

Scope: The requirements of the ASC Bivalve Standard apply globally to all locations and scales of filter-feeding bivalve aquaculture production systems. Bivalve aquaculture is defined by this Dialogue as active husbandry of bivalve shellfish from seed to harvest within a defined area and with defined ownership of the shellfish being cultured.

INSTRUCTION TO FARMS/AUDITORS:

This audit manual was developed to accompany version 1.1 of the ASC Bivalve Standard.

PRINCIPLE 1. OBEY THE LAW AND COMPLY WITH ALL APPLICABLE LEGAL REQUIREMENTS AND REGULATIONS WHERE FARMING OPERATION IS LOCATED

1.1 Criteria: All applicable legal requirements and regulations where farming operation is located

		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
1.1.1	<p>Indicator: Evidence of compliance with all applicable legal requirements and regulations where the farming operation is located (e.g., permits, licenses, evidence of lease, concessions and rights to land and/or water use)</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	a. Obtain copies of applicable land and water use laws.	A. Verify compliance with applicable land and water use laws.
		b. Obtain original lease agreements or land titles on file.	B. Confirm client holds original lease agreements or land titles. Where documentation is informal or validity is in doubt, interviews of relevant neighbors should be conducted to establish support of the claims.
		c. Keep records of inspections for compliance with national and local laws and regulations (only if such inspections are legally required in the country of operation).	C. Verify that inspection records comply with national and local laws and regulations (as applicable).
		d. Obtain all necessary permits relating to land and water use as required by local and national authorities.	D. Verify the farm has valid permits relating to land and water use. Where documentation is informal or validity is in doubt, interviews of relevant neighbors should be conducted to establish support of the claims.
		e. Provide a detailed map of the farm with at least 4 GPS coordinates to show that farm location in relation to national preservation areas.	E. Verify that the farm is represented accurately through verification of at least one of the GPS coordinates. If possible, verify spatial information using Google Map, satellite images or similar means.
		f. If the farm is sited within a national preservation area or marine protected area, maintain documents to show that the farm's activities are consistent with legal requirements and regulations of the protected area.	F. If applicable, verify that the farm complies with legal requirements and regulations of the national protected area.

PRINCIPLE 2. AVOID, REMEDY OR MITIGATE SIGNIFICANT ADVERSE EFFECTS ON HABITATS, BIODIVERSITY, AND ECOLOGICAL PROCESSES

General Considerations for Criterion 2.1

I. Contracting Studies through an Independent Party

The Steering committee recognizes that not all farms will have sufficient resources on hand nor suitable technical expertise available to complete all of the studies described in this audit manual. Farms may choose to contract such work through suitably qualified independent experts (i.e. consultants) who perform the studies on behalf of the farm. Regardless of whether the farm or their contractor completes the work, auditors will review the results of studies to ensure compliance with the standard. It is the farm's responsibility to maintain all necessary documentation for demonstrating compliance.

II. Classification of Seabed Type

Farms utilizing off-bottom and suspended methods are required to perform a "tiered assessment" (see Appendix IV, Section 2 of the Bivalve Standard) to assess benthic impacts of the culture activity. The first step is to classify each farm according to the type of seafloor that occurs beneath it. Seafloors, and thus farms, must be classified into one of two main types: Depositional, or Non-Depositional. In order to make this classification, all farms utilizing off-bottom and suspended methods shall conduct an initial visual survey, using video or seabed imaging.

Depositional / Soft Substrate

Criterion 2.1 applies only to farms utilizing off-bottom and suspended methods on depositional substrate (i.e. sediment bottoms of sand or silt). Farms must measure sulfides (S) concentrations in the sediment to determine compliance and subsequent monitoring frequency (see 2.1.1., 2.1.2., and 2.1.3.). Direct measurement of S concentration may be replaced by an analysis of benthic community structure (see 2.1.4.). Farms must determine areas containing biogenic structures of importance to the functioning of the ecosystem (2.1.5.)

The initial assessment shall be conducted within a 6 month period prior to the first audit. Sediment samples for the assessment of total "free" sulfides. If the client is unable to conduct the initial assessment themselves, then a suitably qualified independent expert should be contracted. Methods for the measurement of "free" sulfides in marine sediments is outlined in Appendix 2.

2.1 Criteria: Benthic effects for off-bottom and suspended-culture methods ^[1]

		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
2.1.1	<p>Indicator: Acceptable levels of total 'free' sulfides in surficial sediment (0-2 centimeters from the surface) measured beneath the farm in comparison to control sites^[2]</p> <p>Requirement: ≤ 1500 µM, monitoring every five years is required, ≥ 1500 µM and ≤ 3000 µM, monitoring every year is required</p> <p>Applicability: Off-bottom and suspended methods over depositional substrate</p>	<p>a. <u>If the farm site is a non-depositional area:</u> Ensure that monitoring via video or seabed imaging transects is conducted prior to the first audit and at least once every five years thereafter (Proceed to 2.2.)</p>	A. Verify from video or seabed imaging evidence that the aquaculture site is non-depositional.
		<p>b. <u>If the farm site is a depositional area of soft substrate:</u> An initial assessment of S concentration in sediments shall be conducted according to Appendix 1 & 2 of the Bivalve Standard. Direct measurement of S concentration may be replaced by an analysis of benthic community structure in areas where this biotic approach is preferred by the client or is already mandated by a regulatory body ^[3] (see 2.1.4.).</p> <p>The client shall present information detailing the sampling design used and results of the S assessment: - If S concentration is ≤ 1500 µM, monitoring shall be conducted every five years (Proceed to 2.2.). - If S concentration is ≥ 1500 µM and < 3000 µM, monitoring shall be conducted every year (Proceed to 2.2.). - If S concentration is ≥ 3000 µM (Proceed to 2.1.2.).</p>	B. Verify documentation that the farm has conducted an initial assessment of S concentration within a 6 month period prior to the first audit using either direct measurement or analysis of benthic community structure.
		<p>c. If the farm intends to conduct measurements of total 'free' sulfides using a method different from the one prescribed in Appendix IV & V of the Bivalve Standard (e.g. in order to comply with local regulations), the farm must first request a variation from ASC showing how the alternate method will meet the intent of the Standard in an equivalent way.</p>	C. If applicable, confirm that the variation request was approved by ASC and document in the audit report how the alternate method of measuring free sulfides meets the intent of the Standard in an equivalent way.
Footnote	^[1] Farms utilizing in- and on-bottom husbandry practices are exempted from assessment for benthic organic enrichment. These requirements specifically target off-bottom and suspended-culture activities that permit greater stocking biomass per area than can be achieved using bottom culture approaches.		
Footnote	^[2] Sampling design and sulfide methodology are included in Appendix IV & V of the Bivalve Standard		
2.1.2	<p>Indicator: Unacceptable levels of total 'free' sulfide in surficial sediment measured beneath the farm in comparison to control sites</p> <p>Requirement: ≥ 3000 µM</p> <p>Applicability: Off-bottom and suspended methods over depositional substrate</p>	<i>For farms using off-bottom and suspended methods on depositional substrate and not compliant with 2.1.1.</i>	
		<p>a. If initial assessment of S concentration is ≥ 3000 µM, the farm is not certifiable unless natural background S levels exceed 3000 µM (proceed to 2.1.3.). Management response is required to reduce S levels.</p>	A. Verify documentation of initial assessment of S concentration by either direct measurement or analysis of benthic community structure.

