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The views and opinions expressed in this report do not necessarily reflect the official policy or position of the Marine Stewardship Council. This is a working paper, it represents work in progress and is part of ongoing policy development. The language used in draft scoring requirements is intended to be illustrative only, and may undergo considerable refinement in later stages.

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1. Impact Assessment Report - Overview

1.1. Impact Assessment Framework

The aim of impact assessment is to provide clear information on the impacts of the options developed to sort out the policy issues identified in the project inception. It serves as a basis for comparing options against one another and against the business-as-usual scenario, and identify a preferred option if possible. It does not replace decision-making but is used as a tool to support the decision-making process and underpin evidenced based decision-making; increasing transparency, making trade-offs visible and reducing bias.

Impact assessment should help to:

- Specify how proposed options will tackle the identified issues and meet objectives
- Identify direct and indirect impacts, and how they occur
- Assess impacts in both qualitative and quantitative terms.
- Help find perverse or unintended consequences before they occur.
- Where possible, make risks and uncertainties known.

This is achieved by following MSC's Impact Assessment Framework that outlines when and how to undertake Impact Assessment. This ensures an efficient, systematic and consistent approach to policy development to underpin a responsive, robust and credible program. In particular, the Impact Assessment Framework defines the different types of impact (see below) and a suite of methodologies best suited to assessing each type. The impact types used in the Impact Assessment are defined as follows:

- 1. **Effectiveness:** The extent to which the change is deemed likely to be successful in producing the desired results and resolving the issue(s) originally identified.
- 2. Acceptability: The extent that the change is considered tolerable or allowable, such that the MSC program is perceived as credible and legitimate by stakeholders.
- **3. Feasibility:** The practicality of a proposed change and the extent to which a change is likely to be successfully implemented by fisheries within a given setting and time period.
- **4. Accessibility & Retention:** The extent to which the change affects the ability of fisheries (both currently certified and those potentially entering assessment in the future) to achieve and maintain certification (i.e. changes in scores, conditions and pass rates).
- **5. Simplification:** The extent to which the change simplifies and does not further complicate the Standard such that it can be easily and consistently understood and applied.
- **6. Auditability:** The extent to which the change can objectively be assessed by Conformity Assessment Bodies (CABs) and Accreditation Services International (ASI) to determine whether the specified requirements are fulfilled, and CABs can provide scores.

The Impact Assessment report presents the results of this process, whereby each of the options for proposed changes to the Fisheries Standard are tested to understand their potential effects across the six defined impact types.

1.2. Problem statement

The intent of the Fisheries Standard ecosystem component is to ensure that a Unit of Assessment (UoA) does not cause serious or irreversible harm to the key elements of ecosystem structure and function. To achieve this, the component evaluates evidence related to the ecosystem status, the management in place and the level of knowledge available on the impacts of the UoA on the ecosystem. Although, this component may use scores from other components of Principle 2 (impact on primary and secondary species, endangered, threatened or protected (ETP) species, or habitats) to evaluate the UoA impact; it is expected that the assessment focuses on ecosystem impacts that may not have been addressed or monitored previously. Such impacts can occur on trophic structure, community diversity/distribution, and/or the natural productivity of the ecosystem.

However, there are concerns from the MSC team, assessors, and stakeholders that the component is outdated, redundant, and that it may have been applied inconsistently across fisheries. In response, the Ecosystem component became part of Fisheries Standard Review, with the objective to ensure the component reflects best practice performance for outcome, information and management, and investigate options for possible refinement1. The review focussed on two questions: (1) Do the ecosystem component requirements reflect science and management best practice? And (2) is there ambiguity and redundancy in the ecosystem requirements?

In December 2019, TAB decided to move this project from the 'Evolution' to the 'Effectiveness' FSR workstream. This decision resulted in a change of scope of the project. The review will focus on the application of the current ecosystem requirements (2), and no longer on whether our intent reflects best practice for outcome, information and management (1).

