



# Introducing requirements on the type and quality of evidence needed for scoring fisheries

## Impact Assessment Report

November 2021

Tim Davies

Marine Stewardship Council



## Table of Contents

1. Impact assessment report - Overview .....	4
1.1. Impact Assessment Framework .....	4
1.2. Problem Statement .....	4
1.3. Objectives .....	5
2. Evidence Requirements Framework .....	5
2.1. Overview .....	5
2.2. Applicable scoring issues .....	6
2.3. Process flow of the ERF .....	6
2.4. Evolution of the ERF proposal .....	8
3. Summary of impacts .....	9
3.1. Impacts of the business-as-usual scenario .....	9
3.2. Impacts of the ERF approach .....	10
4. Impacts .....	10
4.1. Overview of impacts .....	10
5. Pilot testing .....	14
6. Consultations .....	14
7. Discussion and conclusion .....	15

*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.*

*This work is licensed under Creative Commons BY 4.0 to view a copy of this license, visit <https://creativecommons.org/licenses/by/4.0>*

How to reference this report: Davies, T. 2021. Introducing requirements on the type and quality of evidence needed for scoring fisheries Impact Assessment Report. Published by the Marine Stewardship Council [www.msc.org], 14 pages.

# 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:

- **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.
- **Acceptability:** The extent that the change is considered tolerable or allowable, such that the MSC program is perceived as credible and legitimate by stakeholders.
- **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.
- **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).
- **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.
- **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 Fisheries Standard requires that assessment teams determine the extent to which information is adequate to understand the true impacts of a fishery. This requires assessors to consider the type



and quality of information available from the fishery's monitoring programme, and to make a judgement on its adequacy in the context of the scoring issue.

Guidance to support assessors in this task is limited and fragmented throughout the Fisheries Standard. Where it does exist, it is lengthy but without providing clear direction to assessors. This lack of clear instruction has resulted in differences in assessors' judgement and the transparency of their scoring.

Inconsistency in the assessment of information creates inequality in the program, as fisheries may unintentionally be held to a higher or lower bar at the discretion of the assessors. This creates uncertainty in the quality and quantity of information that is needed to in order to perform well in the MSC Program, and weakens the MSC's theory of change to improve fisheries information.

## 1.3. Objectives

This project is seeking to develop a methodology for the appraisal of information that will strengthen the Fisheries Standard's information requirements. The specific objectives are to:

- Ensure that fishery assessments are based upon a high and consistent standard of information.
- Ensure that the determination of information adequacy is consistent and transparent.

## 2. Evidence Requirements Framework

### 2.1. Overview

The Evidence Requirements Framework (ERF) is a new methodology to determine the accuracy of information used in a fishery assessment. This includes information used to estimate a fishery's impact on P2 species and habitats, to determine compliance with management rules under P3, and to confirm the implementation of a fins naturally attached policy for the shark finning scoring issues (SIs).

The ERF provides a structured approach for the appraisal of information accuracy, which includes consideration of the trueness<sup>1</sup> of information and the precision<sup>2</sup> of catch estimates. It is explicit on how teams should reach and report their judgement, and describes the MSC's expectations for what type or quality of information is needed to meet the different scoring guidepost levels.

The ERF is designed to be equally relevant across all fishery contexts, and avoids a one-size-fits-all solution in terms of the type or amount of evidence required to achieve certification. This recognises that different monitoring approaches and technologies may achieve a similar result in terms of the quality of information collected. This flexibility also allows for future innovation in fisheries monitoring and analytical approaches.

---

<sup>1</sup> Trueness is usually expressed in terms of bias, which is a systematic deviation from the truth. The greater the effect of the bias, the lower the trueness of the observation.

<sup>2</sup> Precision refers to the variability between repeated measurements and corresponds to random error in statistical estimates. Greater variation between measurements indicates lower precision.

It is housed in the MSC Toolbox Annex.