2.1.3	<p>Indicator: In cases where natural background sulfide levels exceed 3000 µM, the annual S concentrations should not significantly^[3] exceed levels measured at reference sites located outside the farm^[4]</p> <p>Requirement: Yes</p> <p>Applicability: Off-bottom and suspended methods over depositional substrate</p>	<p>a. Provide results comparing sampled S culture area to reference sites outside the farm (see Appendices 1 & 2 for the comparison to control sites). If S concentrations beneath the farm structures are not found to be significantly higher (p<0.05) than reference sites, monitoring shall be conducted every year. (Proceed to 2.1.5.).</p>	<p>A. Verify comparison with natural background levels if presented.</p>
Footnote	<p>^[3] Statistical significance (i.e. 95% confidence interval)</p>		
Footnote	<p>^[4] Farming activity is permitted in areas where the natural benthic environment is already heavily enriched with organic matter prior to the initiation of any shellfish aquaculture activities</p>		
2.1.4	<p>Indicator: Sulfide analysis may be replaced by direct analysis of benthic community structure (i.e. infaunal surveys) in areas where this biotic approach is preferred by the applicant or is already mandated by a regulatory body^[5]</p> <p>Requirement: Yes</p> <p>Applicability: Off-bottom and suspended methods over depositional substrate</p>	<p>Instructions for Indicator 2.1.4 - Replacement of Direct Free Sulfide Measurements with a Biotic Approach</p> <p>The Steering Committee of the Bivalve Aquaculture Dialog concluded that direct measurement of free sulfide concentration is the most reliable, cost-effective and straightforward way to demonstrate compliance with Indicators 2.1.1, 2.1.2, and 2.1.3. Nonetheless, the SC also recognizes that situations may arise where farms will need access to an alternate method for showing compliance. For example, monitoring of benthic community may already be mandated by a regulatory body. Therefore the SC makes an allowance for farms to utilize a biotic approach (i.e. a benthic index) by monitoring benthic community structure. But please note that the SC does not necessarily recommend that farms pursue this option as it is likely to be more technically challenging, costly, and time consuming than taking direct measurements of free sulfide.</p> <p>If farms elect to use a biotic approach, they must demonstrate how the results from infaunal surveys are consistent with the relevant sulfide levels specified in Indicators 2.1.1, 2.1.2, and 2.1.3. In establishing indices of benthic diversity, farms may follow one of the approaches outlined in Hargrave et al. (2008, see summary nomogram in Fig. 5) for relating macrobenthic infaunal biodiversity to free sulfide levels. The farm must identify a source reference (i.e. a scientific publication) for the method selected. Farms may contract with suitably qualified experts (i.e. consultants) to perform the benthic community analyses on their behalf. Auditors will review the results and include a full description in the audit report.</p> <p>Note: Indicator 2.1.4 applies to farms using off-bottom and suspended methods on depositional substrate.</p>	
		<p>a. Notify the CAB if the farm used the biotic approach and identify a source reference (i.e. a scientific publication) for the method used.</p>	<p>A. Record whether the farm replaced the sulfide analysis with a direct analysis of benthic community structure. If yes, confirm that the farm's benthic community analysis complies with requirements [5].</p>
		<p>b. Provide documentary evidence to show how the farm established equivalency of biotic indices with sulfide levels (e.g. reports from analysis of infaunal surveys).</p>	<p>B. Review farm datasets for benthic community structure to confirm that the farm has established equivalency of indices with sulfide levels.</p>
		<p>c. If S equivalency is < 3000 µM, proceed to 2.1.1. If S equivalency is > 3000 µM, proceed to 2.1.2.</p>	<p>C. Verify that the farm correctly used the equivalent S concentrations to determine the next action (i.e. whether to establish monitoring frequency, or to compare to reference sites).</p>
Footnote	<p>^[5] Biotic indicator decision thresholds need to be assessed to ensure equivalency with the thresholds identified for total 'free' sulfide given in requirement 2.1.1. There are several papers that have been published linking specific benthic sulfide levels to indices for benthic biodiversity. Please refer to the reference section for examples (e.g., Hargrave et. al. 2008)</p>		

2.1.5	Indicator: Allowance for bivalve aquaculture over areas that provide a particularly significant or essential biological or ecological function within the broader ecosystem ^[6] Requirement: None Applicability: Off-bottom and suspended methods	<i>For all farms using off-bottom and suspended method</i>	
		a. Prepare results from video or seabed imaging survey of the farm.	A. Verify that video or imagery demonstrates that the farm is not located over areas that provide significant biological or ecological function within the broader ecosystem.
		b. Summarize information about sensitive habitats in proximity to farming operations (e.g. using a map of habitat distribution; see 1.1.1e) noting any areas where biogenic structures are located [8]).	B. Verify farmer knowledge of sensitive habitat in proximity to farming operations.
Footnote	^[6] Areas containing biogenic structures that are not particularly adapted to sedimentation or organic enrichment (e.g., tubeworm mounds, bryozoan mounds, bivalve beds and reefs or sponge gardens that form a structure for other epifauna)		

Instructions to Clients for Criteria 2.2: Pelagic effects

There is potential for bivalve farming operations to exceed the ecological carrying capacity of the body of water. This can occur when bivalve filter-feeding on phytoplankton exceeds the capacity of the ecosystem to replenish the supply. The ASC Bivalve Standard addresses this issue using relatively simple calculations that compare how long it takes a population of bivalves to clear a body of water (clearance time–CT) with how long it takes for tides to flush that body of water (retention time–RT). In cases where the value of CT/RT is too low (failure of Indicator 2.2.1.), the farm may still be certifiable under conditions of high primary production. Please refer to Appendix I of the Bivalve Standard for the rationale and specific formulas for the carrying capacity measurement, including a protocol for defining applicable water body boundaries.

General Guidelines:

- 1) Farms will have to at least conduct an initial calculation of the water body area and the farm's area (Requirement 2.2.1.a). In many instances, such as enclosed bays or inlets, the geographic boundaries of the area in which the farm is located may be obvious and considered as the water body. In other situations, such as meandering complex waterways or the open coast, there may be no clear boundaries. In these cases, the water body will be defined by the "zone of influence", which will need to be calculated based on prevailing currents.
- 2) Calculate the percent of the total water body area that is covered by all of the farms within the water body, inclusive of the certification unit.
 - If less than 10%, Indicators in Criteria 2.2. must not be applied. Proceed to 2.3.1.
 - If greater than 10%, Indicators in Criteria 2.2. must be applied. Proceed to 2.2.1. for the two-tiered "Pelagic effects" indicators (below).
- 3) Two-tiered "Pelagic effects" indicators:
 - Calculate the ratio between clearance time and retention time (CT / RT).
 - If CT / RT is >1, farm is certifiable. Proceed to 2.3.1.
 - if CT / RT is <1, proceed to 2.2.2. Farm must calculate the ratio of clearance time over primary production time (CT / PPT).
 - If CT / PPT is >3, farm is certifiable. Proceed to 2.3.1.
 - If CT / PPT is >3, farm is not certifiable

*Note: Indicator 2.2.3. allows for the demonstration of compliance with Indicators 2.2.1. and 2.2.2. using equivalent calculations through more comprehensive carrying capacity modeling. Models must be published in peer-reviewed publications and must apply to the present state of the water body and all associated aquaculture to be accepted for equivalency.