2. Objectives

Strengthen the ecosystem requirements to improve consistent and efficient application of the ecosystem Performance Indicators (PIs), by

- 1. clarifying how to define the ecosystem of assessment and choice of key elements; and
- 2. clarifying the required information and information adequacy depending on preferred option of evidence requirements work;

Following objectives are covered by the FSR Risk-Based Framework project, but are strongly dependant or linked to the ecosystem requirements and therefore this project.

- a. Ensure that the triggering requirements for using the RBF are auditable covered by RBF work package 3.
 - i. Clarify what are the information gaps that trigger the use of SICA when assessing PI2.5.1.
- b. Clarify what defines stakeholder engagement in the SICA and the wider RBF methodologies covered by RBF work package 4

3. Options

3.1. Initial Impact Assessment

The following options were considered in the initial Impact Assessment.

Option #	Option title		Description		
0	Status quo / busi	ness as usual			
1	No change in the Ecosystem PIs	A: Tightening the fishery team qualification and competency criteria	A: Tighten Table PC3 – 3.a in the FCP and no change in the actual ecosystem requirements in the Fisheries Standard		
		B: Develop additional training materials and/or calibration workshops	B: Develop for assessors who score the ecosystem requirements to promote consistent scoring among assessors		
2	Change in the Ecosystem PIs: clarify existing language and definitions		Clarification is given for the definitions on 'ecosystem' and 'key (ecosystem) elements'. Changes include that key elements on which the UoA has an impact should be identified and scored separately.		
3	Remove Ecosystem PIs from the Fisheries Standard		Removal of PI2.5.1, 2.5.2 and 2.5.3, meaning impacts of the UoA on the key elements of the ecosystem structure and function will not be considered in the Fisheries Standard.		

4. Summary of impacts

4.1. Impacts of the business-as-usual scenario

Some of the requirement language in the ecosystem Performance Indicators (PIs) 2.5.1, 2.5.2, and 2.5.3 is not very clear and has been the subject of inconsistent application. A review of fisheries assessment reports showed a wide range of detail when scoring the ecosystem PIs. The work highlighted that definitions for 'ecosystem' and 'key (ecosystem) elements' have been applied inconsistently between assessment reports. Confusion also exists around how an ecosystem and its structure and function is defined, including how the underlying key elements are to be considered within an assessment.

The business as usual will result in assessment being assessed inconsistently. Assessment teams apply the ecosystem requirements differently, pick and choosing what aspects of the ecosystem to assess which potentially means that fisheries get different treatment.

4.2. Impacts of the proposed changes – Option 1

Current language and definitions in the ecosystem PIs are unclear and open for interpretation and therefore heavily rely on expert judgement. Additional training for assessors on how to score the ecosystem requirements could improve consistency in scoring and improve alignment with MSC intent. In addition, requiring more experienced assessors for scoring the ecosystem PIs, could result in more consistent scoring. Current assessor qualification and competency criteria (FCP v2.2 Table PC3 – 3.a), do not require assessment team members to have experience in research into, policy analysis for, or management of ecosystem interactions.

Option specifics

- This option would not include any changes to the existing language of the ecosystem requirements for PI2.5.1, 2.5.2, or 2.5.3 and therefore not give any clarification on the definitions.
- This option would include creating additional training on how to score the ecosystem PIs.
- This option would include a change in assessor qualification and competency criteria to require at least one assessor with experience in ecosystem interaction.

Considerations

While no improvements would be made to the current language or definitions and therefore remains open for different interpretation by assessment teams, more consistent application of the ecosystem PIs and therefore scoring of fishery assessments would be expected.

If the assessor qualification and competency criteria are refined in line with the proposal CABs may struggle contracting assessors. For example, the Peer Review College has 36 reviewers (31% of total) with high level of experience on ecosystem interactions, based the competency criteria of Table PC3, and are able to lead the peer review for this topic (November 2020). If only a limited number of ecosystem experts exist, assessment costs could increase for fishery clients as there are no experts available in the region of this fishery.

