representatives from the local community who were asked to contribute to the agenda.

e. The production unit proactively arranges consultations with the local community at least twice per year.

f. Community and stakeholders are consulted and informed of the results of the impact assessment and recommendations.

g. Restricting access to vital community resources is not permitted without community approval.

11.4 For micro family businesses, the impact assessment may be replaced with a written recommendation based on an independent and impartial assessment from the local authority or local leader, covering other resource users/community, the impacts of the production unit on them and any agreed impact mitigation measures.

11.5 At the target level, the production unit shall ensure that:

a. The production unit understands the recommendations from the assessment and implements them.

b. There is evidence of due diligence to prevent and mitigate negative impacts on communities.

c. The production demonstrates positive social benefits for the community such as food security, income, gender equality, education and/or healthcare.

d. Communities (inclusive of both men and women) or people with claims to the resource are involved in the management of the production unit.

Conflict resolution (PI 5.2)

Table 33: PI 5.2 Conflict resolution

Performance Indicator		Scoring Issue	Minimum	Target
5.2	Conflict resolution	a. Resolution of disputes	The management system incorporates or is subject by law to a mechanism for the resolution of legal disputes arising within the system.	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.
		b. Roles and responsibilities	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are generally understood.	Functions, roles and responsibilities are explicitly defined and well understood for key areas of responsibility and interaction/s.
		c. Consultation process	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.	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.
		d. Participation	The consultation process provides opportunity for all interested and affected parties to be involved.	

11.6 At the minimum level for scoring issue (a), the production unit shall:

a. Keep a record of interactions with stakeholders including complaints and ensure that any such complaints are resolved properly.

b. Have evidence that the community has access to effective, fair and confidential grievance procedures.

11.7 At the target level for scoring issue (a), the production unit's conflict resolution system shall be in compliance with national legislation, where this exists.

11.8 At the minimum level for scoring issue (b), the production unit shall clearly identify organisations/individuals in charge of managing conflict resolution and define their roles and responsibilities.

11.9 At the minimum level for scoring issue (c), the production unit shall:

a. Have and follow a conflict resolution policy that provides a mechanism for presentation, treatment and resolution of complaints lodged by stakeholders, community members and organisations.,

b. Demonstrate with community testimonials that this policy has been implemented and there is a shared understanding of procedures for filing complaints.

c. Keep a record of everyone that has received a copy of the policy.

11.10 At the minimum level for scoring issues (d), the production unit shall:

a. Have a management system, which includes consultation processes to seek relevant information from main affected parties.

b. Conduct the consultation processes, in which all the interested and affected parties have opportunity to be involved.

11.11 At the target level for scoring issue (c), the production unit shall hold the consultation process regularly in a transparent manner, including at least two meetings per year to identify and resolve conflicts as evidenced by documentary records including minutes of meetings.

11.12 The production unit shall resolve complaints from the community within 12 months. A conflict is deemed resolved if both parties in the negotiation process have agreed to take it off the agenda (if both parties accept external mediation and/or a legal verdict then the conflict is deemed resolved regardless of whether the mediator or legal decision has been made).

11.13 For micro family businesses, the indicators shall be scored through conversations with the family and observations of activities.

11.13.1 In this case, the records and written documents referred to in 11.6a, 11.9c and 11.11 shall not be required.

Rights of indigenous people (PI 5.3)

Table 34: PI 5.3 Rights of indigenous groups

Performance Indicator		Scoring Issue	Minimum	Target
5.3	Rights of indigenous people	a. Rights of indigenous people	There is evidence that the rights of indigenous people are respected by the production unit (where applicable to growing area) and attempts are made to accommodate their needs.	

11.14 At the minimum level, the production unit shall:

a. Understand relevant local and/or national laws and regulations that pertain to consultations with indigenous groups.

b. Have consulted with indigenous groups and retains documentary evidence (e.g. meeting minutes, summaries, etc.) to show how the process complies with local and/or national laws and regulations.

c. Ensure that the client has documentary evidence of community outreach.

Visibility, positioning and orientation of production units or water-based structures (PI 5.4)

Table 35: PI 5.4 Visibility, positioning and orientation of production units or water-based structures

Performance Indicator		Scoring Issue	Minimum	Target
5.4	Visibility, positioning and orientation of production units or water-based structures	a. Compliance with navigational rules and regulations	Production units allow access for other resource users as prescribed by custom or law.	Production units proactively facilitate access for other water users.
		b. Positioning of production unit sites	Visible structures of production units are arranged in an orientation and position as prescribed by custom or law.	Visible structures of production units are arranged in a uniform orientation and position, except where specified by law.

11.15 At the minimum level for scoring issue (a), the production unit shall comply with navigation regulations and allow access for other resource users.

11.16 At the target level for scoring issue (b), the production unit shall ensure that the visible structures of the production unit are uniformly positioned and oriented and do not impede navigation.

Identification and recovery of substantial gear (PI 5.5)

Table 36: PI 5.5 Identification and recovery of substantial gear

Performance Indicator		Scoring Issue	Minimum	Target
5.5	Identification and recovery of substantial gear	a. Identification of substantial gear	There is evidence that all substantial gear is identifiable to the production unit.	
		b. Gear recovery	There is evidence that gear recovery is conducted by the production unit.	The production unit ensures that they maintain the proper equipment and /or mechanisms for recovering lost gear.
		c. Float use	Float use is recorded by the production unit. Floats are securely attached so that they do not become loose.	

11.17 At the minimum level for scoring issue (a), the production unit shall ensure that:

a. All substantial gear is clearly labelled and identifiable as belonging to the production unit.

b. Any production unit equipment is attributable to the production unit.

11.18 At the minimum level for scoring issue (b), the production unit shall:

a. Maintain a record of effort spent cleaning the receiving shoreline in response to gear loss.

b. Record spans at least a 12-month period prior to the audit.

c. Demonstrate clean-up frequency, which accurately reflects the probability of gear loss based on local conditions.

Noise, light and odour (PI 5.6)

Table 37: PI 5.6 Noise, light and odour

Performance Indicator		Scoring Issue	Minimum	Target
5.6	Noise, light and odour	a. Noise, light and odour	There are some measures that can help minimise operational noise, light and odour as appropriate to local custom.	There is evidence that noise, light and odour originating from the production unit are minimised in areas where it may impact others or as prescribed by law.

11.19 At the minimum level, the production unit shall prepare a list of all sources of noise, light and odour originating on the production unit, which includes actions and measures that need to be taken to reduce them.

11.20 At the target level, the production unit shall:

a. Have managed to minimise noise, light and odour originating from the production unit.

b. Have and maintain designated storage areas and containers, which are appropriate for the materials that create odours.

Decommissioning of abandoned production units or water-based structures (PI 5.7)

Table 38: PI 5.7 Decommissioning of abandoned production units or water-based structures

Performance Indicator		Scoring Issue	Minimum	Target
5.7	Abandoned production units	a. Abandoned production units	There is a mechanism in place for clearing up any unused production units.	

End of Standard

ASC-MSC Seaweed Standard – Guidance

Sustainable and Responsible ▲

The ASC and the MSC have developed a joint standard for sustainable and responsible seaweed wild harvesting and farming. The principles of the standard follow the references of 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, 2011a), and the FAO Technical Guidelines for Aquaculture Certification (FAO, 2011b).

The Code of Conduct for Responsible Fisheries (FAO, 1995) states (in Article 6.1 […]): The right to fish carries with it the obligation to do so in a responsible manner 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, 2011a) 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, he FAO Technical Guidelines for Aquaculture Certification (FAO, 2011b) states:

[…] Aquaculture should be planned and practiced 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 can be therefore defined as aquaculture, which is consistent with sustainable development and sustainable use (FAO, 1999).

Sustainable development can be defined as 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).

G1 Guidance – Wild harvest and farming certification

G1.1 Seaweed ▲

There is no unique definition of the term "seaweed". The term can refer to a diverse group of marine macroalgae (Redmond, 2014), but it can also be the common name used for countless species of marine plants and algae that grow in the ocean as well as in rivers, lakes, and other water bodies (NOAA, 2017).

In this Standard, "marine plants" (e.g. seagrass) should not be considered as seaweeds (= algae), as specified in clauses 1.1 and 2.1.

G2 Guidance – Scope criteria

G2.1 Harvesting of beach-cast seaweeds ▲

Beach-cast seaweeds are considered within the scope of the Standard. The CAB should consider the impacts associated within each Principle as appropriate for this type of production unit.

G2.4 Alien (= non-native species) ▲

According to the Convention on Biological Diversity (CBD), “alien species” refers to a species, subspecies or lower taxon, introduced outside its natural past or present distribution; including any part, gametes, seeds, eggs, or propagules of such species that might survive and subsequently reproduce.

Synonymous terms such as non-native species or non-indigenous species are more precise and should be used in preference to terms as introduced, exotic, feral, foreign, ornamental or weedy species (ISSG, 2017).

A species should be still considered as an alien species if transported into aquatic habitats outside its natural distribution (interpreted as the natural limits of geographical distribution of a species, modified after Zaitsev & Ozturk (2001)), even if that is in the same country. It should be noted that species can be native to some regions of country, but not necessarily to the entire coast (for example due to inadequate environmental conditions for reproduction).

The ASC-MSC recognise the importance of considering the potential impacts associated with the introductions of alien species, even if these are considered varieties or any lower level taxonomic rank of the same species. However, identifying taxonomic levels lower than species can be complex or impractical.

For this reason, and for the purpose of the Standard, movements of different strains, varieties or any lower level taxonomic rank of the same species should not be considered as a scope issue (alien species). Instead, these movements should be considered as a translocations issue (human-mediated movement of living organisms from one area, with release in another) and be scored against PI 1.3 (Genetic impact on wild stocks - risk of impacting the genetic structure of wild populations) and PI 2.8 (Translocation - risk of introducing diseases, pests, pathogens, or other non-native species into the surrounding ecosystem). See Table 3 to determine the specific indicators to be assessed in the case that translocation is occurring.

Unlike the scope criteria in the MSC Fisheries Certification Requirement (FCR) 7.4.4 (MSC, 2014), harvesting and farming of alien species of seaweeds may be still considered within scope, even if the introduction was deliberate, or if the species could be eradicated from the location; or if there is continuing introduction of the alien species being considered for certification to the location, as long as the criteria set in 2.4.1 (20-year timeframe) or in 2.4.2 (land-based facilities completely separated from the aquatic environment) are met.

G2.4.1 Alien species timeframe ▲

A 20-year timeframe has been set to make clear that, noting the risks and uncertainties associated with the introduction of species, the Standard should not support or encourage introductions of new alien species. Only those introductions that occurred a long time before the application for assessment can be considered as within scope. Units that are within scope should still be scored against the specific performance indicators triggered (PI 2.8 translocation and PI 2.9 Introduction of alien species).