2.2 Criteria: Pelagic effects

		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
2.2.1	<p>Indicator: The ratio of clearance time^[7] (CT) over retention time^[8] (RT)</p> <p>Requirement: >1</p> <p>Applicability: All*</p> <p>*If the area of all of the farms within a water body as defined in Appendix I of the Bivalve Standard, inclusive of the certification unit, is less than 10% of the total area of the water body, then requirements 2.2.1 and 2.2.2 need not apply.</p>	<p>Instructions for Indicator 2.2.1. Example calculations of clearance and retention times</p> <p>1) Calculate the volume of the water body:</p> <ul style="list-style-type: none"> - If the farm is located in easily definable water body (e.g. an estuary, bay or well defined area) and has tidally dominated water exchange, the total volume of the water body shall be calculated as follows: <ul style="list-style-type: none"> - Calculate the mean depth at high tide and the surface area of the water body - Calculate the volume of the water body (Vt) as the depth times the surface area - If the farm is located in offshore waters, then the water body volume will be based on a "zone of influence" calculation: <ul style="list-style-type: none"> - Calculate the "radius of influence" (RI) as the cumulative current speed over a 24 hour period - Calculate the volume of the water body (Vt) by assuming a circular surface area multiplied by the depth (Vt = (pi * RI²) * depth). If the area is in deep waters, the depth used shall be that defining the lower limits of phytoplankton growth ("lower growth line"). <p>2) Calculate the clearance time (CT): CT (days) = Vt / (N x C) Where Vt is the total volume of the water body (liters)*; N is number of bivalves in the water body; C is average clearance rate (liters/individual species/day) at harvest size</p> <p>3) Calculate the retention time (RT):</p> <ul style="list-style-type: none"> -If the farm is located an easily definable inshore water body and has tidally-dominated water exchange: RT (days) = -1 x P / ln (Vl / Vt) Where P is the tidal periodicity, the length of the tidal cycle (days) (e.g. ~0.5 days for semidiurnal tides); Vl is the total volume of the water body at low tide (liters); Vt is the total volume of the water body at high tide (liters) - If the farm is located offshore: RT = 24 hours <p>4) Calculate the ratio of CT / RT</p> <p>*Note: For deep stratified culture areas (e.g. open ocean and fjords), this calculation should be limited to the surface mixed layer. In areas where water exchange is not dominated by tidal flushing (e.g., controlled primarily by river flow or wind forcing) an appropriate volume exchange should be calculated.</p>	
		a. Present a map showing the water body and all farm locations (including the unit of certification). Calculate the percent of the water body area covered by farms and present values used in the calculation.	A. Verify the accuracy of values used in the defining the areas of the farm and water body.
		b. If combined area of all farms is < 10 % of total are of the water body, then 2.2.1 does not apply (Proceed to 2.3.1.).	B. Verify this conclusion and document in the audit report.
		c. If the area of the farm is >= 10% of the water body, calculate clearance time (CT) of the dominant bivalve stocks (wild and cultured) for the water body. Provide all bivalve census information and published clearance rates ^[9] used in the calculation.	C. Verify that the CT has been correctly calculated from appropriate census data and published clearance rate data. Verify bivalve density.
		d. If the area of the farm is >= 10% of the water body, calculate the retention time (RT) of the water body. Calculate CT / RT ratio. Provide all data used in the calculation, including references.	D. Verify that the farm meets the requirement of CT/RT>1 .

Footnote	^[7] Clearance time is the number of days required for the dominant bivalve stock(s) (wild and cultured) to clear the volume of the bay or regional water body (i.e., sites with no clear boundaries). The dominant species census should be based on the peak standing stock during the year. The calculation is based on published clearance rate data for the bivalve group (mussels, scallops, clams and oysters)		
Footnote	^[8] Retention time is the number of days for tides to flush a volume of water equal to the volume of the bay or water body		
2.2.2	<p>Indicator: Where clearance time is less than retention time, the ratio of clearance time over primary production time^[9] (PPT)</p> <p>Requirement: >3</p> <p>Applicability: All farms not compliant with 2.2.1.</p>	<p><i>for farms not compliant with 2.2.1.</i></p> <p>Instructions for Indicator 2.2.2.- Calculation of clearance time (CT) over primary production time (PPT)</p> <p>PPT is calculated as follows: PPT (days) = B / PPP Where: B is the yearly averages of phytoplankton biomass, PPP is the phytoplankton primary production (PPP) within the system (e.g. mg C / m² / day).</p> <p>*Note: B can be estimated from chlorophyll a measurements, published data or satellite predictions assuming a carbon to chlorophyll ratio of 50. PPP can be obtained from published results or model predictions. Phytoplankton biomass and primary production should be in the same units (e.g. mg C / m²). All values should be based on yearly averages with at least one value per season. Values should also represent spatial averages for the water body.</p>	
		a. Calculate the yearly averaged phytoplankton biomass (B) and primary production (PPP) for the entire water body. Provide all information regarding the sampling methods used and the locations and times of each sample. Provide all references used in the conversion of values into similar units.	A. Verify the accuracy of all estimates and that values used represent yearly averages for the entire extent of the water body.
		b. Calculate primary production time (PPT) and CT / PPT ratio. Provide all data used in the calculation, including references.	B. Verify that the ratio of CT / PPT > 3.
Footnote	^[9] PPT is the number of days required for the replacement of the standing stock of phytoplankton in the bay (i.e., time-scale of phytoplankton population growth). PPT is the ratio of yearly averages of phytoplankton biomass (B) to phytoplankton primary production (PPP) within the system. B can be estimated from chlorophyll a measurements, published data or satellite predictions assuming a carbon to chlorophyll ratio of 50. PPP can be obtained from published results or model predictions.		
2.2.3	<p>Indicator: Equivalency with requirements 2.2.1 or 2.2.2 may be demonstrated, if a farm or group of farms is able to prove, through more comprehensive carrying capacity modeling that, in aggregate, they do not exceed the ecological carrying capacity of the applicable water body in which they are located</p> <p>Requirement: Yes</p> <p>Applicability: -</p>	<p><i>for farms demonstrating compliance with Indicators 2.2.1 and 2.2.2 using more comprehensive modeling estimates of carrying capacity.</i></p> <p>Instructions for Indicator 2.2.3. Carrying capacity estimate equivalency using comprehensive modeling</p> <p>In order to ensure a high level of quality for carrying capacity compliance, alternate estimates using more comprehensive modeling must be derived from published peer-reviewed studies based on the present state of the water body and all associated aquaculture. Only studies published in peer-reviewed journals listed by the Institute for Scientific Information (ISI) will be acceptable for the evaluation of compliance with Indicator 2.2.3. See http://ip-science.thomsonreuters.com/mjl/ for a listing of ISI journals.</p>	
		a. Provide the published peer-reviewed publication describing the model as applied to the present state of the water body and all associated aquaculture.	A. Verify that the model has been published in a peer-reviewed journal and that it applies to the present state of water body and all associated aquaculture.
		b. Provide the model estimates of CT, RT, and PPT. If these were not directly presented in the publication, provide additional information as to how these parameters were calculated.	B. Verify that the model results clearly show that the farm does not exceed the ecological carrying capacity of the water body. CT/RT and PPT values must meet the levels indicated in 2.2.1 and 2.2.2, respectively.