## 2.2. Applicable scoring issues

The ERF is a mandatory tool that assessments team must use to score most information-related scoring issues in Principles 2 and 3. It is not used in Principle 1, where information requirements are already well developed. As it requires a certain level of monitoring data to be available, it is also not used for data deficient scoring elements that have been scored using the Risk-Based Framework.

The ERF consists of two components: an evaluation of information trueness and an assessment of catch estimate precision. The trueness component is applicable to all SIs, whereas the precision component is only used for SIs where a catch estimate relevant (see Table 1).

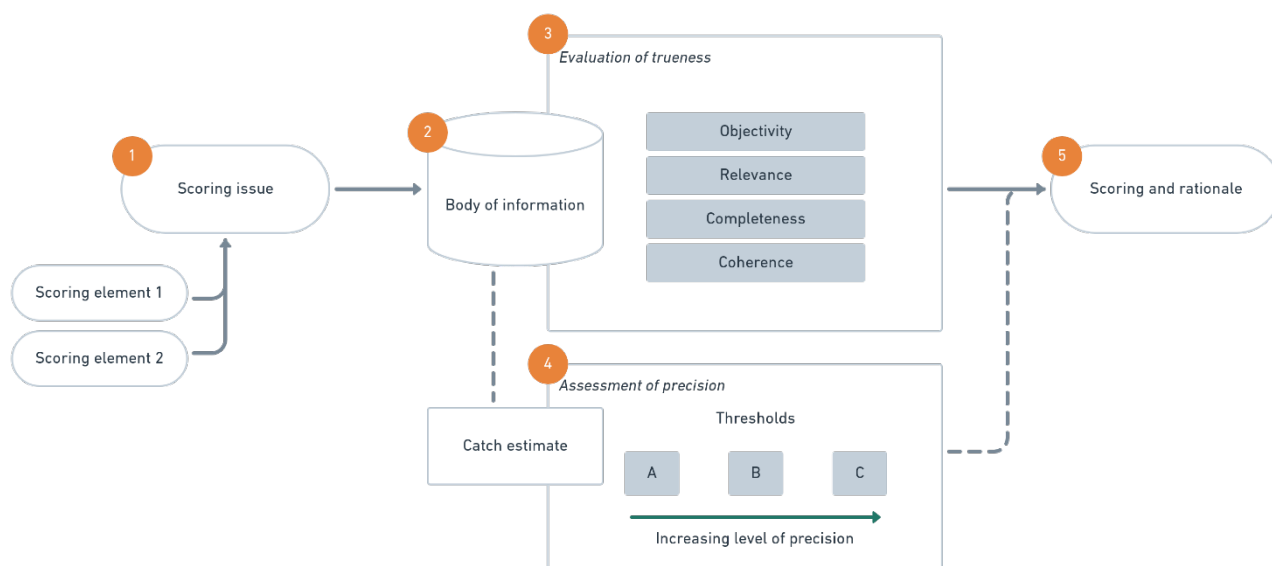
**Table 1 Scoring issues for which the ERF is used. This is an indicative list with exceptions for specific scoring elements not shown.**

Evaluation of trueness and precision	Evaluation of trueness only
PI 2.1.3 SI (a) Primary main species information	All shark finning SIs
PI 2.2.3 SI (a) ETP/OOS information	PI 2.1.3 SI (b) Primary minor species information
PI 2.3.3 SI (b) Habitats information	PI 2.3.2 (d) Compliance with management regulations for more sensitive habitats
	PI 3.2.3 SI (c) Compliance information

## 2.3. Process flow of the ERF

The use of the ERF is illustrated as a flow diagram in Figure 1, with five key parts in the process described below.