4.3. Impacts of the proposed changes – Option 2

This option will clarify the definitions on 'ecosystem' and 'key (ecosystem) elements' with the aim of improving consistency and application of Ecosystem PIs. This option also includes a clarification of information PI (2.5.3). Revisions have been informed through review of application of PIs 2.5.1, 2.5.3, and 2.5.3 by a consultant in 2016.

Whilst the requirement language of the ecosystem PIs is not very clear and open to interpretation, the intent that ecosystem should be identified, and all key ecosystem elements should be identified and assessed separately is clear. However, review of scoring text of PI2.5.1 showed that assessment teams not always define what ecosystem or which key elements were considered. This option looks into clarifying this intent by changes in the ecosystems requirements, and corresponding changes to the reporting template to facilitate this clarification on scoring to improve consistency in how key ecosystems elements are scored and improve alignment with MSC intent

Option specifics

This option would include the clarification in the requirements and change in the reporting template specifying that key ecosystem elements are identified and scored separately in the context of PI 2.5.1 and PI 2.5.3.

Considerations

An exploratory review was done on the used definitions and language for 'Ecosystem' from a range of organisations, governments, and policies. The review showed that there is no global recognised ecosystem typology (e.g. Large Marine Ecosystems, ecoregions, or FAO region) and therefore no prescribed list of ecosystems can be given by the MSC. The Fisheries Standard should allow flexibility when defining the ecosystem so that fisheries can be assessed based on data and its spatial scale collected by their management agency or scientific research in their region. The ecosystem requirements should be broadly applicable and provide a consistent framework in which ecosystem structure and function is assessed on the appropriate scale.

MSC's definition of 'ecosystem' focusses on the ecological state of the key ecosystem elements on which the fishing activity has an indirect impact. MSC's intent of the ecosystem PIs, is that the UoA should not cause serious or irreversible harm to the key elements underlying the ecosystem structure and function.

5. Impacts

The impact assessment presented in Table 1 below is based on feedback from STAC and TAB, feedback provided by outreach co-readers, pilot testing, and ASI auditability review.

5.1. Overview of impacts

Table 1. Impact assessment reporting table

	Description	Option 0: Business as usual	Option 1: More ex	Option 2: Clarify language &	
	•	<u> </u>	1A – tighten competence criteria	1B – additional training	definition
Effectiveness	Is the change effective at meeting the MSC's intent?	-Review showed wide variety of detail in justification in scoring ecosystem PIsReview showed fisheries consistently scoring high and a low number of raised conditions on PI2.5.X.	-Language and definitions remain open for interpretation, but ecosystem PIs would be scored by a smaller group of experienced assessors. This may improve consistent scoring and meeting MSC's intent.	-Language and definitions remain open for interpretation. +Additional training may improve consistent scoring and meeting MSC's intentAdditional training on unclear requirements (therefore unclear MSC's intent) could seem not to be effective in resolving inconsistent scoring. However, this Option is considered to be effective when MSC's intent is clear (through e.g. clarifications).	+More prescriptive requirements aiming in more consistent scoring and less need of interpretation/ expert judgement.
	The option seems effective at resolving the issue(s) consistently and reliably	1 = Completely disagree	3 = Neither agree nor disagree	3 = Neither agree nor disagree	1 = Completely disagree
Acceptibility	Is the change acceptable to stakeholders?	-MSC has made public statement on delivering changes to the ecosystem PIs as part of the FSR. + Common agreement among P2 assessors that there is no urgent fix needed as other areas are more pressing to be improved in the Standard.	-Stakeholders might feel this option will not resolve the issue. Expectation of a more significant change to the StandardCABs might have difficulties contracting the required personnel. +The intended effect of the option would be more consistent applied ecosystem requirements.	-Stakeholders might feel this option will not resolve the issue. Expectation of a more significant change to the StandardAssessor will need to follow additional training which is an extra burden on them. +No foreseen impact on fishery clients.	-Stakeholders might feel this option will not resolve the issue. Expectation of a more significant change to the Standard. +The intended effect of the option would be more consistent applied ecosystem requirements and appropriate scoring.
	The option seems acceptable to stakeholders	2 = Disagree	1 = Completely disagree	3 = Neither agree nor disagree	4 = Agree
	Is the change feasible to fishery partners?	+No risk. The status quo will not affect retention of fisheries in the program, accessibility is expected to remain high given the low number of set condition in current fisheries.	- Limited number of assessors with required ecosystem interactions experience could lead to increase of cost for the fishery client in future assessments. This could affect accessibility to the MSC program, risk is potentially bigger for fisheries in global South.	+No risk in terms of retention or accessibility is expected.	+Clarifying the language and definition would be technical feasible for fishery partners as it is not aimed to change the performance bar for fisheries. +No increase in cost is foreseen for fishery partners.
Feasibility	The option seems technically feasible for fishery partners	5 = Completely agree	1 = Completely disagree	5 = Completely agree	5 = Completely agree
	The option seems affordable for fishery partners	5 = Completely agree	1 = Completely disagree	5 = Completely agree	5 = Completely agree
	The option seems possible given the management contexts of fishery partners	4 = Agree	5 = Completely agree	5 = Completely agree	5 = Completely agree