The 20-year timeframe is not related to the time needed to detect potential impacts caused by the introduction of the species (e.g. to see if the introduction was safe or not). This depends on the degree of invasiveness of the species, and the (changing) environmental conditions (including changes in the biological community, anthropogenic activities, etc.). The species could invade and cause negative impacts to the surrounding environment after a lag phase that could last one year, 20 years or longer, and for this reason it is not possible to set a precise and objective number of years after which it can be said that an introduction was safe. The timeframe adopted was originally set in the MSC program with reference to the date of adoption of the Convention on Biological Diversity (CBD) requirements on alien species.

Continuous introduction ▲

There may be cases, however, where the alien species is not entirely self-sustaining in its new location (e.g. adverse environmental conditions for reproduction) or if self-sustaining, the population is not large enough to provide a regular supply of seed in the amount and quality necessary to support a continuous farming activity. In that case, a production unit may rely on regular seed supply (e.g. annual, biennial) from either their own farm after a hatchery stage or introduction from their original source. In both cases, this may be considered as a type of continuous introduction.

Farming activities that rely on the continuous introduction of an alien species may be still considered within scope of the Seaweed Standard, if the first introduction into the country occurred at least 20 years prior to the date the application is made for assessment against the Standard (as required in 2.4.1) and the farming activity has been continuously working since then.

G2.4.2 On-land facilities completely separated from the aquatic environment ▲

It is assumed that the risk of culturing alien species in on-land facilities completely separated from the aquatic environment is reasonably low, provided that an adequate strategy is followed to maintain such separation. For this reason, an exception has been provided in this case, so that instead of a scope criteria, the assessment is focused on whether adequate strategies are in place to prevent progression of ecosystem impacts from occurring due to the presence of the alien species (PI 2.9 Introduction of Alien Species).

G3 Guidance – Unit of Assessment and Unit of Certification ▲

The **Unit of Assessment (UoA)** refers to the extent of the specific production unit area that is to be assessed for compliance with the Standard and should include the target stock/s harvested and/or the farming area and species cultured.

In contrast, the **Unit of Certification (UoC)** is the unit entitled to receive an ASC or MSC certificate if the assessment is successful. Differences between the two arise in cases where some entities are included in the UoC that may access the certificate and are not included in the ecological/social assessment covered by the UoA.

No certificate sharing options are intended for the seaweed certifications.

Unit of Assessment (UoA)

G3.2 (a) ▲

Target species**/**s are those seaweeds that are assessed under Principle 1 of the Standard. Only the target species**/**s from the UoA are eligible to carry the ASC/MSC logo. It is required that harvesting of seaweeds is at a level that is sustainable for the whole “stock” of the target species.

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 and other species organised 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 can be treated and managed as an independent unit (e.g. “Unit of Management”), if 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 large 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.

G3.2 (c) ▲

A smaller well-defined area, water body/bodies or site/s can be, for example, those leased for seaweed production, and, therefore, managed as an independent unit.

Unit of Certification (UoC)

G3.4 ▲

Such other client group members could include non-governmental organisations (NGOs), or seaweed processors or their agents, who are contributing to the cost of the assessment, but are not part of the management of the actual production unit.

Scale and cumulative impacts of the UoA(s)

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.

The definition of the largest logical unit in relation to the potential wider impacts is therefore encouraged. For example, if a single farm in a single bay is proposed for assessment, the client may consider including the whole bay in the UoA, 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. The options for setting the UoA should be discussed with the client, and allow for the current and future relationships with surrounding farms.

G3.6 ▲

The clients should be aware of the risk that if their farm is certified, there is the potential for other farms to develop, which may increase the level of interference with the surrounding environment, making a renewed determination of applicable scores necessary, and therefore there is the potential to have the certificate suspended or lost unless appropriate action is taken for the new, larger UoA. This is similar to the approach in MSC fisheries in FCR 7.4.6-12.

G3.7 ▲

The UoA should cover the full stock range of those seaweeds that are assessed under Principle 1. The area of the stock should be defined geographically. It should recognise the ability of the client to manage the local stock, and does not need to extend to the full range of the stock that could be recognised on a genetic basis.

G3.7.1 ▲

The term seed refers to the vegetative propagules (cuttings) and spores, or gametes and zygotes, which can be used as planting materials. These seed stocks may come from natural stocks or from cultivation (Trono, 1990). Two methods are normally used in the production of sporelings from spores: natural spore-recruitment and induced spore-shedding in hatcheries.

A sporeling is a young plant or fungus produced by a germinated spore, similar to a seedling derived from a germinated seed. Such sporelings occur in algae, fungi, lichens, bryophytes and seedless vascular plants.

The production of sporelings from spores requires some skill in recognising fertile materials. Fertile materials are selected from available stocks, which should be defined as part of the UoA (see G3.2).

G3.8 ▲

Principle 2 assesses the impacts of the UoA on the surrounding ecosystem. Clauses 3.8–3.8.3 confirm the expectations for the assessment of the cumulative impacts of multiple production units within the near vicinity of each other. Assessments must allow for the joint impacts of the current UoA, plus any existing certified UoAs (not those that are currently in assessment), at the scale at which such impacts could be jointly significant.

Impacts on species, habitats and ecosystems (as per 3.8.1) must consider other UoAs that operate within the geographic distribution of such entities, at the stock or ecosystem level. The impacts

considered in 3.8.2 may occur at a more local level on the receiving water body, and should consider other UoAs that operate within the same receiving water body. The receiving water body assessed in relation to the impacts of waste and pollution may be smaller than that considered in relation to the impacts of diseases and pests due to the ability of the latter to transmit across larger distances, while the former impacts reduce due to dilution.

PIs in Principle 2 should be scored against the impacts produced by the harvesting and farming activities under assessment only (i.e. the UoA) and cumulative impacts from other previously certified ASC-MSC Seaweed UoAs. This is stated in the definition of Principle 2 and more specifically in 3.8-3.8.3 and the wording of the scoring issues.

Requiring the cumulative assessment of all activities in an area (beyond the ASC-MSC Seaweed units) would discourage any production unit to enter assessment, since those impacts are out of the control of the production unit. The Standard therefore does not consider the impacts of other non-ASC-MSC Seaweed UoAs. This approach may be reviewed at a later stage.

G3.9 ▲

When assessing the performance of UoAs under Principle 3, the team should consider the institutional and operational framework appropriate to the size and scale of the UoA for implementing Principles 1 and 2.

G3.10 ▲

The persons, entity or entities that are part of the UoC should all comply with the social and community requirements set out in Principles 4 and 5.

G3.11.1 ▲

Processing activities should be considered as within scope of the UoA if the product has not changed ownership, the processing takes place within the close proximity of the production sites, and is conducted by the same people engaged in the harvesting.

G4 Guidance – Group and multi-site assessments ▲

The Group and Multi-Site Certification Requirements allow a reduced number of onsite visits, subject to a risk assessment.

G5 Guidance – Traceability ▲

This section covers the traceability requirements that are applicable to client group members that are part of the production unit of certification (e.g. the farm owner/manager, or vessel owner). In some cases, the CAB may decide that the production unit and/or other client group members (e.g. the processor) need to have their own CoC certification.

G5.5 ▲

There are restrictions on which companies are eligible to store and/or buy under-assessment product. The requirements are described in the MSC Chain of Custody Standard, Section 5.6. When applied to seaweed this enables entities in the UoA and UoC client group members to store/buy under-assessment seaweed.

G6 Guidance – The Assessment Tree

Seaweed production categories ▲

The five seaweed production categories are defined based on the degree of dependence on the wild stock. Each of the five categories triggers the scoring of a different set of indicators as indicated in Table 3.

Examples of seaweed production units in each of the categories are presented below.

Example 1 of **category A**. Harvest of natural populations of seaweeds. ▲

- Species name/s: *Ascophyllum nodosum*
- Common name/s: Rockweed/bladderwrack
- Region: Both sides of the North Atlantic Ocean
- Main product/s obtained: Fertilisers/animal feed/plant stimulant
- Destination of the product (exported/local market): local and exported

Brief description of the production system:

In New Brunswick (Canada), harvesters use small boats from which they conduct their hand-harvesting activity with a rake. The use of mechanical harvesting boats, as previously used in Nova Scotia, is not allowed.

Example 1 of **category Bi**. Cultivation of seaweeds at sea. Seed supplied from the wild stock required. In this example, cultivation of seaweeds is entirely at sea, not requiring land-based hatcheries. ▲

- Species name/s: *Gracilaria chilensis*
- Common name/s: Pelillo
- Region: Central and southern Chile
- Main product/s obtained: Agar
- Destination of the product (exported/local market): exported

Brief description of the production system:

All planting techniques rely upon the capacity of *Gracilaria* to develop an underground thallus system, which anchors the algae to the soft bottom. After planting, beds are maintained by vegetative growth from the underground thallus system, which can survive burial for several months. Harvesting frequency, planting biomass, and spatial arrangement of the inoculum are important factors that determine the production capacity of a farming area. Different tools for harvesting *Gracilaria* in subtidal systems have been tested either from boats or by divers, demonstrating the relevance of not altering the sandy bottom and reducing the underground thallus system. In general, a portion (10-20%) of the harvested biomass is used for replanting or restoring the seaweed-farmed bed. Because of a potential productivity loss due to the “aging” phenomenon of the clonal seaweed planted, a spore-seeded ropes technique was developed.

This technique has also allowed the avoidance of the use of sand-filled plastic tubes in recent years.

Example 2 of **category Bi**. Cultivation of seaweeds at sea. Seed supplied from the wild stock required. In this example, the production system does require some stages cultivated in land-based hatcheries followed by grow-out at sea. ▲

- Species name/s: *Saccharina latissima* (similar process with *Alaria esculenta*)
- Common name/s: Sugar kelp (winged kelp)
- Region: Both sides of the North Atlantic Ocean
- Main product/s obtained: human food, cosmetics, animal feed, biochar
- Destination of the product (exported/local market): local and exported

Brief description of the production system:

Sporophytes of *Saccharina latissima* become reproductively mature in late summer in the Bay of Fundy, New Brunswick, Canada. Large dark, elongated spots appear in the middle of the blades: they are sori containing thousands, if not millions of spores. Individuals with large sori are collected at low tide. It is estimated that 100 individuals of *S. latissima* can release as many as 8.8 billion spores, and 100 individuals of *A. esculenta* as many as 7.2 billion spores, enough for inoculating several kilometers of twines.