**Figure 1** Process flow of the ERF. Parts 1-5 are described below.

1. The ERF is used to score five information-related SIs across Principle 2 and Principle 3, and the four shark finning SIs. It is applied by assessors to generate the score and rationale that they will use for the scoring issue. If a P2 component includes multiple scoring elements (i.e. species), the framework is repeated for each scoring element separately.
2. For each scoring issue, teams will need to consider the relevant *body of information* made up from a variety of sources. For instance, when considering the fishery's impact on a species, relevant information may include fishery-dependent data on catches, research findings on post-capture mortality, and anecdotal information provided by stakeholders. The framework identifies the basic types of information that must be included in the body of information for each scoring issue.
3. Teams need to evaluate the *trueness of information* to reach a judgement on the extent to which it is likely to reflect the truth. Although the truth is not necessarily known, the team must establish where there is a possibility of bias and consider its likely impact on information trueness. The team must consider the objectivity, relevance, completeness and coherence of each piece of information individually in order to reach a conclusion regarding the trueness of the body of information as a whole.
4. The accuracy of some types of information, such as an estimate of catch, is also determined by its precision. Where a catch estimate is part of the body of information, teams must *assess its precision* relative to thresholds. Three thresholds (A-C) are offered that are designed to reflect an increasing level of precision, starting at a base level that corresponds to a catch monitoring programme and moving up to level where the level of monitoring in place is expected to ensure a very high level of precision. Thresholds are based on coverage of independent observation, or equivalent data sources, as a proxy for precision.
5. When teams have evaluated the trueness of information and, where relevant, the precision of the catch estimate, they must reach a conclusion on its adequacy. This is expressed in terms of the accuracy levels described in the scoring guideposts. The team should provide a clear account of their evaluation of information accuracy. Where there is uncertainty in the impact of the UoA on the scoring element, or its status is uncertain, the team must be precautionary in their scoring.

## 2.4. Evolution of the ERF proposal

The ERF has undergone continuous development since it was conceived in April 2020. The design has evolved in response to feedback from public consultation, input from MSC's governance bodies, expert workshops, consultancy and internal development. Table 2 provides a summary of its development journey.

**Table 2 Development stages of the ERF since April 2020.**

Date / stage	Description of the proposal
May 2020 Early concept	A high level design concept for an ERF was developed. This was presented to the STAC Principle 3 Working Group and at three <a href="#">public consultation workshops</a> . Feedback was gathered on the general concept and on stakeholders' expectations regarding information adequacy.
September 2020 Concept development	A number of alternative designs and configurations were presented as options, focusing on the sequence of the process and prescriptiveness of the requirements. A single configuration was selected that allowed for the most efficient process.
January 2021 Initial draft proposal	A draft proposal was developed from the preferred concept. This was accompanied by a worked example using the primary species scoring issue. In this proposal, the scoring outcome was primarily driven by the amount of information available. The framework initially used thresholds based on the amount and type of information available to determine the maximum theoretical score that could be achieved for the SI. These thresholds were set at a different level depending on the UoA's risk of causing negative impact on the stock status, whereby more information would be needed for UoAs considered to have a high risk of negative impact. The quality of the information was then evaluated to finalise the score, which could be awarded at or below the theoretical maximum. The framework underwent substantial development during this time, responding iteratively to feedback from the Stakeholder Advisory Council (STAC) Principle 3 Working Group. See 'version A' in <a href="#">this earlier impact assessment</a> for details of this proposal and its likely impacts.
March 2021 Revised draft proposal	A revised draft proposal was developed based on internal development and feedback received from STAC. In this proposal, the amount of information available was not used to set a maximum score. Instead, assessors need to consider both the quality and quantity of available information more equally when determining a score. The consideration of UoA risk was retained. The proposal introduced the option of describing precision thresholds based on statistical properties of the observed variable (i.e. coefficient of variation), rather than specifying the number of observations required. The overall process was also simplified.  This proposal was supported by STAC, TAB and the Board to continue to pilot testing, subject to an expert workshop to refine the assessment criteria and thresholds.