2.3 Criteria: Critical habitat and species interactions			
		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
2.3.1	<p>Indicator: Allowance for harm to threatened/endangered species^[10] or the habitat on which they depend</p> <p>Requirement: None</p> <p>Applicability: All</p>	<p>Instruction to Clients for Indicator 2.3.1 - Presence of Species Listed as Threatened or Endangered on the IUCN Red List</p> <p>The farm must demonstrate that is knowledgeable of threatened/endangered species and the habitats upon which they depend. Threatened or endangered status may be based on national laws or the IUCN red list^[10].</p> <p>In order to determine whether IUCN red list species are present in the region, perform a search as follows:</p> <ul style="list-style-type: none"> - go to http://www.iucnredlist.org/ - follow to "other search options" - select "Taxonomy" and select "Animalia" and "Plantae" - indicate appropriate "Location", "Systems", "Habitat", - click on "run search" and record species listed and whether they are threatened by the farming activity. <p>Note: The IUCN Red List uses nine categories for ranking species according to threat, and search results may include species that are not currently threatened. For the purposes of determining whether a farm complies with indicator 2.1.1, species in the following IUCN categories may be excluded from further analyses: "Not evaluated", "Data Deficient", and "Least Concern".</p>	
		<p>NOTE: The guidelines on collecting spatial data for ASC can be found on https://www.asc-aqua.org/resources/for-farms/gis-portal/</p>	
		<p>a. Provide a list of threatened or endangered species as identified by national law or the IUCN Red List. To obtain the IUCN Red List designated species, perform the above search and record all IUCN Red List species and farm-related threats.</p>	<p>A. Repeat the search to verify that client obtained an accurate result. Verify through additional databases and government reports to cross-check whether endangered species exist in the immediate vicinity of the farm.</p>
		<p>b. Provide Geographical Information System (GIS) files according to ASC guidelines (see note above) showing the boundaries of the farm relative to nearby threatened/endangered species habitat.</p>	<p>B. Review GIS files and cross-check against independent information sources (e.g. ASC GIS app) to determine if the farm is sited nearby threatened/endangered species habitat.</p>
		<p>c. If a threatened or endangered species is identified in region of the farm (including receiving and source waters), document the specific actions the farm takes to minimize impacts.</p>	<p>C. Verify the actions taken by the client to minimize impacts and document them in the audit report.</p>
		-	<p>D. During interviews with local community members, confirm there is no evidence that the farm harms threatened/endangered species or the habitat on which they depend.</p>
Footnote	^[10] As defined by national law or as found in the International Union for Conservation of Nature Red List of Threatened Species.		
2.4 Criteria: Environmental awareness			
		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
2.4.1	<p>Indicator: Evidence of environmental training, compliance to regional codes of practices or implementation of environmental management plans.</p> <p>Requirement: Required</p> <p>Applicability: All</p>	<p>Instructions for Indicator 2.4.1. - Evidence of training, compliance to regional codes of practices or implementation of environmental management plans</p> <p>In order to demonstrate compliance of environmental awareness, all farms are required to document efforts taken to train staff in a set of environmental codes of practices and/or management plans. The set of environmental codes of practices and/or management plans used shall be demonstrated by evidence of <u>one</u> of the following at the time of the audit:</p> <ol style="list-style-type: none"> 1) Documentation of farm worker environmental training (e.g. certificates, evidence of workshops attended etc.); or 2) Documentation of regional codes of practice and actions taken to ensure compliance; or 3) Implementation of an environmental management plan. 	
		<p>a. Provide documentation of environmental training/education of staff (e.g. certificates, evidence of workshops attended etc.) (OR)</p>	<p>A. Verify documented evidence of farm worker environmental training (OR)</p>

		b. Provide documentation of regional codes of practice and actions taken to ensure compliance, including staff training (OR)	B. Verify that documentation of regional codes of practice are up to date and adhered to and that staff have been appropriately trained in its execution (OR)
		c. Provide evidence for implementation of an environmental management plan.	C. Verify that the farm has an environmental management plan and that the plan is implemented.
PRINCIPLE 3. AVOID ADVERSE EFFECTS ON THE HEALTH AND GENETIC DIVERSITY OF WILD POPULATIONS			
3.1 Criteria: Introduced pests and pathogens			
		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
3.1.1	Indicator: Allowance for the illegal introduction of a non-native species, pest or pathogen attributable to the farm within 10 years prior to assessment. Requirement: None Applicability: All	a. Maintain documentation showing the origin of culture stock including names, addresses, contact person(s) and delivery dates when applicable.	A. If documented evidence exists linking farm to an illegal introduction within 10 years prior to assessment, farm is not eligible for certification.
		-	B. During interviews with local community members, confirm there is no indication that the farm has caused an illegal introduction of a non-native species, pest, or pathogen in the last ten years.
3.1.2	Indicator: Documentation of compliance with established protocol or evidence of following appropriate best management practices for preventing and managing disease and pest introductions with seed and/or farm equipment. Requirement: Required Applicability: All	a. Provide documentation of established protocol or best management practices used in preventing and managing disease and pest introductions.	A. If applicable, documentation of compliance with established protocol or best management practices exists and is available.
		b. Provide evidence that the farm has implemented established protocols or best management practices for preventing and managing disease and pest introductions with seed and/or farm equipment.	B. During the on-site inspection look for evidence the farm has implemented protocols or best management practices provided in 3.1.2a
3.2 Criteria: Sustainable wild seed procurement			
		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
3.2.1	Indicator: Excluding larval collection, evidence that purchased or collected wild seed is not harvested from an open-access, unregulated source Requirement: Required Applicability: All	Instructions for Indicator 3.2.1. - Purchase or collection of wild seed from regulated sources	
		The requirement that farms use only wild spat or seed collected from regulated sources is necessary to reduce the potential risk for overfishing and the reproductive sustainability of the wild source stock. Assessments are necessary to determine whether or not the manner in which the wild seed is collected for grow-out adversely affects recruitment or demography of local bivalve populations. Special exceptions may include situations where assessment and monitoring of the wild stock has resulted in the conclusion that the stock does not require additional regulation.	
		a. Maintain documentation showing the origin of culture stock with names, addresses, contact person(s) and delivery dates of each purchase.	A. Verify that wild seed is not from an open-access, unregulated source
		b. Provide documentation that wild seed has not been collected from an open-access, unregulated source.	B. Verify that documentation is available that shows wild seed collected is procured from an area that falls under existing regulatory schemes