The dark sori are cut and stored overnight. They are then dried for several hours and, then, immersed in seawater. This rapid re-hydration triggers the released of millions of spores. The spore solution is inoculated on twines spooled on PVC pipes in culture tanks. Spores germinate into female and slender male microscopic filamentous gametophytes on the spools. After male gametes have fertilised female gametophytes, each zygote develops into a microscopic sporophyte.

In the fall, young sporophytes, 0.5 to 1 mm in length, are ready to be transferred at the aquaculture sites. Ropes are attached to rafts or buoys when they are deployed at the sites. Ropes of adult sporophytes (several meters long) are harvested between May and July of the next year (*Alaria* is ready first and then *Saccharina*).

At this stage of commercialisation in North America and Europe, wild stock most often still supplies the reproductively mature sporophytes for the next season.

Example 1 of **category Bii**. Cultivation of seaweeds at sea. Seed supplied from the wild stock NOT required or negligible. In this example, cultivation of seaweeds is entirely at sea, not requiring land-based hatcheries. ▲

- Species name/s: *Eucheuma/Kappaphycus*
- Common name/s:
- Region: Indonesia/The Philippines/Tanzania (Zanzibar)
- Main product/s obtained: Carrageenans
- Destination of the product (exported/local market): exported

Brief description of the production system:

The sites should be sheltered, away from freshwater sources, with moderate water movement (current and wave action). The bottom substratum should be firm to support the different culture infrastructure systems. Water depth at low tide should not be too important (0.6 to 1.0 m) to reduce labour costs (reduce diving) and equipment costs. Sites are generally subdivided into small family plots. Three cultivation methods have been developed for *Eucheuma/Kappaphycus*:

1. The fixed off-bottom monoline method: lines with attached pruned fragments of the species selected are attached to wooden stakes. The lines are around 0.3 to 0.5 m from the ground.
2. The floating raft method (in deeper water and irregular bottom topography): the monolines are attached to wooden frames using bamboo as a floatation device. Rafts are anchored to the bottom substratum at the end corners. Several rafts can be joined together as a unit.
3. The floating long line method (in deeper water and irregular bottom topography): monolines are attached to bamboo, which are 5 m apart. The system is anchored to the bottom substratum at regular intervals and at the corners.

In good farming areas, crops can be harvested at six to eight week intervals.

The harvested crops are cleaned of foreign materials (old tie-ties, weeds, marine animals, monolines, etc.), spread on drying platforms (usually made of bamboo slats or fine mesh nylon nets) or village grounds and sun-dried.

Seedlings of new monolines are generally fragments from previously harvested monolines re-attached to the new lines, often by what is called the “tie-tie” technique.

Supply from the wild stock is generally not required, or negligible.

Example 2 of **category Bii**. Cultivation of seaweeds at sea. Seed supplied from the wild stock NOT required or negligible. In this example, the production system does require some stages cultivated in land-based hatcheries followed by grow-out at sea. ▲

- Species name/s: *Pyropia spp.* (formerly known as *Porphyra spp.*)
- Common name/s: Nori (Japan), Zicai (China) and Kim (Republic of Korea)
- Region: Japan, China and Republic of Korea
- Main product/s obtained: human food (sushi)
- Destination of the product (exported/local market): local and exported

Brief description of the production system:

Pyropia has a heteromorphic life history with a diploid filamentous stage found in calcareous shells (*Conchocelis* phase) and a haploid foliose phase that is in demand for the human food market and is cultivated at sea.

In Asia, in general, the cultivation process starts in spring (March to April) from *Conchocelis* grown on dead mollusc shells or on artificial substrata made of transparent vinyl films covered with calcite granules that substitute mollusc shells. The shells, or the artificial substrata, are placed on the bottom of shallow tanks filled with seawater. This filamentous phase grows and becomes fertile by manipulation of temperature, light photoperiod and dissolved inorganic nutrients.

As the *Conchocelis* phase becomes fertile, the spore release is triggered, generally, by stirring using compressed air bubbling or by lowering the temperature of the water. Most of the commercial activity starts by seeding the *Conchocelis* spores (conchospores) on nets that can be moved into the sea by autumn. The nets have a mesh size of 15 cm and are 18 to 45 m long and 1.8 m wide. The conchospores are seeded in outdoor or hatchery tanks.

In outdoor conditions, seeding is done in nursery grounds by setting up 12 to 16 nets on a support system. The substrata carrying the fertile *Conchocelis* phase are placed on plastic bags and hung under the nets. The conchospores float in the water and get attached to the nets.

If the seeding is done on land facilities, the nets are fixed on a rotatory wheel that rotates inside a seeding tank containing in the bottom the fertile *Conchocelis* phase. The rotations of the wheel in the water suspend the conchospores and they get attached to the nets.

The seeded nets are, then, stacked into bundles of four nets. These net stacks are transferred to the sea for nursery cultivation. During this early stage, the nets are raised out of the water to expose young thalli to air and sun to inhibit the growth of fouling organisms. Different types of floating systems have been developed to lift the nets. Once the *Pyropia* blades reach 2 to 3 mm, the nets can be brought to the farming site.

Generally, farmers have moved from the fixed pole method used in shallow intertidal areas to floating systems allowing to culture of *Pyropia* in deeper waters. The grown *Pyropia* blades can reach 15 to 30 cm in about 40 days of cultivation. Then, the algae are mechanically harvested and the remaining biomass attached to the nets is allowed to regrow and may be ready for a second harvest after another 20 days.

Several harvests can be carried out on the same nets in one growing season and then other nets can be placed at the same site to extend the harvesting season. The harvested crop is washed and transferred to a nori-processing facility, where blades are cut and dried into rectangular sheets that are then ready for market.

Japanese, Chinese and Korean scientists participated in the generation of large-scale production of conchospores through controlled cultivation of the *Conchocelis* phase of *Pyropia tenera* and later of other *Pyropia* species.

Exotic *Pyropia* species were introduced and numerous strains were selected to improve the crop and broaden the geographic area used for cultivation. Moreover, freezing (-20°C) of small seedlings germinated on nets was a major technical breakthrough in 1965-1966, which stabilised the nori production and greatly extended the farming season.

NOTE: Kelp cultivation (*Saccharina japonica* and *Undaria pinnatifida*) in Japan, China and the Republic of Korea may be considered in this same category. Farming technology is similar as that described for sugar kelp (*Saccharina latissima*) but in Asian countries farmers can start from selected strains maintained in germoplasm stages and, therefore, not requiring supply from the wild stock.

Example of **category Ci**. Cultivation of seaweeds entirely in land-based systems. Seed supplied from the wild stock required. ▲

- Species name/s: *Gracilaria tenuistipitata*
- Common name/s:
- Region: Southern China
- Main product/s obtained: human food, animal feed (abalone) and agar production
- Destination of the product (exported/local market): local market

Brief description of the production system:

Using the clonal propagation capacity of *Gracilaria* species, *G. tenuistipitata* is cultivated in earthen ponds using shrimp farm effluent and ambient seawater in the south of China and other south-east oriental countries like Malaysia and Thailand. The ponds are generally rectangular from about 20 m^2 to about one tenth of a hectare and their depth can vary between 20 and 100 cm. In general, the ponds are uncovered (they could be covered only during heavy raining periods) and may be in some cases aerated. The farming activity starts by placing *G. tenuistipitata* fragments in the ponds in April at a density of 5,000 kg per hectare. The fragments are strewn evenly in the pond bottom and they are covered by an old fish net to prevent drifting. Water in the pond is exchanged every two to three days after planting. Other seaweeds must be removed from the ponds at least three times per year. In addition, milkfish or tilapia can be co-cultured with *G. tenuistipitata*, mostly not for profit, but usually for controlling green and bluegreen algal blooms. When these weeds are consumed, fish must be removed from the ponds to prevent them from grazing on *Gracilaria*. However, there has been some demonstration that co-culture of *Gracilaria* and fish can increase the profitability of this farming activity. The ponds are usually fertilised with urea or fermented pig manure to accelerate the growth of the seaweeds.

Harvesting takes place, in general, between June and November, and takes place every 10 days. The algae are collected by hand or using scoop nets. Harvesting stops in November since plants stop growing between December and March. The harvested algae are washed and sun-dried if they are used for the agar market, or sold fresh for food on local fish markets or to abalone farmers. There is no information in relation to the requirements of initial biomass for starting again the culture every year. This may be relevant as the cultivation is not continuous along the entire year.

Example of **category Cii**. Cultivation of seaweeds entirely in land-based systems. Seed supplied from the wild stock NOT required or negligible. ▲

- Species name/s: *Chondrus crispus*
- Common name/s: Irish moss
- Region: Nova Scotia, Canada
- Main product/s obtained: condiments in human food
- Destination of the product (exported/local market): mostly Japan

Brief description of the production system:

This is a land-based tank system based on growing one strain of *Chondrus crispus*, isolated several decades ago. Each year, tanks are “re-seeded” from an inoculum kept in-house. Seawater for the tanks is pumped from the shore, and may require fertilisation (nitrogen and phosphorus) and CO2 addition to maintain a high productivity. The whole operation seems to run on regeneration of the biomass each year from an inoculum kept in-house.

G6.4.1 ▲

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 normally be 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 the team 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 impact the parent stock, the team should not score the PIs related to stock status and their management (categories Bii and Cii). The team should include a sound rationale for this decision in the announcement template and assessment reports.

Examples of seed supply taken from wild stocks, which may be regarded as having negligible impacts (Redmond, 2014).

Example 1. Spores for seeding kelps. To obtain spores for seeding kelps, reproductive sorus tissue from wild plants can be collected and processed in the laboratory. Mature sorus tissue can produce millions of spores per plant. Therefore, sufficient spore numbers for seeding can be acquired from just a few ripe plants from the wild. Moreover, sorus tissue can be cut from whole plants, leaving the lower portion of the plants intact to regrow.

Example 2. Natural spore recruitment. In this method, artificial substrates such as ropes, rocks and netting materials are used. Ropes and netting materials are generally preferred. The ropes are anchored or tied to wooden stakes among dense populations of *Gracilaria*. These are left in the area for about two weeks to allow the naturally shed spores to settle on them. The sporelings developing from the spores become visible after three to four weeks. The seeded ropes or other materials are then transferred to the culture sites for outgrowing.

G6.5 Applicability of PIs ▲

G PI 1.3

Cultivation of seaweeds entirely in land-based systems is expected to have negligible discernible impact on the genetic structure of the population. Therefore, this PI would not normally be scored in categories Ci and Cii. It is, however, necessary, in any case, for the team 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).

Scoring and conditions

G6.8 ▲

Scoring procedures are primarily covered in the CAR. The key requirements are also summarised in this section of the Standard, particularly the allowed number of conditions per principle given in Table 4, which defines the threshold required for a production unit to be certified.