	Description Option 0: Business as usual		Option 1: More ex	Option 2: Clarify language &	
	Description	Option v. Business as usual	1A – tighten competence criteria	1B – additional training	definition
	The option seems doable within 5 years for fishery partners	5 = Completely agree	3 = Neither agree nor disagree	5 = Completely agree	5 = Completely agree
Accessibility & Retention	Does the change affect the accessibility and retention of fisheries in the MSC Program?	+No risk. The status quo will not affect retention of fisheries in the program, accessibility is expected to remain high given the low number of set condition in current fisheries.	-Limited number of assessors with required ecosystem interactions experience could lead to increase of cost for the fishery client in future assessments. This could affect accessibility to the MSC program, risk is potentially bigger for fisheries in global South.	+No risk in terms of retention or accessibility is expected.	+No risk in terms of retention or accessibility is expected. This option would clarify the intent on how to score the PIs and should not change the performance bar. -Some assessments scored ecosystem elements on which the fishery did not have an impact on, boosting the score. Impact is unknown at this stage, but is not expected to lead to major changes in final P2 score. More impact testing is needed. -Combining some of the information SIs to reduce confusion might lead to minor score changes. Impact is unknown at this stage, but is not expected to lead to major changes in final P2 score. More impact testing is needed.
	The option seems accessible to fisheries seeking certification in the future	5 = Completely agree	1 = Completely disagree	5 = Completely agree	3 = Neither agree nor disagree
	The option seems accessible to currently certified fisheries	5 = Completely agree	2 = Disagree	5 = Completely agree	3 = Neither agree nor disagree
Simplification	Does the change simplify the Standard?	-The status quo will result in ambiguous and redundant PIs within the Fisheries Standard.	-No changes to language or definitions in the Standard and therefore no simplification of the Standard.	-No changes to language or definitions in the Standard and therefore no simplification of the Standard.	+Clarification of the language and definitions may simplify the requirements by avoiding confusion.
	The option seems to simplify the Standard	1 = Completely disagree	1 = Completely disagree	1 = Completely disagree	3 = Neither agree nor disagree
Auditability	Is the change auditable by CABs?	-Used language and definitions are open for interpretation and therefore difficult to audit by CABs.	- No changes will be made to the language or definitions and therefore are still open for interpretation by CABs. +As the current language rely heavily on expert judgement, having a smaller group of experienced ecosystem assessors may lead to more consistent scoring and to an improved selection of scored key elements.	- No changes will be made to the language or definitions and therefore are still open for interpretation by CABs.	+Requirement language and used definitions are not yet finalised in this option, but it is not anticipated that the proposed revisions would create auditability issues.
	The option seems to be auditable by CABs	2 = Disagree	2 = Disagree	2 = Disagree	3 = Neither agree nor disagree

5.2. Pilot testing

5.2. Pilot testing

The Ecosystems project went through initial pilot testing in July 2021 as part of the larger Fisheries Standard pilot testing process. The main findings of the first round of testing were:

- "Identify and assess all relevant key ecosystem elements" may involve significant extra work
- No difference in scoring despite changes to the SAs (not aligned with the new intent for the ecosystem component)

Table 2 lists the feedback received during pilot testing and a response to why it was/was not incorporated into the Master Draft.