Date / stage	Description of the proposal
	See ‘version B’ in <a href="#">this earlier impact assessment</a> for details of this proposal and its likely impacts.
July 2021 Pilot testing round 1	<p>The proposal was drafted into formal requirements for pilot testing. The overall design was not changed from the proposal agreed in March 2021, although the finer details of the proposal were developed. This included criteria for the assessment of risk, criteria for evaluating trueness and statistical values for the precision thresholds. While the need for alternative methods to achieve the thresholds was recognised, these were not yet developed in this version of the proposal.</p> <p>Feedback from pilot testing shows that this version needed further development. The risk assessment was laborious and offered limited benefit, assessors found it difficult to apply the concept precision thresholds using statistical terms, and the process was not sufficiently detailed scoring rationales.</p>
September 2021 Pilot testing round 2	<p>A refined version was developed based on feedback from pilot testing and the STAC Principle 3 Working Group. The risk assessment step was removed to improve efficiency of the process, and alternative approaches for determining precision were included. Numerous edits and corrections were made to address issue of poor clarity and auditability, and more developed guidance was included.</p> <p>Feedback from pilot testing and auditability review mainly identified issues that needed further instruction or clarification. There were also continuing challenges in using coefficient of variation to demonstrate precision thresholds.</p>
October 2021 Final draft proposal	<p>This version is described in the previous section of this report.</p> <p>The use of coefficient of variation in precision thresholds has been changed from earlier proposals. Thresholds instead focus on coverage of independent observation, or equivalent data sources, as a proxy for precision. This change was made to promote implementation and accessibility of the assessment of precision. Additional edits have been made to address the issues of auditability and instruction.</p>

## 3. Summary of impacts

### 3.1. Impacts of the business-as-usual scenario

The business-as-usual scenario is problematic when a conformity assessment body’s (CAB) determination of adequacy is inconsistent with the MSC’s intent and stakeholders expectations for what is reasonable. While the status quo is simple in concept, the existing guidance is wordy and the fragmentation of instructions throughout the Standard is confusing and inefficient. The majority of stakeholders perceive this to be an issue and accept the need for improvement.

There are no major auditability concerns with the existing requirements, in part because most allow for broad interpretation of what CABs need to demonstrate.

## 3.2. Impacts of the ERF approach

The ERF offers a substantial improvement in how information is scored as part of a fishery assessment. The framework methodology ensures a more comprehensive evaluation of information quality than is currently done. This will reduce uncertainty in an assessment, especially around a fishery's impacts, and increase confidence in its conclusions.

The use of the ERF by assessment teams in a standardised and structured way facilitates a consistent and transparent assessment of information. This will be important in ensuring a level playing field across assessments in terms of what information is required, how it is evaluated and what level of accuracy is expected at the different scoring guidepost levels.

There is broad support from all stakeholder groups for the general concept of strengthening evidence requirements. The criteria and thresholds used in the ERF for the evaluation of information trueness and catch estimate precision are expert-driven and evidence-based, which supports its legitimacy.

The design of the ERF is efficient. While its introduction it will add additional process steps to the assessment of information, this must be considered a necessary trade off to ensure a high and consistent standard of information.

The focus on information accuracy (rather than type or quantity) will promote a high standard of information that is achievable in all fishery contexts and allows for innovation in fisheries monitoring. Precision thresholds that are based around practical characteristics of fisheries monitoring, rather than statistical terms, aids understanding of the ERF and should improve its acceptability.

Consultation with governance bodies and stakeholders throughout the development of the project has shown that the appraisal of information accuracy is a complicated and potentially divisive topic. Training and communication on the framework intent and methodology is therefore needed to ensure correct application by CABs and good understanding from fishery partners and stakeholders.

## 4. Impacts

### 4.1. Overview of impacts

The impact assessment presented in Table 3 below is based on feedback from two rounds of pilot testing, feedback from STAC and TAB, and expert judgement of the project and outreach leads, senior colleagues, feedback provided by outreach co-readers and responses to a public consultation workshop.



Table 3: Impact assessment reporting table.