The minimum level is equivalent to the current MSC Scoring Guidepost (SG) 60 level, and the target level is equivalent to the MSC SG80 level.

G6.12 ▲

To achieve certification, any critical condition must be closed out during the audit process, such that all PIs meet at least the minimum level and there are not more than the maximum number of conditions allowed in each Principle given in Table 4 of the Standard. (See CAR Section 17.11 for further details on scoring.)

Use of risk-based methods for data-deficient UoAs ▲

G6.14 RBF in Principle 1

There are many ways in which status and trends in stocks may be evaluated that fall short of the highly quantitative and data-demanding approaches to stock assessment often used for large scale fisheries in developed countries. Use of less elaborate methods for stock assessment should not preclude seaweed production units from possible certification. 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 the resources will be required which may necessitate lower levels of utilisation of the resource (FAO, 2009).

In the absence of proper limit and target reference 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).

An example of factors and risk category classification considered can be seen in Table 39. This table is based on the methodology described in the FairWild Standard version 2.0 (FairWild Foundation, 2010) required to achieve FairWild certification. The intention is to assess the susceptibility or resilience of a seaweed species to collection. Based on the available information, the state of each attribute of susceptibility or risk is classified on a three-level scale of low, medium or high risk. This overall assessment is made according to a quantitative weighting system (details of which are not yet included here), to ensure that the system overall can be applied in a more rigorous and standardised way for all species.

Note, that this should be considered as an example and although a Productivity Susceptibility Analysis (PSA) could be developed to ensure consistency of the RBF, the required attributes and risk levels have not been developed yet, and would require calibration before being implemented.

Table 39: Example of Productivity and Susceptibility attributes potentially useful to be assessed in a risk analysis process (Chopin & Buschmann, 2016)

Attribute		Low risk	Medium risk	High risk
Productivity	Habitat specificity	Euryoecious species for habitat types and many environmental conditions	Species relatively tolerant to various and changing habitat types and environmental conditions	Stenoecious species for habitat types and many environmental conditions
	Regeneration	Species with high regenerative capacity,	Species with relatively high	Species with low regenerative

Attribute		Low risk	Medium risk	High risk
		fast growing after pruning or cutting	regenerative capacity, relatively fast growing after pruning or cutting	capacity, slow growing after pruning or cutting. Species not amenable to pruning or cutting and requiring going through a full sexual life history
	Reproduction	Asexual reproduction predominant. Monoecious species with no male/female incompatibility. Large release of reproductive organs for a lengthy period of time	Asexual and sexual reproduction both possible. Monoecious species with male/female incompatibility. Dioecious species with relatively simple life history. Relatively large release of reproductive organs for a relatively lengthy period of time	Sexual reproduction predominant. Dioecious species with complicated life history (mostly in red and brown seaweeds). Limited release of reproductive organs for a short period of time
	Dispersal of reproductive organs	Species with high dispersal capabilities (mostly green seaweeds)	Species with moderate dispersal capabilities	Species with limited dispersal capabilities (mostly red and brown seaweeds)
Susceptibility	Conservation status (local, national, global)	[To be developed]	[To be developed]	To be developed]
	Plant part collected	[To be developed]	When only reproductive tissue parts are removed (like sori or sporophylls in some kelps) and the rest of the organisms/population is left in place	When the whole organisms are harvested or if the harvesting practices do not allow time/rotation for biomass/population recovery
	Geographic distribution	Globally distributed. It depends, however, on what one recognises as an entity. If you consider species/varieties/cryptic species, etc., the distribution may not be as global and the risk increases	Regionally distributed	Locally distributed (highly endemic)

Attribute		Low risk	Medium risk	High risk
	Local population size	Large size, abundant, homogeneously distributed	Medium size, relatively abundant, some heterogeneity in the distribution	Small size, rare, highly heterogeneously distributed
	Threat causes	None known or likely to exist. No habitat loss. No loss of ecosystem structure, productivity, function and diversity	[To be developed]	[To be developed]
	Scale and trend of use and trade	Restricted/local uses. Trade low or decreasing. Abundant	Several/regional uses. Trade medium or slowly increasing. Relatively abundant	Several and competing/regional or global uses. Trade high or increasing rapidly. Not abundant and experiencing shortage of supply

G7 Guidance – Principle 1: Sustainable wild seaweed stocks

General requirements ▲

Seaweed harvest should promote the maintenance of the diversity and availability of seaweed 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). The same would apply to farms in which supply from wild stock is required (Categories Bi and Ci).

G PI 1.1 Stock Status ▲

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 A., 2004)). The assessment team will determine, based on the information available, whether the “stock under consideration” is overharvested or not, and is maintained at a level which promotes the objective of optimal use and maintains its availability for present and future generations, considering that longer-term changes in productivity can occur due to natural variability and/or impacts other than harvesting (modified from FAO (2009)).

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 significantly affecting 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).

Although management of wild harvest of seaweed 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 seaweeds harvested, are

the harvesting method/s 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 five years), limitation of depth of harvesting, etc.), other external factors such as the abundance of seaweed grazers (e.g. sea urchins), or local environmental conditions.

The measurement of MSY also depends on the biological characteristics of the species considered, and may be different from species to species (Chopin & Buschmann, 2016).

If the individuals of a species can recover and re-grow after cutting or harvesting (e.g. *Ascophyllum*, *Gracilaria*, *Gelidium*), it is possible to have an estimation of the biomass needed to allow the population to regrow. In this case, a proxy for MSY may be estimated in terms of the biomass per unit area (kg m^{-2}) that remains in the environment. The actual value/threshold will vary with the different species considered (Chopin & Buschmann, 2016).

If the individuals of a species do not regenerate after cutting or harvesting (e.g. *Lessonia*), the recovery of the population will depend on the reproductive individuals not harvested and if they can maintain their reproduction to produce enough propagules/spores/gametes to reseed the substratum and allow the harvested population to recover. In this case, recovery will take more time and the requirement is that a certain density of individuals stays in the environment. The proxy could then be the number of reproductive individuals which is influenced by the size of the individuals, their reproductive organ output and the dispersal capacity of the propagules/spores/gametes (Chopin & Buschmann, 2016).

For the reasons noted above, apart from assessing standing biomass and harvesting levels (biomass removal) in relation to MSY (or proxy), it would be appropriate to assess other relevant information to determine whether the harvesting impact causes significant change to the wild population, as required in the alternative language provided in PI 1.1. Therefore, in some cases, scoring PI 1.1 using a Risk-Based Approach (RBF), along with the assessment of the existing harvest strategy, might be sufficiently precautionary to ensure the sustainability of the wild stock.

G PI 1.2 Harvest strategy ▲

First, management measures should include or consider the total harvesting of seaweeds from all sources. Management targets should be consistent with achieving MSY (or a suitable proxy), or a lesser harvesting level if that is optimal in the circumstances of the harvesting activity.

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.

Examples of measures

Examples of commonly used measures (Werner, 2004) that can be effective in achieving management objectives are listed below:

a. Setting a percentage of standing stock (assessed biomass) allowed to be harvested per year specific to the species. 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. The percentage will depend on the stock. If quotas are introduced, detailed figures of the standing stock are essential, as well as measures to control the compliance with quotas.

b. Provision from the management body 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 seaweeds 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.

c. Setting a minimum cutting height, allowing sufficient biomass to remain to preserve the stature and ecosystem function of seaweed stands; biomass regeneration in a few years; sufficient canopy to prevent desiccation and regulate temperature of organisms inhabiting seaweed beds at low tide; and providing refuge from predators for organisms inhabiting beds at high tide.

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

e. Requirement for a harvesting license. It can be issued for up to a number of years (e.g. five years) but only if the licensed area and neighbouring areas can withstand the harvesting impact without negative effects on the ecosystem.

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

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

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

i. Requirement to register harvesters and harvesting boats.

j. Requirement to inform in advance (e.g. one month before harvesting) the relevant administration which area/s will be harvested.

k. Requirement to write a harvesting diary stating dates, sites and quantities harvested. The harvested quantity per year must be reported to the relevant administration.

l. Controlling landings of seaweeds.

m. Requirement for sector holders (in case that this figure exists) to submit a current list of harvesters to the management administration prior to harvest, and to notify the administration of any changes to the harvester list prior to any new harvesters collecting seaweeds.

n. Requirement for sector holders (in case that this figure exists) to submit relevant information: logbooks, amount removed the previous year (in addition to required landings); noteworthy information relevant to stature, long-term sustainability, and ecosystem function of seaweed stands in the sector (e.g. ice scour or natural loss); general description of where harvesting occurred in the previous year.

o. Monitoring of harvested areas combined with research programmes as means of managing the resource sustainably.

Factors to be considered

It must be stressed that these are just examples and that the actual effectiveness will depend on the biological characteristics of the species considered. Seaweed species might differ in various biological aspects (e.g. growth, longevity, habitat forming aspects, etc.). For example, some “wild” seaweeds are annuals (and it might be adequate to harvest a large proportion of the standing stock after spore release), whereas other species are bi-annuals or perennials (e.g. five to 15 years).

Therefore, the management plan should be unique to the biology of the seaweeds to be harvested. In assessing the robustness and precautionary elements of the harvest strategy for seaweeds, it should be assessed whether the measures in place consider:

a. The biology of the species (e.g. growth, longevity, habitat forming aspects, sexual or asexual reproduction abilities).

b. The time required for regeneration of seaweeds, especially with respect to the application of fallow periods.

c. Potential differences in plant growth (length) and age distribution of seaweed populations at different sites along the coast (it could be found, for example, that with 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)).

Combination of factors and potential strategies

Examples of strategies suggested, depending on the factors considered, along with the justification for their use, are given in Table 40. Again, these should not be considered as strategies that

demonstrate per se effective management of the stock. That is, the evidence of their appropriateness and effectiveness for the UoA considered shall be demonstrated in any case.