3.3 Criteria: Introduced non-native cultivated species		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
3.3.1	<p>Indicator: Evidence of responsible^[11] introduction of non-native cultivated species</p> <p>Requirement: Required</p> <p>Applicability: All</p>	<p>Instructions for Indicator 3.3.1 - Evidence of responsible^[11] introduction of non-native cultivated species</p> <p>Farms that cultivate non-native species must demonstrate how introductions were done responsibly. The International Council for the Exploration of the Sea (ICES) has established Code of Practice on the Introductions and Transfers of Marine Organisms (2005)* which covers considerations, recommended procedures, and guidelines for the implementation of new species introductions.</p> <p>Indicator 3.3.1 is intended to address the risks associated with the introduction of non-native species for the purpose of culture. Such introductions may pose a risk to the aquatic ecosystem through increased predation and competition, disease, habitat destruction and extinctions. Where introduction of a non-native bivalve species is allowed by law (e.g. a species identified on a "clean list" of non-harmful species), the best practice for reducing ancillary introductions is to follow the ICES Code of Practice. Longstanding and established non-native species that have historically been used for culture purposes are generally certifiable, while new introductions require compliance with ICES guidelines.</p> <p>* document link: http://info.ices.dk/pubs/Miscellaneous/Codeofpractice.asp</p>	
		a. If the farm works with the culture of newly-introduced non-native bivalve species, obtain permit(s) substantiating compliance with ICES guidelines for introduction of exotic species and certification to ICES requirements regarding parasites and pathogens.[11].	A. Verify the farm has obtained permits showing compliance with ICES guidelines for introduction of exotic species and certification to ICES requirements regarding parasites and pathogens.
Footnote	^[11] At a minimum, farms must have a permit(s) substantiating compliance with ICES guidelines for introduction of exotic species and certification to ICES requirements regarding parasites and pathogens.		
3.4 Criteria: Native species cultivation		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
3.4.1	<p>Indicator: For hatchery produced seed, documentation of efforts made to address genetic concerns specific to species and geographic region where the seed will be out-planted</p> <p>Requirement: Required</p> <p>Applicability: All farms producing seed</p>	<p>Instruction to Clients for Indicator 3.4.1 - Addressing Genetic Concerns Associated with Native Species Cultivation</p> <p>Farms that produce seed are required to demonstrate that they use appropriate designs and monitoring to minimize the risk to the genetic diversity of the wild stock. Farms have four options by which to demonstrate their compliance, and must provide documentation of <u>one</u> of the following:</p> <p>1) <u>Local wild broodstock</u> - Documentation that broodstock is from the wild, local population and that the spawned individuals are frequently rotated within spawning seasons and between years. Shall include the locations where local wild broodstock have been collected and the breeding history of individuals used in the production of seed in order to ensure their appropriate rotation within spawning seasons and between years</p> <p>2) <u>Reproductive potential</u> - Documentation of the scale of farming activities and the reproductive potential of crops (e.g., whether diploid or triploid, or considering age at harvest and age at first maturation) are well-below the size and reproductive potential of the natural population within a reasonable "dispersal kernel" from the farm.</p> <p>3) <u>Sterile seed production</u> - Documentation of the production of sterile seed for out-planting from breeding programs that intentionally alter wild stocks for improved culture traits, such as growth, yield, survival and morphology.</p> <p>4) <u>Selective breeding for restoration</u> - Documentation of cooperation with restoration efforts in the geographic region using out-planting that involves the intentional divergence from wild stocks to produce disease resistant wild populations.</p>	
		a. Provide documentation of the use of local, wild broodstock to address genetic concerns specific to species and the geographic region where the seed will be out-planted (OR)	A. Verify that efforts have been made to address genetic concerns specific to species and the geographic region where the seed will be out-planted. Document in the audit report the farms use of the local, wild population for the broodstock with appropriate rotation of spawned individuals. If there is uncertainty about whether a broodstock is of local origin, record source locality in the audit report (OR)

		b. Provide documentation of the scale of farming activities and the reproductive potential of crops (e.g., whether diploid or triploid, or considering age at harvest and age at first maturation) are well-below the size and reproductive potential of the natural population within a reasonable “dispersal kernel” from the farm. (OR)	B. Verify that the reproductive potential (e.g., whether diploid or triploid, or considering age at harvest and age at first maturation) of the hatchery produced seed is well-below the size and reproductive potential of the natural population within a reasonable “dispersal kernel” from the farm are (OR)
		c. Provide documentation on the production of sterile seed for out-planting from breeding programs that intentionally alter wild stocks for improved culture traits, such as growth, yield, survival and morphology (OR)	C. Verify the existence of a breeding program that produces altered sterile seed for out-planting (OR)
		d. Provide documentation of cooperation with restoration efforts in the geographic region using out-planting that involves the intentional divergence from wild stocks to produce disease resistant wild populations	D. Verify that the farm's breeding program is in coordination with existing restoration efforts in the geographic region.

3.5 Criteria: Transgenic animals

		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
3.5.1	Indicator: Allowance for farming of transgenic ^[12] animals Requirement: None Applicability: All	a. Maintain documentation showing the origin of culture stock with names, addresses, contact person(s) and delivery dates of each purchase (see 3.2.1a).	A. Verify that farm documents show the origin of culture stock with names, addresses and contact person(s) of suppliers.
		b. Prepare a declaration stating that the farm does not culture transgenic bivalves.	B. Verify that farm records for cultured stock (3.5.1.A) clearly indicate that the stock is not transgenic.
		-	C. Suspicion of transgenic shellfish being cultured requires validation by the sampling of 3 individuals from suspected stock and shipped for genetic mapping by an ISO 17025 certified laboratory to determine gene sequence and unknown sequences

Footnote ^[12] Introduced genes from other species

PRINCIPLE 4. MANAGE DISEASE AND PESTS IN AN ENVIRONMENTALLY RESPONSIBLE MANNER

4.1 Criteria: Disease and pest management practices

		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
4.1.1	Indicator: Allowance for the application of mutagenic, carcinogenic or teratogenic pesticides on the farm or farmed animals Requirement: None Applicability: All	Instruction to Clients for Indicator 4.1.1. - Use of mutagenic, carcinogenic or teratogenic pesticides	
		All farms must maintain a record of chemical use and chemical supplier contact information. Technical information on all chemical used by the farm shall be provided during the audit. Technical information on pesticides and other chemicals can be obtained through the World Health Organization, International Programme on Chemical Safety (IPCS): http://www.who.int/ipcs/en/ ; http://www.inchem.org/ .	
		a. Maintain a record of all chemicals (any substance that is added by the producer to farm or farmed animals) used for prior 12 month period by farm and/or contractors. If the farm is located in an integrated facility, all chemicals used in hatcheries and processing plants must be recorded, in addition to those used in grow-out. Supply technical information on all chemicals used on the farm.	A. Verify by inspection and review of chemical use records that no mutagenic, carcinogenic or teratogenic pesticides are used by the farm and/or contractors on the farm or farmed animals during any stage of culture.
		b. Provide chemical supplier name and contact information.	B. Verify chemical supplier and contact information
		-	C. Inspect the farm's chemical inventory and cross-check to a sample of records for purchase and receipt.