Table 2. Pilot testing feedback

	not testing recuback	
PI/SI	CAB Notes/Feedback	Response
2.5.1.a	"Identify and assess all relevant key ecosystem elements" (SA	Thank you for the comment. We have decided to
	3.16.3) may involve significant extra work unless assess is based	keep this clause as this is a necessary step for
	on published information and then perhaps "score against	CABs to sufficiently score this PI/SI.
	guildposts may be more appropriate.	
		In addition, it is hoped that the lag time between
		release and effective date for use would allow for
		CABs and fisheries to sort out issues such as these.
2.5.1.a	The updated standard should reflect the need for addressing	Thank you for the comment. Unfortunately, this
	pollution from vessels – the assessment team should check how	issue falls outside of the scope of the Ecosystems
	waste from vessels is dealt with; how old are the vessels –	project. Therefore, the issue has been noted, but
	rustpots or latest technology – as this impacts air pollution; the	put on hold.
	update should also reflect the growing understanding of the	
	importance of marine sediments as carbon sinks and how this is	
	disturbed and the consequences, by dredging/ trawling. Fishing	
	vessels impact the ecosystem in more ways than by fishing. That	
	needs to be recognised and evaluated too.	
2.5.1.a	As noted in previous rounds of the FSR, the ecosystem	Thank you for the comment. The scope of this
	component was assessed in line with the new intent for the	project has changed, and it was determined that
	Ecosystem component (so not a regurgitation of primary,	the focus would be on developing additional
	secondary, etp and habitats, but a look at wider ecosystem	training materials and/or calibration workshops for
	processes affected by the fishery). There would be no difference	assessors and clarifying the definitions of
	in scoring here despite the changes to the SAs.	"ecosystem" and "key (ecosystem) elements,"
		which we hope we've done with the proposed
		changes.

It also went through an auditability review simultaneously.

5.3. Consultations

The Ecosystems project has undrgone several consultations.

Table 3. Ecosystems project consultancies

Tuore 5.	Ecosystems project	
Dec.	Consultancy	Overall recommendations:
2019	report	1st recommendation: Establishment of the MSC Ecosystems Evaluation General Framework (MSC EEGF) with selected Operational Objectives (MSC OO) and candidate indicators that encompass different levels of data needs, applicability, uncertainty, and resource intensity. The MSC EEGF and MSC OO should be common to all Ecosystems evaluations.
		2nd recommendation: Adapt the proposed general indicator' framework in meaningful regional contexts taking into account the ecological, legal and management context of each region. It is advisable that this is perform with assistance or involvement of the Regional Fisheries Management Organizations and other national and regional management and policy bodies. The candidate indicators can be then selected to fit the regional contexts.
		3rd recommendation: Test the selected indicators per region in specific and well-known case studies that allow MSC to learn from the process and improve the MSC EEGF application procedure and selection of indicators within the regional context. Specific case studies could be located in different regional seas and incorporate local expertise to evaluate the Ecosystems Component status.
		Fourth recommendation: Several ongoing initiatives seem to follow a similar philosophy and strategy to what is proposed in this study. This is for example the case of the Benchmarks for Ecosystem Assessment by Lenfest Ocean Program, the Integrated Ecosystem Assessments by NOAA (NOAA, 2019)or previous work developed under IndiSeas project and its follow ups. 11To