Table 40: Examples of factors potentially relevant to the design of seaweed harvesting strategies. (Chopin & Buschmann, 2016)

Factor	Justification	Example of (potential) sustainable strategy
Perennials vs annuals	When defining a harvest strategy, it is important to consider whether the harvested species is perennial or annual because the recovery time should be different due to different reproductive strategies.	Best management practices for annual species would be: harvesting seasonally after the algae have become reproductive and shed their reproductive organs. Best management practices for perennial species would be: harvesting at a certain size after allowing the algae to have reproduced at least once.
Species with and without regenerative capacities	Species that regenerate can be cut (with a minimal size) to allow recovery. Conversely, species that do not regrow after cutting should be harvested completely (leaving a holdfast will maintain the substratum occupied, but will not allow recolonisation).	Best management practices for species with regenerative capacity would be: harvesting but maintaining a minimal size/biomass that allows for the recovery of the population. Best management practices for species with no regenerative capacities would be: harvesting but leaving behind a number of individuals that can sustain the population though the production of enough propagules/spores/gametes.
Typical of marine organisms, seaweeds generally release large amounts of reproductive organs (asexual or sexual)	Most seaweeds have external reproduction where the organs are released in seawater, and, hence, diluted. To increase the chance of successful reproduction, seaweeds release very large amounts of asexual (spores/propagules) or sexual (gametes) reproductive organs.	Best management practices for wild-harvested species would be: harvesting after the reproductive period has naturally occurred (it can vary by several weeks from year to year, depending on environmental conditions) so that natural beds are maintained. Best management practices for farmed species would be: harvesting before individuals become reproductive and start to broadcast their asexual or sexual reproductive organs, which can lead to colonisation of any new substrate. There is, generally, a strong seasonal component in the reproductive strategy of each species and they can vary significantly between species.
Location of the reproductive organs in the organism	Knowing where the reproductive organs are located could lead to harvesting certain parts of the thalli, while leaving others in place.	The best management practices will vary depending on if one wants to leave the organs/parts of organism in place for reproduction to occur (wild harvest) or to remove them to prevent reproduction to occur (farming). Reproductive parts can also be specifically collected when a hatchery phase is necessary in the cultivation process. However, as in many seaweeds the reproductive structures are spread along almost the whole thallus, most often harvesting techniques cannot separate the vegetative biomass from the reproductive parts.

G PI 1.3 Genetic impact on the wild stock ▲

Risks from translocations

The issue of translocation 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 collected from other regions or harvesting excessive amounts of seed locally, an assessment is necessary to determine if the way the wild seed is collected for grow-out adversely affects recruitment or demography of local seaweed populations.

Translocations of native species among different geographic areas can also pose risks to the genetic diversity of wild populations. While there may be 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 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 impact on wild stock (PI 1.3).

Risks from hatchery-based operations

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. This is brought about by intentional or unintentional artificial selection ("domestication" selection) in the hatchery environment.

Environmental plasticity is notorious in seaweeds, as well as the existence of cryptic species. However, identifying genetic impact could be done today with molecular markers (e.g. microsatellite studies). Costs are going down and results can be obtained quickly when the right laboratories are used for analyses. However, for many species there is still a lot of preliminary work required, as these markers remain to be identified and validated (Chopin & Buschmann, 2016).

G8 Guidance – Principle 2: Environmental impacts

G PI 2.1 Habitats ▲

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

All critical habitats in marine and freshwater ecosystems, such as wetlands, mangroves, reefs, lagoons, and nursery and spawning areas that could be impacted by seaweed harvesting or farming should be protected and rehabilitated as far as possible and necessary. 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, 1995).

On some occasions, harvesting or farming of seaweeds occurs in areas with critical habitat essential for endangered species' survival. To preserve local biodiversity, it is important that the team considers potential risks that the harvesting and farming operation pose to such critical habitats.

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 harvesting but this part delivers the greatest ecosystem services, then this should be considered in the assessment.

G PI 2.1a Seaweed-habitat status ▲

Sustainability of seaweed harvesting should also consider the role of the seaweed as habitat for other species and its role in coastal estuarine ecosystems. In particular, kelps (*Laminariales*) and rockweeds (*Fucales*), are foundational species that form underwater forests and thus support a diverse vertebrate, invertebrate, and algal community—including important commercial species—and deliver organic matter to coastal ecosystems (Seeley & Schlesinger, 2012).

To determine if the structure and function of the seaweed habitat have been seriously or irreversibly harmed because of the seaweed activity, a baseline study of the bottom and adjacent area should be conducted before developing a new seaweed farm. Then, there would be a need for biodiversity monitoring studies (using biodiversity indexes such as the Shannon or Simpson indexes), especially

in the case of bottom culture (e.g. *Gracilaria* in Chile) or suspended farms that are placed in shallow waters (e.g. some cases of *Eucheuma* and *Kappaphycus*), which can both reduce light conditions under the farms (Chopin & Buschmann, 2016).

G PI 2.1b Other commonly encountered habitat status ▲

As above, a baseline study of the bottom and adjacent area should be conducted before developing a new seaweed farm. If the installation is placed in/near habitats that could be impacted, the best indicator would be the surface covered by them originally and if there is any colonisation of these habitats by the cultivated seaweeds.

G8.11 Habitat characteristics ▲

Usually habitats impacted by the UoA are benthic habitats (i.e. associated with or occurring on the bottom) rather than pelagic habitats (i.e. near the surface or in the open water column), but impacts on the biotic aspects of pelagic habitats could be considered.

When determining which benthic habitats are impacted by the UoA, the team should consider habitats based on the substratum (e.g. hard substrate), geomorphology (e.g. flat rocky terrace), and (characteristic) biota (e.g., kelp-dominated, rockweed-dominated, seagrass bed and mixed epifauna) (SGB) characteristics.

G8.12 Commonly encountered and VMEs ▲

The determination of commonly encountered habitats and VMEs should be supported by evidence provided by the UoA to the assessment team. If a habitat's designation is uncertain, the team should take the precautionary approach, identify uncertain habitats as commonly encountered or VMEs as appropriate, and then most likely use the MSC CSA.

Commonly encountered habitats would likely include those that the target species favour, which the UoA's gear is designed to exploit, and/or that make up a reasonable portion of the UoA harvesting area.

G8.13 VMEs ▲

The FAO Guidelines Annex identifies the following species groups, communities, and habitat-forming species that may form VMEs and may be indicative of the occurrence of VMEs:

- Certain cold-water corals and hydroids (e.g. reef builders and coral forests, such as stony corals, alcyonaceans, gorgonians, black corals, and hydrocorals).
- Some types of sponge-dominated communities.
- Communities composed of dense emergent fauna where large sessile protozoans and invertebrates (e.g. hydroids and bryozoans) form an important structural component of habitat.
- Seep and vent communities comprised of invertebrate and microbial species found nowhere else (i.e. endemic).

The definition of serious and irreversible harm (see 8.15 and associated guidance) allows for there to be some continued harvesting on all habitats. Even UoAs operating in very slow-recovering habitats, for instance vulnerable marine ecosystems (VMEs), may be managed so that the impact of harvesting continues but is minor and tolerable.

G8.14 Mangroves, seagrass beds, complex kelp or rockweed habitats ▲

The FAO Guidelines Annex also lists various geographical features that are often associated with these communities.

The intent of the Standard is that even though the FAO Guidelines were written for deep-sea fisheries, the Guidelines' VME characteristics also apply to non-deep-sea fisheries. Further, when the FAO Guidelines are applied in shallow, inshore waters, the definition of VME could include other species groups and communities (e.g. mangroves, seagrass beds, complex kelp-dominated or rockweed-dominated habitats, biogenic reefs).

G8.15 Irreversible harm ▲

The Standard definition of “serious or irreversible harm” is very similar to the FAO Guidelines 29 definition of “significant adverse impacts”. A key consideration in both definitions is the concept of reversibility or recoverability. Both definitions consider the timeframe required for a habitat to recover. Damage requiring five to 20 years (or more) from which to recover should be considered “serious or irreversible” or “significantly adverse”, consistent with FAO (2009).

The MSC defines “recovery” as recovering to at least 80% of the level to which the habitat would eventually recover in the absence of all harvesting, considering the existing environmental and anthropomorphic conditions – a hypothetical climax state under existing conditions. This is often referred to in the text as an “unimpacted” level.

For VMEs the pre-existing historical extent of the habitat should be considered in the calculation of the current state of the VME in relation to unimpacted levels if the historical extent is known and if recovery in those areas of historical extent would be possible. If the habitat has been altered completely so that the pre-existing state does not exist, recovery of that state is not expected; however, if recovery of the pre-existing state is possible, this should be considered.

The Standard requirement is that habitats are not impacted beyond the point at which they could recover to 80% (or more) of their unimpacted level within five to 20 years. VMEs are generally habitats with slow recovery rates that are unlikely to be able to recover within five to 20 years from states below 80% of their unimpacted levels. For this reason and since VMEs are afforded specific consideration in international and customary law (the UNGA resolutions and FAO guidelines), VMEs should not be reduced to a state below 80% of the unimpacted level.

Historical cut-offs for VMEs

The cut off point for a VME depends on the status of the VME at the time of identification by a local, regional, national, or international management authority/governance body:

a. If the VME was already impacted by any UoA at the time that it was identified as a VME and all the impact occurred after 2006 (see note below), the unimpacted level is the idealised expected recovery state.

    i. This is the assumed unimpacted level as defined in a recovery plan or assumed from modelling predictions or comparisons with historical data and other adjacent or contiguous VMEs, if it can be measured or estimated at the time that the VME is identified. In short, the state to which the VME should recover is the state prior to any impact (i.e. 2006 and before).

    ii. If the UoA might be adversely impacting the VME and the idealised expected recovery state is not defined in a recovery plan and cannot be assumed from modelling or comparison with historical data and adjacent or contiguous VMEs, harvesting/farming by the UoA on the VME would need to cease at least until a recovery plan was developed by the management authority/governance body.

b. If the VME was already impacted by any UoA at the time that it was identified as a VME and the impact occurred before 2006, the unimpacted level at the time of identification should be used (i.e. there is an acceptance that the UoA should not be penalised for historical damage; however, further damage would not be accepted). In this case, the time of the identification of the VME is irrelevant.

c. If the VME was not impacted by any UoA at the time that it was identified as a VME, the unimpacted level at the time of identification should be used. In this case, the time of the identification of the VME is irrelevant.

Note: The year 2006 was chosen because it is the date of the United Nations General Assembly (UNGA) Resolution 61/105, which first defined the need for protection of VMEs.

G8.16 Area of consideration ▲

The intent of the Standard in specifying the “area covered by the governance body/s responsible for fisheries management in the area/s where the UoA operates” (the “managed area” for short) is to consider by default the habitat impacts within the areas controlled by the management regimes under

which the UoA operates. For many UoAs, the managed area may be only part of an EEZ (for example, the jurisdictional area for the UoA or the area covered by a management plan under which the UoA operates).

Where there is reasonable evidence that the habitat distribution extends beyond the “managed area”, the assessment of habitat impacts should be based on this extended distribution. The basis for concluding that the habitat range extends beyond the “managed area” should be documented clearly.

G PI 2.2 Ecosystem ▲

An ecosystem is a very complex entity with many interactive components, and can contain more than one habitat. An 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, 2012). 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.