	Description	Business as usual	Evidence Requirements Framework
Effectiveness	<i>Is the change effective at meeting the MSC's intent?</i>	The status quo is not effective when a CAB's determination of adequacy is inconsistent with MSC's intent of the information adequacy SIs and stakeholders expectations for what is reasonable	<p>The ERF will promote transparent and consistent scoring of information</p> <p>Requirements on the quality of information are more clearly articulated</p> <p>Assessment of information accuracy (rather than type or quantity) will promote a high standard of information that is achievable in all fishery contexts</p> <p>Training and communication on the framework intent and methodology needed to ensure correct application by CABs and good understanding from partners and stakeholders</p>
	<i>The option seems effective at resolving the issue(s) consistently and reliably</i>	<i>2 = Disagree</i>	<i>5 = Completely agree</i>
Acceptability	<i>Is the change acceptable to stakeholders?</i>	Majority of stakeholders perceive this to be an issue and accept the need for improvement	<p>Broad support from all stakeholder groups for the general concept of strengthening evidence requirements</p> <p>Focus of the precision thresholds on practical characteristics of fisheries monitoring, and avoidance of statistical terminology, is expected to aid understanding of the ERF and conditions that may result from its use, which should improve its acceptability</p> <p>Some dissatisfaction that the framework does not offer comprehensive solution to identifying unknown interactions between fishery and species</p>
	<i>The option seems acceptable to stakeholders</i>	<i>2 = Disagree</i>	<i>4 = Agree</i>

	Description	Business as usual	Evidence Requirements Framework
Feasibility	<i>Is the change feasible to fishery partners?</i>	The status quo is feasible	<p>Evidence requirements will raise the bar for some fisheries; necessary improvements may have associated costs but should be technically feasible for all fishery types in all regions</p> <p>Avoidance of requirements on specific monitoring approaches or technologies allows ERF to be feasible for all fishery contexts and allows for innovation in fisheries monitoring</p> <p>Fishery partners may need to rely to a greater extent on management and advisory bodies to provide information, although the possible impact of this is not fully clear</p> <p>Training and communication on the framework intent and methodology needed to ensure correct application by CABs and good understanding from partners and stakeholders</p>
	<i>The option seems technically feasible for fishery partners</i>	<i>5 = Completely agree</i>	<i>4 = Agree</i>
	<i>The option seems affordable for fishery partners</i>	<i>5 = Completely agree</i>	<i>4 = Agree</i>
	<i>The option seems possible given the management contexts of fishery partners</i>	<i>4 = Agree</i>	<i>5 = Completely agree</i>
	<i>The option seems doable within 5 years for fishery partners</i>	<i>4 = Agree</i>	<i>4 = Agree</i>



	Description	Business as usual	Evidence Requirements Framework
Accessibility and retention	<i>Does the change affect the accessibility and retention of fisheries in the MSC Program?</i>	The status quo may arguably have a positive impact on accessibility and retention as CABs have a lot of latitude in how they can determine adequacy.	Avoidance of requirements on specific monitoring approaches or technologies allows ERF to be accessible for all fishery types in all regions  Allowance for use of alternative ways to demonstrate precision thresholds promotes accessibility and retention (including achievement of conditions)  Training on application of framework in full range of fishery scenarios, including data poor and small-scale, to ensure correct application by CABs in these situations
	<i>The option seems accessible to fisheries seeking certification in the future</i>	<i>5 = Completely agree</i>	<i>4 = Agree</i>
	<i>The option seems accessible to currently certified fisheries</i>	<i>5 = Completely agree</i>	<i>4 = Agree</i>
Simplification	<i>Does the change simplify the Standard?</i>	The status quo is simple in concept, although existing guidance is wordy and the fragmentation of instructions throughout the Standard is confusing and inefficient.	Process for assessing information adequacy is more clearly structured and easier to navigate than the status quo  The framework will add additional process steps to the assessment of information; this is a necessary trade off to ensure a high and consistent standard of information
	<i>The option seems to simplify the Standard</i>	<i>2 = Disagree</i>	<i>4 = Agree</i>
Auditability	<i>Is the change auditable by CABs?</i>	Requirements with respect to determining adequacy in P1 are generally clear  Some requirements in P2 and P3 are clear, but most allow for broad interpretation of what CABs need to do or demonstrate	Framework will promote transparent and consistent scoring, and tighter definitions and guidance will improve auditability  Training on the framework methodology needed to ensure correct application by CABs in all fishery situations