April 2019 April 2016	P2 workshop with auditors Consultancy							
	Consultancy							
2016		Discussion and Recommendations:						
	report	Recommendations from this re		wo themes.				
		Theme 1: Develop the ecosystee The first theme is intended to perform the ecosystem PIs between assessored appropriately. 1) 1) Assessment teams is elements in Table 4.3 template v2.0). A chear review process undert 2) 2) Guidance could be performed the key elements of the identify the key ecosystem requirement. 3) 3) There is almost no performation that assess addition, PI 2.5.3 SIC bycatch and ETP spece ecosystem PIs. 4) 4) Productivity pattern ecosystem elements in a fishery to disrupt the irreversible harm. As key ecosystem element in a fishery to disrupt the irreversible harm. As key ecosystem in which the first of the provide a more rounded assessment. Fisheries 'key' or key ones were considered to meet the provide a more rounded necessarily the case at Theme 2: Remove the ecosystem PIs no apparent loss to the MSC in fishery performance.	should be remind of the assessment reports, should be remind of the assessment compliance that of compliance taken by MSC stransfer elements in the ecosystem of the ecosystem o	led of the requirent report (Table e with this requirent aff at the PCDR 2.5.3 SIa SG60 of the effect that and the scoring text are between the treatment of the required information of the properties of the effect that and the scoring text are between the treatment of the required information of the properties assesses to a point when the properties assesses to a point when the treatment that the properties are the solution of the properties and the properties are seen any significant this would also ecosystem in which includes a definition of the provide no additional that the provide not the provide no	ement to ide: 3 in the Full irement could consultation ("Information assessment te to in order to requirements moved without or able to pro- n Component es the approa- om, etc) shous sment, as the here there we identifies a point fishery a se ition of 'econ a requirement to way, but al encourage as which the fish the the ecosyst low 80, but the details a pro- to the ecosyst low 80, but the details a pro- to the ecosyst low 80, but the essment pro-	Assessment d be part of the stage. In is adequate ams need to meet the SC sof PI 2.5.3 but limiting the sent in order is no feasould be seried and to scoring boosts (i.e., target are is no feasould be seried aroductivity) do to identify d, with assessment to identify d, with assessment teasery operates tem PIs are a then only on the assessment teasers, and the	fisheries are scoring t Reporting the standard to to identify actually 660 SIb, SIc and the range of the to score. In t, retained, the	
		Scores <80 for 52 CRv1.3	Retained	Bycatch	ETP	Habitats	Ecosystem	
		fisheries Outcome	species 5	species 2	species 6	9	0	
		Management	7	2	3	5	0	
		Information	3	11	10	5	1	
		Illomation	J	11	10	3	1	

1) Remove the ecosystem PIs from the assessment tree.

Although, of course, there are no data presented here on whether some fisheries have failed assessments because of the ecosystem PIs being scored down, this outcome would seem unlikely, given that the ecosystem PIs are generally scored higher in the 52 fisheries considered here, and because assessment teams can use expert judgement in scoring the ecosystem PIs, rather than being dependent on the availability of data.

In the case that the ecosystem PIs were removed from a future assessment tree, an additional SI could be included in the outcome PIs of the target, primary, secondary and ETP species, scored at SG100 only, to account for their ecosystem roles. This could be mirrored by minor changes to the management SIs. For example:

- Example Outcome SI(SG100, only): "There is evidence that the UoA is highly unlikely to
 affect the ecosystem role of the secondary species to a point where there would be serious
 or irreversible harm."
- Example Management SI(SG100, only): "There is a strategy in place for the UoA for managing main and minor secondary species, including with respect to their role in the ecosystem."

There would be no need to add to or change the information PIs, as they already include a requirement at SG100 that "Information is adequate to support a strategy". However, a guidance note could be added to indicate that, at SG100, the strategy would need to account for the component's role in the ecosystem.

In the event that this approach was taken, there would also not be a particular need to include an ecosystem aspect to the existing habitat PIs, as the introduction through CR v.2.0 of the VME requirements already accounts for the ecosystem role of habitats to some extent.

6. Discussion and conclusion

In conclusion, Option 1B (additional training materials and/or calibration workshops) in combination with Option 2 (clarifying language and definitions) are the preferred options and taken forward in the project. This combination of preferred options was approved by the TAB Ecosystem WG in February 2021.