To determine if the ecosystem structure and function have been seriously disrupted because of the farming activity, the capacity for invasion by the farmed species should be considered. If the farmed species colonises and behaves like an invasive species, then the ecosystem structure and function may have been seriously disrupted (Chopin & Buschmann, 2016).

Another aspect of maintaining ecosystem integrity relates to nutrient balance (especially of nitrogen, phosphorus and carbon and their ratios). Nutrient depletion, or severe divergence in their ratios, should be avoided (again emphasising the need for a pre-farming baseline for comparison) (Chopin & Buschmann, 2016).

Additives or fertilisation of the water are sometimes used to increase the production of seaweeds or to prevent or treat some diseases. Even if permitted by law, their impacts on the ecosystem should be assessed against this PI.

G PI 2.4a Approach to the assessment of “main” ▲

The requirements in Principle 2 apply particularly to those species that are defined as “main” species, according to their importance in the UoA, or by their low resilience (see specific criteria in the guidance below). Requirements are specified for such “main” species at each of the minimum and target levels).

G PI 2.4b Management strategy in place ▲

It should be noted that this performance indicator is also applicable to species considered as pests from the perspective of seaweed production (e.g. sea urchins feeding on seaweeds). A management strategy that aimed to exterminate the species (causing the mortality of all the individuals within the population) would not meet the requirements for this PI. Conversely, removing or even killing all the sea urchins found on the production unit may be acceptable if a large proportion of individuals of the population of the species would still survive, and therefore the UoA would not hinder the recovery of the population.

G8.23 Designation of “main” species ▲

When considering species for designation as “main”, in addition to the listed requirements in this clause, consideration should be given to temporal trends in catches and a precautionary approach should be used to determine whether species shall count as “main”. This should include considering the variability of the catch composition over the last five years or harvesting/farming seasons and recognising that some species might be “main” some years but not in others. Depending on data availability, teams may choose a different length of the time series, but a rationale should be provided in all cases of the method chosen. The overall intent when designating “main” species, is that there should be a good understanding of the long-term average catch composition of Principle 2 species of the UoA before the Public Consultation Draft Report release; and further that teams are confident that the species compositions, as well as their respective catch volumes, are unlikely to change over the lifetime of the certificate.

In all cases, a species may still be designated as main, even though it falls under the designated weight thresholds of 5% or 2%, if a plausible argument is provided as to why the species should

warrant that consideration. For example, a stock might be in such a poor state that all impact by the UoA is important enough to consider, even in cases where the catch proportion is so low that it would not normally be classified as a "main" species.

Main species should also include any Low Trophic Level (LTL) species that are currently in a low abundance regime and not regarded as "key" but may be expected to increase again in the future to the point of becoming a key LTL species.

In cases where the catch percentages are unknown or too uncertain to decide on which species are "main", a qualitative information-gathering process should be used and documented to determine whether the catch of the species by the UoA comprises more than 2% or 5% of all species in the UoA.

The classification of "main" and "not main" species should be precautionary. This implies that additional species could be considered "main" unless the team provides rationale to justify otherwise.

G8.24 Designating less resilient species as "main" at 2% ▲

The "main" threshold for less resilient species is set at a lower 2% of the total catch of the UoA by weight, because the risk of overharvesting these species is inherently greater. It should be noted that less resilient species should be assessed as such based on their life history characteristics and the risk to the stock from anthropogenic activities, not the actual impact of the UoA on the stock. The latter is assessed instead under the respective SI. As the levels of credible information needed to assess the intrinsic resilience of a species will be of varying quality and consistency, a wide range of source materials may be used. Scientific literature and other sources of material specific to the species and region under assessment are normally the most applicable.

In cases where the intrinsic resilience is high but the species is still at risk for other reasons, investigating species declines, population size, and extrinsic threats could be considered here.

For instance, the current abundance of the population may affect natural resilience if depensation effects are apparent and impair natural reproductive ability.

The team may also consider the spatial distribution of the species as well as the degree of spatial overlap with commercial harvesting operations to determine:

a. Whether the species is at risk of being locally depleted in the assessment area, or

b. If the species has only a limited distribution, so that it is likely to be more severely affected by fishing pressure, or

c. If the species is widely distributed and a highly migratory population, the cumulative impacts on the population may be greater as well as more difficult to account for.

G PI 2.5 Waste management and pollution control ▲

Organic waste and eutrophication

Most aquaculture production units produce waste nutrients and organic matter. The degree to which the farm is open to the environment will determine the proportion of waste produced by cultured species (seaweeds) released to the environment (Tucker & Hargreaves, 2008):

- In relatively closed production units, such as seaweed ponds, the use of fertilisers can result in the eutrophication of pond water.
- In more open systems, the effects of nutrient discharge are far less predictable. If the flushing time of the water body is less than the generation time of phytoplankton, an increase in limiting nutrient concentration can result in eutrophication.

The effects of effluent discharge tend to be localised near the discharge point. The susceptibility of receiving waters to eutrophication depends on trophic status prior to enrichment.

Potential adverse environmental effects attributed to organic waste loading from aquaculture include increases in phytoplankton density, reduced dissolved oxygen concentration and changes to benthic communities caused by localised sedimentation of suspended solids. Apart from organic matter, inorganic matter resulting from the farm may also be a problem.

The main refuse resulting from seaweed farms in the tropics is the plastic "straws" or "tie-ties" used to tie the seaweed to the monolines as well as Styrofoam pieces and plastic bottles used as floats.

Moreover, in some occasions, the farmers also construct buildings for farm operations, as well as drying structures on the beach creating both human and farming waste (Zemke-White & Smith, 2005). Such seaweed farmers should be responsible for waste reduction and disposal.

Equally important should be the protection against harmful chemical and hydrocarbon spills. Spills, unlike common waste, occurs by accident and therefore the intention is to have measures and strategies in place to prevent them from occurring, or at least to reduce the risk at a minimum. It is noted that spills are not necessarily waste in origin (e.g. fuel, oil, or chemicals necessary for activity before being used, etc.)

Farming operations should have sufficient prevention and response plans in place and farm workers should have the training necessary to properly dispose of waste, and prevent and manage chemical and hydrocarbon spills.

This PI requires that seaweed production units have proper waste management and pollution controls in place to minimise the impact that their operations have on the environment. The requirements are applicable to farm-based and wild harvest production units.

G PI 2.6 Pest/s and disease/s management practice ▲

Some of the most challenging issues faced by farmers involve the control and management of diseases, predators, pests and fouling organisms. Seaweed farms may interact with wild seaweed populations near the farms. A particular concern is the interaction with pathogens and parasites although the extent of interactions and impacts is not clear.

The best hope of controlling the spread of disease is using management practices that call for the inspection of seaweeds to ensure that infected ones are not moved into areas that do not currently have endemic infections.

Fouling control represents perhaps the greatest challenge for many seaweed farmers. The substrate offered by ropes and nets provides an ideal habitat for numerous fouling organisms that may include other seaweed species, shellfish, barnacles and many species of tunicates and bryozoans. Fouling organisms block the flow of food-rich water and frequently decrease the quality, appearance and value of the end product. Fouling organisms can quickly colonise clean gear, more than doubling the weight of culture gear in a few weeks.

Since any action will have some measurable impact, it is important to ensure that the impacts are localised, 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.

As part of the strategy required at the target level, it is expected that the UoA shows a demonstrated commitment to collaborate with NGOs, academics and governments on areas of mutually agreed research to measure possible impacts on wild stocks.

Applicability in wild harvest of seaweed

PI 2.6 should be also scored for wild harvest of seaweeds (category A). It should be clear that the strategy is required to prevent the spread of pest/s and disease/s. In the case of wild harvest of seaweeds, the strategy is not expected to prevent naturally caused disease, but to prevent the dispersion associated with the activity (for example, dispersing the disease by using the same gear used in a contaminated area).

G PI 2.7 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. This PI requires that harvesting and farm energy consumption should be monitored on a continual basis and that seaweed producers should develop means to improve efficiency and reduce consumption of energy sources where possible. This should apply, particularly to those energy sources that are limited (i.e. non-renewable) or carbon-based.

G PI 2.7b ▲

Examples of the equipment to be considered are boats, generators, etc.

G PI 2.8 Translocations ▲

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 or intentional. Intentional translocations may occur for various reasons including reducing population size, for welfare, political, commercial or recreational interests, or for conservation objectives (IUCN, 2012).

For the purpose of the Standard, translocation does not include the transfer of species to a production area from outside the distribution of its natural range. The latter should be considered as an introduction of a species (see PI 2.9 Introduction of alien species).

Translocation of species is therefore considered within scope so long as it is managed as per the requirements in this PI (and in PI 1.3).

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 minimising any adverse effects. 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. 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 uses stocks or populations that are native to the natural production area from which the production unit catch originates. Confirming that seaweeds are ‘native’ to a production area (i.e. from within the “natural range”) may not be simple except in cases where no movement occurs. It should be noted, as discussed earlier in G2.1 (b), that movements of different strains or varieties of the same species should still be considered as translocations. Therefore, the term “native” is related to the species, not to any other lower taxonomic rank. That is, strains of a species can be moved from one region to another, so long as they remain within the native range of the species, and meet the requirements of both PIs 1.3 and 2.8.

G PI 2.8 (b) ▲

Regarding the management of translocations (SIb) at the target level, some evidence should be presented that the production unit follows appropriate best management practices for preventing and managing disease and pest introductions. A valid documented risk assessment or equivalent environmental impact assessment would greatly help to confirm if the translocation activity is highly unlikely to introduce diseases, pests, pathogens, or non-native species into the surrounding ecosystem.

G PI 2.9 Introduction of alien species ▲

All introductions and transfers of marine organisms carry risks associated with target and non-target species (including disease agents). Once established, alien species can spread and have undesirable ecological, genetic, economic, and human health impacts (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 exist with any movement and should be considered explicitly (ICES, 2004).

The team should determine whether there is a strategy in place considered adequate to prevent the progression of ecosystem impacts from occurring due to the presence of the alien species. This strategy could be composed of one or more of the following measures:

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

b. Containment measures such as harvesting down at the boundaries of the stock to prevent further spread.

c. Protection and/or creation of floral/faunal refugia.

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

G9 Guidance – Principle 3: Effective management ▲

The intent of Principle 3 is to ensure that there is an institutional and operational framework appropriate to the size and scale of the UoA for implementing Principles 1 and 2, and that this framework is capable of delivering sustainable fisheries and farming in accordance with the outcomes articulated in these Principles.

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

G PI 3.1 Legal and/or customary framework ▲

Background

Understanding what is meant by the legal and/or customary framework is key to determining if the harvesting or farming management occurs within a framework that both respects relevant laws and is compatible with relevant instruments of international law capable of delivering sustainable production units in accordance with the principles of the Standard.