Description	Business as usual	Evidence Requirements Framework
<i>The option seems to be auditable by CABs</i>	<i>2 = Disagree</i>	<i>5 = Completely agree</i>

## 5. Pilot testing

The ERF went for initial pilot testing in July 2021. The main findings of the first round of testing were:

- The risk assessment process is laborious and repetitive, and the outcome has only limited contribution to the rest of the process or the level of evidence required. There are numerous practical challenges with auditability of the risk assessments.
- Some assessors found it difficult to apply the concept precision thresholds based on coefficient of variation. As such they have found it difficult to pilot test this part of the framework.
- Parts of the process were treated as a check-box exercise, with no context and explanation provided. For example, assessors would simply indicate the outcome of a decision rule (yes/no) rather than provide a rationale.

The ERF was further developed following the initial pilot testing and feedback from the STAC Principle 3 Working Group, and was pilot tested again in September 2021. It also went an auditability review simultaneously.

Feedback from the second round of pilot testing and the auditability review mainly identified issues that needed further instruction or clarification. There were also continuing challenges in using coefficient of variation to demonstrate precision thresholds, summarised as:

- Calculation of a CV must be done by management agencies or science providers, rather than by assessments team due to concern of potential conflict of interest. This is likely to increase the burden on management agencies as part of the assessment of a fishery.
- Alternatives approaches for assessing precision thresholds that are based around demonstrating equivalence with CV are not sufficiently developed. This risks inconsistent application and may impact accessibility for data deficient fisheries.
- A reasonable understanding of statistical terms and methodologies is necessary to understand the assessment of precision thresholds. This level of knowledge may not be widely present in assessment teams and stakeholders. This risks misapplication of the ERF by assessors, and low levels of acceptance of the process by fishery partners and stakeholders.

## 6. Consultations

During May-July 2020, a high level design concept for an ERF was presented to the STAC Principle 3 Working Group and at three public consultation workshops. Feedback was gathered on the general concept and on stakeholders' expectations regarding information adequacy. The WG showed support for strengthening the evidence requirements, and provided some feedback on how to communicate the projects aims and technical details more clearly.

In September 2020, the framework received internal review through the co-reading process. A number of alternative designs and configurations were presented as options, focusing on the sequence of the process and prescriptiveness of the requirements.

In January-February 2021, the framework methodology was presented to the STAC Principle 3 WG using a worked example based on the primary species scoring issue. The framework underwent substantial development during this time, responding iteratively to feedback from the WG. In September 2021, the WG also provided feedback on the revisions to the framework following the initial round of pilot testing.

A group of outreach colleagues has provided coordinated feedback on the developing proposals at several stages in late 2020 and 2021. There has been no public consultation in 2021.

## 7. Discussion and conclusion

There is broad support from all stakeholder groups for the general concept of strengthening evidence requirements. The ERF has several major advantages over the business-as-usual approach and is therefore the preferred pathway forward.

The ERF ensures a more comprehensive evaluation of information quality than is currently done, and facilitates a consistent and transparent assessment of information. This will reduce uncertainty in an assessment, especially around a fishery's impacts, and increase confidence in its conclusions. While its introduction it will add additional process steps to the assessment of information, this must be considered a necessary trade off to ensure a high and consistent standard of information.

The focus on information accuracy, rather than type or quantity, will promote a high standard of information that is achievable in all fishery contexts and allows for innovation in fisheries monitoring. Allowance for use of alternative ways to demonstrate that the required levels of information quality are achieved promotes accessibility and retention.

It will be important to provide comprehensive training to CABs and stakeholders on application of framework. This is needed to ensure correct application of the ERF across a full range of fishery scenarios.