4.1.2	<p>Indicator: Allowance for the application of chemicals that persist as toxins in the marine environment or on the farm or farmed animals</p> <p>Requirement: None</p> <p>Applicability: All</p>	<p>Instruction to Clients for Indicator 4.1.2. - Use of chemicals that persist as toxins</p> <p>Chemicals that are known to persist as toxins include heavy metals and organic pollutants. A list of persistent organic pollutants (POPs), as recognized under the Stockholm Convention, can be found here: http://chm.pops.int/Convention/ThePOPs/ListingofPOPs/tabid/2509/Default.aspx</p>	
		a. Same as 4.1.1.a.	A. Verify by inspection and review of chemical use records that no chemicals are used by the farm and/or contractors on the farm or farmed animals that can persist as toxins in the marine environment.
		b. Same as 4.1.1.b.	B. Verify chemical supplier and contact information
		-	C. Inspect the farm's chemical inventory and cross-check to a sample of records for purchase and receipt.
4.1.3	<p>Indicator: Only non-lethal management (e.g., exclusion, deterrents and removal) of critical species^[13] that are pests or predators</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	<p>Instructions to Clients for Indicator 4.1.3 - Non-lethal Management of Critical Species that are Pests or Predators</p> <p>When the management of pests or predators includes species identified as threatened or endangered (as identified by Indicator 2.3.1), their management shall be through non-lethal methods only. In order to ensure compliance with Indicator 4.1.3, farms must provide a description of all methods of pest or predator management used at the site. Additionally, clients shall provide a list of all species of pests removed by lethal measures.</p> <p>If a farm cannot comply with indicator 4.1.3 because the ASC requirement stands in conflict with local or national regulations, the farm should inform the CAB and provide relevant documentary evidence. In such situations, farms may request a variation from ASC provided there is full and satisfactory justification to show how the farm will meet the intent of the Standard in an equivalent way.</p>	
		a. Provide a list of all predator and pest control devices used at the site and their locations.	A. Validate the accuracy of the control devices listed through site inspection
		b. Provide a description of all procedures used for managing pests and explain how the farm ensures that no harms is done to critical species (identified in 2.3.1.).	B. Verify that the farm takes appropriate precautions to ensure that no IUCN Red List species are harmed.
Footnote	^[13] As defined by national law or as found in the IUCN Red List of Threatened Species.		
4.1.4	<p>Indicator: Allowance for the use of leadline or lead sinkers on predator netting</p> <p>Requirement: None</p> <p>Applicability: All</p>	a. Ensure that no leadline or sinkers are located on the farm or used on predator netting.	A. Verify through site inspection that these materials are not located on or used by the farm.
4.1.5	<p>Indicator: Allowance for the use of explosives</p> <p>Requirement: None</p> <p>Applicability: All</p>	a. Ensure that no explosives are used on the farm.	A. During the on-site audit, verify that there are no explosives on site. Confirm during interviews with local community members that the farm does not use explosives.

PRINCIPLE 5. USE RESOURCES EFFICIENTLY

5.1 Criteria: Waste management/pollution control

		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
5.1.1	<p>Indicator: Evidence of waste reduction (e.g. reuse and recycling) programs</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	a. Provide a description of the most common production waste materials and indicate which waste materials are recycled.	A. During the on-site inspection look for evidence of recycling of waste materials
5.1.2	<p>Indicator: Evidence of appropriate storage and/or disposal of biological waste</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	a. Prepare a plan that details how the farm ensures proper disposal of all biological waste including separation and segregation of biological waste from non-biological waste.	A. Verify that the farm has a plan for the proper disposal of biological waste.
		b. Maintain records to show how the farm disposes of dead bivalves and other forms of biological waste.	B. Verify from farm records that disposals follow the farm's plan.
		-	C. During the on-site inspection, confirm the farm's plan is effectively implemented. Evidence will include interviews with farm workers who confirm that disposals followed the plan.
5.1.3	<p>Indicator: Evidence of appropriate storage and/or disposal of chemical and hydrocarbon wastes</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	a. Ensure that the disposal of disused equipment and waste is done promptly, including hazardous waste from the site according to local law and Material Safety Data Sheets (MSDS). Farms shall maintain an inventory of all chemicals used or located on site.	A. Verify through farm inspection that disposal is done according to local law and MSDS descriptions. e.g. no disposal of waste at sea or in any watercourse, burning of plastics and other synthetic materials
5.1.4	<p>Indicator: Spill prevention and response plan for chemicals/hydrocarbons originating from farming operations</p> <p>Requirement: Required</p> <p>Applicability: All</p>	a. Prepare a prevention and response plan spills of chemical and hydrocarbon waste. The plan shall outline the preventative maintenance of equipment exist and in place for the avoidance of fuel spills from vehicles, winches, cranes, and mechanical equipment on land and water.	A. Verify that the farm has sufficiently documented prevention and response plans for dealing with potential spills of chemical and hydrocarbon waste.
		b. Maintain documentation regarding the training history of all employees in the proper disposal of waste and in the prevention and management of chemical and hydrocarbon spills as described in the above plan (5.1.4.a).	B. Verify that the farm has sufficiently documented the training of all employees in current prevention and response plans to manage chemical and hydrocarbon spills.
		c. Maintain documentation of equipment or structures that have come into contact with spilled chemicals and have been subsequently cleaned.	C. Verify that the farm has sufficiently documented equipment or structures that have come into contact with spilled chemicals and the actions taken to clean the affected areas.