The local, regional, national or international legal and/or customary framework of a harvesting or farming management system is:

- The underlying formal or informal supporting structure that incorporates all the formal and informal practices.
- Procedures and instruments that control or have an impact on a UoA. This includes policies and practices of both government and private sectors, including (but not limited to):
    - Implementing agencies (e.g. fisheries or aquaculture agencies, conservation agencies, etc.).
    - Harvesting or farming business groups (e.g. sector cooperatives, industry associations, etc.).
    - Indigenous groups.
    - Local civil society or community groups.
- The government sector, including all applicable government systems, the courts and the relevant parliamentary and regulatory bodies. The management system is the complex interaction of government legislation, or industry or customary practice, but is not limited to all such elements, controls and practices that are used in a UoA and result in “hard” (law) or “soft” (accepted practice) controls over actual on-water catching practices.

Assessing informal and traditional approaches

In all scoring issues in this PI, for management systems, which are less clearly articulated, such as informal and traditional management systems, evidence of the extent to which this scoring issue is met could be through:

- Accepted norms.
- Commonly held values.
- Beliefs.
- Agreed rules across the harvesting/farming communities of which the UoA is part.

This PI may be excluded from the assessment tree in cases where it is not considered necessary due to the low intensity, scale or level of the development of seaweed production in the region considered. An example of this situation is that a full Principle 3 management framework and enforcement may

not be needed where there is currently only one farm in a country or region, or a very minimal level of development so there is no need yet for a coordinated policy framework and management.

Scoring issue (a) – Compatibility of laws or standards with effective management ▲

The first scoring issue for this PI relates to the presence or absence of an appropriate and effective legal system, including at the international level a legal and/or customary framework that is capable of delivering sustainable production units in accordance with the principles of the Standard. This scoring issue focuses on the existence of a national and/or international framework itself and if it is capable of delivering production units, including through management cooperation where required.

This may be determined by examining:

- The presence or absence of the essential features of an appropriate and effective structure within which management takes place.
- If those features are hard or soft.
- If the framework has a focus on long term management rather the short term.
- How it manages risk and uncertainty.
- If the framework is transparent and open to scrutiny, review and adaptation as new information becomes available.

The essential features needed to deliver sustainable production units are defined by their relevance to achieving production units in accordance with the principles of the Standard appropriate to the size and scale of the UoA, and may include:

- Establishing when and where people can harvest or farm the seaweeds.
- Who can harvest or farm them.
- How they may harvest or farm them.
- How much they can be harvesting or farming.
- What they can harvest or farm.
- Who they talk to about the “rules” for harvesting or farming.
- How they might gather relevant information and decide what to do with it.
- How they know that people are abiding by whatever rules are made.
- How they catch, sanction or penalise wrongdoers.

With these features, the operational framework could be said to be compatible with local, national or international laws or standards.

G10 Guidance – 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 workers are treated and paid fairly. Appropriate farm conditions include no child labour, no forced labour and no discrimination as prescribed in the Standard. Complaint procedures and protection for whistle blowers are critical to achieving and maintaining fair and equitable working conditions. Socially responsible seaweed farming and harvesting of wild populations should ensure worker health and welfare through safe and hygienic working conditions with relevant training available for workers and managers.

The social requirements in this Standard shall be audited by a qualified auditor with competencies meeting Annex A of the CAR. Interviews with production unit workers and others are a key part of the social audit in addition to 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 and previously for the duration of the first complete cycle.

Throughout Principles 4 and 5, some exceptions can be made for micro family business production units in terms of the type of evidence needed to score a PI. Currently there is no clear universal definition of what determines micro family business farming. There is, however, some guidance on key characteristics of micro family businesses as follows:

“FAO (2012) defines the term ‘family farming’ to include crop, livestock, forestry, fishery and aquaculture production by producers who, despite their great heterogeneity among countries and within countries, have the following key characteristics:

- Limited access to land and capital resources.
- Predominantly family labour is used with the head of the household participating directly in the production process; therefore; even when there is some division of labour, the head of the household does not just perform management responsibilities but is also a worker in the family unit.
- Agricultural/forestry/aquaculture/fishery activity is the main source of income for the family nucleus, which may be complemented with other non-farming activities undertaken inside or outside the family unit (i.e. services related to rural tourism, environmental benefits, small-scale production, small agribusinesses, casual jobs, etc.) (FAO 2012; Garner et al 2014).”

In this standard, three key criteria are provided to assist the recognition of micro family businesses for scoring in this Principle:

- Family members are the main workers in the business.
- Farming provides the main family income.
- The maximum farming area is not greater than two ha/family.

Since the conditions of production units vary widely globally, some flexibility is allowed for the identification of micro family businesses based on the judgment of CABs. To qualify for the allowed exceptions in the scoring of micro family businesses, the CAB should verify that at least two out of three of the above key criteria are met during the on-site assessment.

G PI 4.1 Child labour ▲

A “child” is defined as any person less than 15 years of age. A higher age would apply if the minimum age law stipulates a higher age for work or mandatory schooling. If, however, the local minimum age law is set at 14, in accordance with developing country exceptions under ILO C138, lower age will apply.

Child labour is defined as any work by a child younger than the age specified in the definition of a child, except for light work as provided for by ILO Convention 138, Article 7.

Incidences include reliable corroborated evidence of the event taking place.

A “young worker” is defined as any worker older than the age of a child and under the age of 18.

Minimum age can be different country to country. In most countries, the law states that minimum age for employment is 15 years. However, there are two possible exceptions:

- In developing countries where the legal minimum age may be set to 14 years, or
- In countries where the legal minimum age is set higher than 15 years, in which case the legal minimum age of the country is followed.

If the farm operates in a country where the legal minimum age is not 15, then the employer should maintain documentation attesting to this fact.

To comply with the requirement, there should be corroborated evidence that no incidences of child labour or young worker abuse have occurred on the farm/harvesting operation. Employment of young people should be consistent with legislation, and furthermore with the ILO Conventions:

- For workers aged 15 to 18 (defined as young workers), work should not conflict with schooling. The combination of daily transportation, school time and work time should not exceed 10 hours).

- Hazardous work is not performed by those below age 18. This includes heavy lifting disproportionate to their size, operating heavy machinery, working night shifts and exposure to any toxic chemicals.
- In practice, where small scale/artisanal family operations or small-scale holdings have children helping out on their family farm, certification should enable those children to attend school whilst still providing what was their income to their family. For example, the remedial actions to be implemented in the event that child labour is used must improve the well-being of the child and family. If it is a farmer association that holds the certificate they can keep school records to show children continue to attend school until a certain age (depending on the country law).

G 10.2 (a) ii ▲

For example, that they are protected (remediation).

Reference: ILO Convention 138 and Recommendation 146 (Minimum Age) ILO Convention 182 (Worst Forms of Child Labour), the United Nations Convention on the Rights of the Child.

G PI 4.2 Forced, bonded or compulsory labour ▲

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. It is considered forced labour if any part of the worker's salary, benefits, property or documents is retained to force them to remain in their employment. It is also considered forced labour if workers are required or forced to remain in employment against their will using any physical or psychological measure. Human trafficking can also be regarded as forced labour.

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 refers to workers that have received loans from employers, where these loans are subject to unreasonable terms and conditions such as excessively high interest rates.

G 10.4 (a) ▲

Evidence of a contract agreement is required for all workers. For organisations with more than five permanent workers, these must be written. Written contracts: a complete contract is filed in the office, mutually signed and copies are available to the worker. Verbal contracts: employer and worker cite consistent employment conditions in independent interviews.

G10.4 (c) ▲

In terms of forced, bonded or compulsory labour, particular care is needed for migrant workers and contractors/subcontractors, who can be particularly vulnerable without their identity documents. There should be no coercion in the recruitment or hiring of such workers. Requirements for continued employment of workers assisted through education are not considered bonded labour if they are reasonable, remunerated, and clearly communicated.

Reference: ILO Conventions 29 (Forced Labour) and 105 (Abolition of Forced Labour).

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 and acceptable within the Standard.

Particular care is needed regarding any discrimination against migrant workers, who may not be recognised or offered services by local governments. Migrant workers should be treated as equal to other non-migrant workers in buying practices or any other activities that occur during production unit operations.

To verify the compliance, for first audits, records must cover at least six months. The farms/harvesters should provide and ensure the implementation of a policy protecting pregnant and lactating mothers.

Reference: ILO Convention 111 Discrimination – Employment and Occupation, ILO Convention 183 (Maternity Protection), the United Nations Convention on the Elimination of All Forms of Discrimination Against Women, The United Nations Convention on the Elimination of All Forms of Racial Discrimination.

G PI 4.4 Health, safety and insurance ▲

"PPE" or "Personal Protective Equipment" refers to protective clothing, helmets, goggles, lifejackets or other garments or equipment designed to protect the wearer's body from injury or infection.

For some farms, workers might be provided with accommodation at site. If accommodation is provided, it must be safe, not overcrowded, and weather resistant. The basic needs for the living condition include access to clean lavatories, potable water and sanitary facilities.

Special consideration must be given to migrant or foreign workers who may fall outside of local or national laws and legislation. Emergency response procedures should exist and be known by workers. There must be no immediate life threatening or serious injury dangers.

Reference: ILO Convention 155 and Recommendation 164 (Occupational Safety and Health).

G PI 4.5 Fair and decent wages ▲

Minimum wage is the legal minimum wage set by law in the country.

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. Living wage should be calculated according to the ISEAL living wage coalition and their benchmarks used where available.

To verify the compliance for first audits, records must cover at least six months.

In terms of payment, wages and benefits should be rendered in a manner convenient to workers, e.g., no travel, promissory notes, coupons, products or merchandise to replace cash, checks or electronic methods of payment.

Reference: ILO Conventions 100 (Equal Remuneration), ILO Convention 102 (Social Security - Minimum Standards) ILO Convention 131 (Minimum Wage Fixing).

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.

The production unit can demonstrate their commitment to freedom of association and collective bargaining to workers, for instance via notice boards or in contracts. To be effective the organisation would have to commit not to interfere in the operation of worker groups and to enter into meaningful dialogue with the group. There would be evidence that workers have not been prohibited from accessing trade union or similar organisation, when they exist. If they do not exist or are illegal, companies can comply by making it clear that they are willing to engage in a collective dialogue through a representative structure freely elected by the workers.

Some countries have a national registration that strictly bans or limits the right to have freedom of associations or associated activities for their nations. In those counties, the production unit should demonstrate their effort to engage in collective dialogues with workers. Labour representative structure should not be a legal entity but it could be an informally-formed structure. The representative structure should be independent from the employer.