Criteria 5.2: Energy efficiency			
		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
5.2.1	Indicator: Evidence of energy use monitoring relative to production and ongoing effort to improve efficiency Requirement: Yes Applicability: All	a. Maintain records (e.g. receipts) of on-farm fuel and electricity usage. A minimum of 12 months of continuous records are required before the first audit.	A. Verify the farm maintains records.
		b. Compute the annual energy consumption for the last 12 months. Energy usage is itemized and summed in kilojoules. Conversions of energy components to kilojoules of energy can be found at: http://tonto.eia.doe.gov/energyexplained/index.cfm?page=about_energy_conversion_calculator .	B. Verify the accuracy of the calculated annual energy consumption.
		c. Using results from 5.2.1.b and the total weight (metric tons) of shellfish produced over the last 12 months, determine the farm's energy consumption relative to production.	C. Verify the accuracy of the calculated energy consumption relative to production.
		d. Document the main procedures undertaken by the farm to improve energy efficiency and provide a short summary of the effectiveness of those procedures.	D. Report the main procedures used by the farm to improve energy efficiency and include a short summary of effectiveness in the audit report.
5.2.2	Indicator: Maintenance records for farm equipment (e.g., boats and generators) are up to date and available Requirement: Yes Applicability: All	a. Prepare a maintenance plan which identifies the schedule for regular maintenance of farm equipment including boats and generators.	A. Verification that the farm has a plan covering regular maintenance of key farm equipment.
		b. Maintain records of equipment maintenance. A minimum of 12 months of continuous maintenance records must be provided for the first audit.	B. Verify that maintenance records of equipment are accurate and complete for prior 12 month period
PRINCIPLE 6. BE A GOOD NEIGHBOR AND CONSCIENTIOUS COASTAL CITIZEN			
6.1 Criteria: Community relations and interaction			
		Compliance Criteria (Required Client Actions):	Auditor Evaluation (Required CB Actions):
6.1.1	Indicator: Visible floats must be of a uniform color, except where otherwise specified by law (if applicable to growing area) Requirement: Required Applicability: All	a. If the farm uses visible floats, ensure that they are all uniform in color.	A. If applicable, verify through site inspection that floats are uniformly colored.
		-	B. Verify that lights and bright colored buoys are minimized in comparison to those required for navigational safety
6.1.2	Indicator: Uniform positioning and orientation of visible farm structures, except where specified by law (if applicable to growing area) Requirement: Required Applicability: All	a. Ensure that visible farm structures are uniformly positioned and oriented and do not impede navigation.	A. Verify through site inspection
6.1.3	Indicator: Allowance for floats made out of open-cell Styrofoam Requirement: None Applicability: All	a. Ensure that no open-celled Styrofoam floats are used or located on the farm.	A. Verify through site inspection that open-cell Styrofoam is not located on or used by the farm.

6.1.4	Indicator: Noise, light and odor originating from the farm are minimized in areas where it may impact others (if applicable to growing area) Requirement: Required Applicability: All	a. Prepare a list of all sources of noise, light and odor originating on the farm and include actions taken to reduce them	A. Verify the existence of a list of all sources of noise, light and odor originating on the farm. Verify that actions taken to reduce these sources are appropriate.
		b. Ensure that designated storage areas and containers exist for the materials that create odors.	B. Verify through site inspection that storage areas and containers for materials that may create odor exist and are clearly designated.
6.1.5	Indicator: Evidence of compliance with all applicable navigational rules and regulations Requirement: Required Applicability: Sea-based Farms	a. Provide a copy of local navigation rules and regulations.	A. The farm maintains a copy of local navigational rules and regulations.
		b. Maintain records of the training of relevant farm staff in local navigational rules and regulations.	B. Verify from records that all relevant staff have been trained.
		-	C. Verify through on-site interviews that workers are able to demonstrate an understanding of local navigational rules and regulations and the competency to act in accordance.
6.1.6	Indicator: Documented cleanup of receiving shoreline in response to gear loss based on local conditions Requirement: Required Applicability: All	a. Maintain a record of effort spent cleaning the receiving shoreline in response to gear loss. Record shall span at least a 12 month period prior to the audit.	A. Verify the existence of a record of cleaning the receiving shoreline. Verify that the cleanup frequency accurately reflects the probability of gear loss based on local conditions.
6.1.7	Indicator: Substantial gear (e.g., floats, cages, bags, predator nets and racks) is identifiable to farm (if applicable to growing area) Requirement: Yes Applicability: All	a. Ensure that all substantial gear is clearly labeled and identifiable as belonging to the farm. At a minimum, labeled gear shall include floats, cages, bags, predator nets and racks.	A. Verify through site inspection that any farm equipment is attributable to farm.
6.1.8	Indicator: Provision of equipment for gear recovery (e.g., scoop nets and grapple hooks) Requirement: Required Applicability: All	a. Ensure that the farm maintains equipment and /or mechanisms for recovering lost gear.	A. Verify through site inspection that the farm has recovery equipment and/or mechanisms for recovering lost gear.

6.1.9	<p>Indicator: A mechanism (e.g., insurance or an industry agreement to collect derelict gear) is in place for the decommissioning of abandoned farms</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	a. Provide documentation of a mechanism for the collection and decommissioning of gear.	A. Verify the existence of a mechanism for the collection and decommissioning of gear.
6.1.10	<p>Indicator: Conflict resolution protocol, including publicly available registry of complaints and evidence of due diligence to resolve them</p> <p>Requirement: Required</p> <p>Applicability: All</p>	a. Provide documentation outlining the farm's protocol for responding to complaints lodged by stakeholders, community members, and organizations.	A. Verify the existence of a farm protocol for responding to complaints lodged by stakeholders, community members, and organizations.
		b. Maintain publically available documentation of registered complaints and farm responses.	B. Verify that the farm implements its policy for handling stakeholder complaints as evidenced by farm documentation.
		-	C. Verify from the record that past complaints, when brought to farm attention, were dealt with swiftly. Confirm through interviews with representatives from the local community.
6.1.11	<p>Indicator: Evidence of outreach (e.g., meeting records, newsletters, consultation with communities and indigenous groups, or membership in association with documented outreach program)</p> <p>Requirement: Required</p> <p>Applicability: All</p>	<p>a. Provide documentation of community outreach and measures taken to maintain positive communication. Documented evidence shall include one or more of the following:</p> <ul style="list-style-type: none"> - meeting records, - newsletters, - records of consultation with communities and indigenous groups, - membership in an association with a documented outreach program 	A. Verify that the client has documentary evidence of community outreach
6.1.12	<p>Indicator: Evidence of acknowledgment of indigenous groups' rights (if applicable to growing area)</p> <p>Requirement: Required</p> <p>Applicability: All</p>	a. Provide a record of agreement or proof of acknowledgement of indigenous rights	A. Verify that records of agreement or proof of acknowledgement are evident and available.

**Social requirements of this Standard shall be audited by an individual who is a lead auditor in conformity with SAAS Procedure 200 section 3.1.
(See ASC Farm Certification and Accreditation Requirements)**

***Interviews with farm workers and others will be part of this audit.
It will be up to the auditor's (random) discretion who will be interviewed and when and how this will be done.***

PRINCIPLE 7. DEVELOP AND OPERATE FARMS IN A SOCIALLY AND CULTURALLY RESPONSIBLE MANNER

7.1. Criteria: Child labor

		Compliance Criteria (Required Client Actions):
7.1.1.	Indicator: Incidences of child [14] labor [15] Requirement: 0 Applicability: All	a. Minimum age of permanent workers is 15 or higher (per national legal minimum age).
		b. System exists to monitor hours and conditions of young workers and light work by children.
		c. Young workers from 15 to 18 years of age [as defined in footnote 16]: have no conflicts between work and schooling; do not spend more than 10 hours/day on transportation time, school and work; and do not perform hazardous work [as defined in footnote 17].
		d. Children under 15 perform only light work. Light work & school not to exceed 7 hours/day.
		e. Equal treatment for children of migrant workers.