Reference: ILO Convention 87 (Freedom of Association) ILO Convention 98 (Right to Organise and Collective Bargaining) ILO Convention 135 (Workers' Representatives).

G PI 4.7 Disciplinary practices ▲

Disciplinary procedures make sure that a company's standards of conduct and performance at work are followed. They also provide a fair and humane method of dealing with workers who fail to meet these standards.

In some countries, there are widely accepted customary disciplinary practices, such as reduction of wage for arriving late at the workplace, and the national registration allows conducting those practices. It might be difficult to enforce this requirement to non-signatory countries of the relevant international conventions (ILO conventions). However, it is important to make sure that any certified production unit eliminates such negative customary practices to contribute to the improvement of working condition.

Reference: There are no ILO Conventions that deal solely with Discipline and Grievance. However, Conventions relevant to the topic include ILO Convention 158 Termination of Employment Convention and 105 Abolition of Forced Labour Convention (this Convention prohibits the use of any form of forced or compulsory labour as a means of labour discipline and punishment).

G PI 4.8 Working hours ▲

Local registration regarding working hours varies from country to country. When local legislation allows workers to exceed internationally accepted industry norms, requirements of the international industry norms should apply unless levels are agreed in a collective bargaining agreement.

Some exceptions can be made for overtime. For instance, if there is a collective bargaining agreement in place that allows it, it is acceptable that working hours exceed these requirements during busy periods, such as harvesting, as long as it is voluntary, not regular and does not endanger workers' well-being.

G 10.22b ▲

For example, time sheets, patrol.

G 10.23a ▲

Working hours should be defined as those worked constantly or the majority of the time.

G PI 4.9 Environmental and social training (PI 4.9)

G 10.25b ▲

Examples of course documentation can be list of courses, curricula, certificates, degrees, etc.

G 10.26b ▲

Examples of incentives can be subsidies for tuition or textbooks, time off prior to exams, flexibility in work schedule, etc.

Reference: ILO Convention 1 (Hours of Work – Industry) and Recommendation 116 (Reduction of Hours of Work).

G11 Guidance - Principle 5: Community relations and interaction ▲

Seaweed harvesting and farming often occur near communities that may be affected by these activities.

Conflicts may occur between producers and surrounding communities. It is the responsibility of the production unit to minimise potential impacts by maintaining clean and orderly harvesting and farm sites that do not impede navigation and avoid potential conflicts.

Conflicts that arise between producers and surrounding communities should 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.

G PI 5.1 Community impacts ▲

Consultations for the impact assessment shall include participation by representatives from the local community. Records and documentary evidence (e.g. meeting agenda, minutes, reports, etc.) should be maintained and checked to demonstrate that such consultations have taken place. The minimum requirement is that an assessment of the production unit and community impact is conducted. If determined necessary by the production unit assessment, an independent Participatory Social Impact Assessment (p-SIA) should be conducted.

Representatives from the local community and local organisations should be interviewed to confirm the outcomes of the production unit impact assessment. The production unit should proactively arrange for consultations with the community at least twice every year. This can be carried out in line with the management and interaction with communities but should include the requirements provided in the guidance below. For large scale production units (e.g. vertically integrated operations) the p-SIA should be undertaken by professional experts. A new p-SIA should be conducted at least every three years.

Small-scale production units, community production and cooperatives

It is anticipated that small-scale producers will organise into associations that will be certified. These groups have the opportunity to apply minimum standards and best practices, minimise negative impacts and create a positive benefit for the community. These associations may be the means of setting membership rules and have the ability to treat everyone fairly. Even in customary settings, these should be well understood by members even when they are not officially written ensuring that there is an understanding by their production unit members who will themselves benefit from the certificate.

The buyer should also follow responsible practices when sourcing from production units with clear pricing and equity including transparent agreements. This will go a long way to improving equity in the seaweed value chain and achieving the principles set out in the Standard.

Through implementation of the Standard by producer/harvester associations it is hoped that communities and informal labour (for instance that carried out by families) receive equal rights as workers so that poor rural families are not exploited. Guidelines and bylaws for producer owned cooperatives or associations can mirror the language used in the guidance that refers to a single owner production unit (e.g. the scoring and guidance related to impact assessment, consultation with community, stakeholders, etc.). A cooperative, association or community of many production units should also ensure that they are consulting their members appropriately and inclusively, and that they are aware of the impact of their seaweed production on other uses and livelihoods in the area. Producer-run cooperatives should not be exempt from 5.1 or 5.3 and this can be determined by auditor consultations and interviews. Cooperatives and associations in developing countries often represent hundreds of producers and are capable of keeping records.

Production unit social impact assessment guidance

The improvement of the social well-being of the wider community should be explicitly recognised as an objective of the production unit and, as such, should be an indicator considered by any form of assessment. Evidence of regular and meaningful consultation and engagement with community representatives and organisations is required. For example, meeting records, newsletters, consultation with communities and indigenous groups, or membership in association with documented outreach program. An absolute minimum benchmark is to avoid any harm and to be transparent about risks that may affect the well-being of people living around or between production units. Impacts may vary among different groups in society and the impact burden experienced by vulnerable groups in the community should always be of primary concern.

The production unit should assess the impact of the production unit on its environment and community, the extent of the impact and whom it will impact through a process in which production unit and surrounding community (potentially affected stakeholders) have had open dialogues on impacts, risks, and ways to deal with these.

A full participatory social impact assessment (p-SIA) carried out by an independent expert will be required if the producer's own situation (evidenced by stakeholder feedback) necessitates it. In other words, if a negative impact has been found to exist.

The role of the social impact assessment and meetings are to ensure the following:

- The views of all stakeholder groups have been considered.
- There has been adequate negotiation about the outcomes (for each stakeholder group) of the intended activity or changes in ongoing activity.
- The potential adverse consequences have been considered and classified according to the likelihood (risk) and severity (size, effect) of impact.
- The activity has been redesigned as much as possible to reduce these consequences and mitigation or compensatory mechanisms have been developed.
- Determine the need for a full p-SIA.

If done correctly, the effect of this assessment will be mutually beneficial:

- Maximised positive and minimised negative impacts to the "surrounding" community and their social well-being and livelihoods.
- Reduced costs and risks to the producer operation due to increased comfort with and absence of conflict with the "surrounding" community.

Only those production unit processes that present potential risks outside the production unit (e.g. pesticide or antibiotic use and disposal) need to be reviewed in the impact assessment. The following nine elements should be considered in the impact assessment. If the production unit is unable to conduct the assessment themselves or ensure transparent results or implement sufficient resolution to issues found, then, an independent p-SIA should be conducted.

Elements to be included in production unit social impact assessment:

a. The process and transparency of communication with stakeholders (e.g. affected people, groups and communities) should include:

    i. Meetings are held with stakeholders twice every year, in addition to when any change or development on the production unit is proposed, which has the potential to impact the local community.

    ii. All assessment activities undertaken in such a manner that all stakeholder groups have input in process, results, and outcome of such an assessment, and that steps taken and information gathered is openly accessible to all.

b. The social impact assessment process should be participatory and transparent:

    i. The intent to conduct a social assessment is locally and publicly communicated with sufficient time for interested parties to participate and/or get informed.

    ii. The agenda shall be set at least in part by the stakeholders.

iii. In listing stakeholders, in making impact descriptions, and in preparation of a final p-SIA report-document, meetings with the listed stakeholders (or by stakeholders' chosen representatives) should take place.

iv. Notes are taken at these meetings and are attached to the final report along with the names and contact details of participating stakeholders.

c. The risks, and actual impacts of the current or intended production unit and at least two alternatives (one of these is the "no production unit or no expansion" scenario) are considered. Concepts to cover may include economic aspects, natural resource access and use, human assets, physical infrastructures, social and cultural aspects, and governance.

d. Research and report probable impacts that are likely to be most important. In doing this, it is important to arrange meetings with stakeholders to let them prioritise as well as to let them express how they assess/view/feel; identify both positive and negative risks and impacts.

e. Carry out investigations into priority impacts with focus on the question "What changes will lead to if they indeed come about?" including:

i. Physical effects to man-made and natural structures and processes.

ii. Likely adaptations and the social and economic effects of making such adaptations.

iii. How these effects and indirect effects would compare to having no intervention.

iv. How effects may or might be cumulative.

f. Make recommendations to maximise the positive and minimise the negative, with consideration to compensation options for those lands and people impacted; include recommendations on how to avoid these issues with the intended production unit or production unit development.

g. Propose a mitigation plan and ensure that it is fully implemented.

h. Develop and approve, with all stakeholders, a monitoring plan and indicators on positive and negative risks and impacts.

i. A summary with recommendations and conclusions is made available to all involved in the process and, through public local notices and publishing in the local relevant language/s, made accessible to all members of the local community.

G PI 5.2 Conflict resolution ▲

Conflicts, for the purpose of the Standard, are situations wherein one party perceives hindrance in legitimate interest as caused by the other party's actions or absence of actions. One party is production unit operation owner or manager. The other party is either a surrounding community or group of stakeholders in the community. Conflicts, for the purpose of the Standard, do exclude complaints made by single individuals unless verified/supported by a community leader or community organisation. The production unit may not necessarily be at fault if conflicts arise, but they are expected to exercise due diligence to avoid any harm done to the legitimate interests of people in the surrounding community.

Due diligence is the effort made by an ordinarily prudent or reasonable party to avoid harm to another party. The process of resolution must be documented and meeting minutes are kept. Minutes include an agenda, the list of concerns raised, resolutions or agreements reached, a list of who shall take what action by when, and a list of participants. Local government and, if available, at least one civil society or customary organisation chosen by the community are expected to have access to the conflict resolution process and the documentation.

G PI 5.3 Rights of indigenous people ▲

Evidence is minutes from community meetings and a log of communications with stakeholders. Social impacts to be discussed would likely include economic impacts, natural resource access and use, human health and safety issues, and changes to physical infrastructure and cultural issues, with a particular focus on impacts to indigenous people, where applicable.

Reference: The standard is intended to be consistent with the United Nations Declaration on the Rights of Indigenous Peoples.

G PI 5.4 Visibility, positioning and orientation of production unit or water-based structures ▲

Water-based structures are structures as part of the production unit and/or production unit equipment used in water or in contact with water, situated in or around production unit (e.g. rafts, nets, boats, buoys, etc.).

G PI 5.5 Identification and recovery of substantial gear

G11.7 ▲

Substantial gears include floats, cages, lines, piles, bags, predator nets and racks.

G PI 5.7 Decommissioning of abandoned production units or water-based structures ▲

It is expected that the production unit has documentation available to demonstrate the mechanism used for the collection and decommissioning of gear. This should include a protocol that includes financial support for decommissioning of abandoned production unit activities.

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