Footnote [14] 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 International Labor Organization (ILO) Convention 138, the lower age will apply.

Footnote [15] "Child labor" 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.

Footnote [16] A "young worker" is defined as any worker between the age of child, as defined above, and under the age of 18.

Footnote [17] "Hazardous work" is defined as work that, by its nature or circumstances in which it is carried out, is likely to harm the health or safety of workers.

7.2. Criteria: Forced, bonded, compulsory labor

		Compliance Criteria (Required Client Actions):
7.2.1.	Indicator: Incidences of forced [18], bonded [19], or compulsory labor Requirement: 0 Applicability: All	a. Contracts clearly stated and understood by employees, no 'pay to work' schemes through labor contractors or training credit programs.
		b. Employees free to leave workplace and manage their own time.
		c. Employer does not withhold employee's original identity papers.
		d. Employer shall not withhold any part of workers' salaries, benefits, property or documents in order to oblige them to continue working for employer.
		e. Employees not obligated to stay in job to repay debt.

Footnote	[18] "Forced labor" is all work or service that is extracted from any person under the menace of any penalty for which said person has not offered himself or herself voluntarily or for which such work or service is demanded as a repayment of debt. "Penalty" can imply monetary sanctions and physical punishment, such as loss of rights and privileges or restriction of movement (or withholding of identity documents).	
Footnote	[19] "Bonded labor" is when a person is forced by the employer or creditor to work to repay a financial debt to the crediting agency.	
7.3. Criteria: Discrimination		
Compliance Criteria (Required Client Actions):		
7.3.1.	<p>Indicator: Incidences of discrimination [20]</p> <p>Requirement: 0</p> <p>Applicability: All</p>	<p>a. Written anti-discrimination policies in place, stating that the company does not engage/support in discrimination in hiring, remuneration, access to training, promotion, termination or retirement based on race, caste, national origin, religion, disability, gender, sexual orientation, union membership, political affiliation, age or any other condition that may give rise to discrimination</p> <p>b. Worker testimony supports that the company does not interfere with the rights of personnel to observe tenets or practices, or to meet needs related to race, caste, national origin, religion, disability, gender, sexual orientation, union membership, political affiliation or any other condition that may give rise to discrimination. Records indicate objective mechanisms for employee reviews and the offering of promotion and training opportunities</p>
Footnote	[20] "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 favor of people from certain underrepresented groups may be legal in some countries.	
7.4. Criteria: Health and safety		
Compliance Criteria (Required Client Actions):		
7.4.1.	<p>Indicator: All health and safety related accidents and violations are recorded and corrective action is taken when necessary</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	<p>a. Documentation is generated with regards to occupational health and safety violations.</p> <p>b. Corrective action plans are implemented in response to accidents that have occurred. This should include: analysis of the root causes, address the root causes, remediate and prevent future accidents of similar nature.</p>
7.4.2.	<p>Indicator: Occupational health and safety training is available for all employees</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	<p>a. Minimization of hazards/risks in the working environment, including documented systemic procedures and policies to prevent workplace hazards and their risks, shall exist and the information shall be available to employees.</p> <p>b. Emergency response procedures shall exist and be known by employees.</p> <p>c. Health and safety training for all employees is available, including training on potential hazards and risk minimization.</p> <p>d. Potentially dangerous chemicals are stored properly and as prescribed.</p>
7.4.3.	<p>Indicator: Employer responsibility and proof of insurance (accident or injury) for employee medical costs in a job-related accident or injury, unless otherwise covered</p> <p>Requirement: Yes</p> <p>Applicability: All</p>	<p>a. Documentation maintained by management confirms that all personnel are provided sufficient insurance to cover costs related to occupational accidents or injuries. Equal insurance coverage must include temporary, migrant or foreign workers.</p>

7.5 Criteria: Fair and decent wages		
		Compliance Criteria (Required Client Actions):
7.5.1.	Indicator: Payment of fair and decent wages Requirement: Yes Applicability: All	a. Employers/Managers understand and have policies to ensure the principle of equal pay for equal work.
		b. Employers ensure wages paid for a standard working week (no more than 48 hours) always meet, at least, legal/industry minimum standards.
		c. Labor conflict resolution policy in place to track conflicts and complaints raised, and responses to conflicts and complaints.
		d. Ratio of lowest wage rate to basic needs wage always exceeds 100%.
7.6. Criteria: Freedom of association and collective bargaining		
		Compliance Criteria (Required Client Actions):
7.6.1.	Indicator: Employees have access to freedom of association and collective bargaining Requirement: Yes Applicability: All	a. Workers have the freedom to form and join any trade union, free of any form of interference from employers or competing organizations set up or backed by the employer. The ILO specifically prohibits "acts which are designed to promote the establishment of worker organizations or to support worker organizations under the control of employers or employers' organizations".
		b. Local trade union, or where none exists a reputable civil-society organization, confirms no outstanding cases against the employer for violations of employees' freedom of association and collective bargaining rights.
		c. Trade union representatives have access to their members in the workplace at reasonable times on the premises.
		d. Explicit communications from the employer about their commitment to freedom of association and collective bargaining rights of all.
		e. If trade unions exist, they are able to access/inform all workers directly (posters, pamphlets, visits).
7.7. Criteria: Non-abusive disciplinary practices		
		Compliance Criteria (Required Client Actions):
7.7.1.	Indicator: Incidences of abusive disciplinary practices occurring on the farm Requirement: 0 Applicability: All	a. There is never any use of or support for (e.g. subcontractors using) corporal punishment, mental or physical coercion, or verbal abuse.
		b. Fines or wage deductions shall not be acceptable as a method for disciplining workers (indicated by policy statements, as well as evidence from worker testimony).
		c. Procedures exist for situations in which disciplinary action is required, and they establish the use of progressive verbal and written warnings. Aim should always be to improve the worker before letting him/her go. (Indicated by policy statements as well as evidence from worker testimony).

7.8. Criteria: Working hours		
		Compliance Criteria (Required Client Actions):
7.8.1.	<p>Indicator: Incidences, violations or abuse of working hours and overtime laws or expectations</p> <p>Requirement: None</p> <p>Applicability: All</p>	a. No deductions in pay for disciplinary actions.
		b. Wage and benefits are clearly articulated to employees and rendered to employees in a convenient manner; e.g. no need to travel to collect benefits, no promissory notes, coupons or merchandise; payment in cash or check.
		c. Labor-only contracting or false apprenticeship schemes are not accepted, including: revolving/consecutive labor contracts used to deny benefit accrual.
		d. Clear, transparent mechanism for wage setting known to employees.
		e. Employer shall comply with applicable laws and industry standards related to working hours. "Normal workweek" can be defined by law but shall not on a regular basis (constantly or majority of the time) exceed 48 hours. Only if allowed by law, variations (to the 48-hour regular work week) based on seasonality may apply.
		f. All overtime shall be paid at a premium and should not exceed 12 hours per week.
		g. Overtime work shall always be voluntary.