

Marine Stewardship Council (MSC) Pre-assessment Report

Sri Lanka Blue Swimming Crab Fishery

On behalf of

Taprobane Seafoods

Prepared by

Control Union (UK) Limited.

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QA

Role	Signature and date
Originator:	JG and PW 03/05/2020
Reviewer:	BOK 04/05/2020
Approver:	TT 05/05/2020

Glossary

Acronym	Definition
BSC	Blue Swimming Crab
CAB	Conformity Assessment Body
DFMP	District Fishery Management Plan
DFAR	Department of Fisheries and Aquatic Resources
DFO	District Fisheries Offices
FIP	Fishery Improvement Project
GO	Governmental Organisation
HCR	Harvest Control Rules
IUU	Illegal, Unregulated, Unreported
NGO	Non-governmental Organisation
SEASL	Sri Lankan Seafood Exporters' Association's
SP	Spawning potential
TRP	Target Reference Point
UoA	Unit(s) of Assessment
VMEs	Vulnerable Marine Ecosystems

1 Executive Summary

This report is an updated MSC pre-assessment of the fisheries of Sri Lanka Blue Swimming Crab (BSC). The previous and comprehensive pre-assessment was produced by MacAlister Elliott Certification (MEC; now renamed Control Union UK) in 2018, available in Gascoigne et al. (2018).

The fishery targets *Portunus pelagicus* in two fishing grounds located in Palk Bay and the Gulf of Mannar within 10km of the Sri Lankan coast. The crabs are harvested using bottom-set nets. The Sri Lankan blue swimming crab fishery improvement project (FIP) was established in 2013. Taprobane Sea Food (Pvt) Ltd is the Sri Lankan Seafood Exporters' Association's (SEASL) principal contributor to the FIP. SEASL promotes the interest of companies to export seafood products from Sri Lanka, provides a platform to discuss challenges and concerns within the industry, acts as a focal point between foreign buyers and fisheries, and lobbies and advises government policy related to seafood exports. Their goal is to ensure the long-term economic social and environmental sustainability of the seafood sector in Sri Lanka.

The decision to initiate a FIP was a response to US market demands for sustainable seafood, as well as the demands of the fishing communities and stakeholders (GOs & NGOs). A first evaluation of the fishery was undertaken by Dr Steve Creech in November 2013 and revised in May 2014, on behalf of Taprobane Sea Food (Pvt) Ltd. Gascoigne et al. (2018) identified several main issues, which related to the stock assessment, the monitoring strategy, and management of the fishery (specifically compliance and enforcement). The FIP has done excellent work to address issues around bycatch and habitat impacts and further improvements have occurred since Gascoigne et al. (2018), which are reflected in this updated pre-assessment.

The update uses the new MSC pre-assessment template scoring tables, which can also be transferred directly to the first stage of a full assessment (in terms of structure; in content only if they are up-to-date). A brief update was requested, so only the PIs which previously failed (score <60) or could not be scored are considered here, with the exception of PI 1.1.1 (stock status) where scoring was also briefly verified based on the most recent stock assessment. For the other PIs, and background to the fishery and UoAs please refer to the original pre-assessment document.

The PIs that previously scored as a fail, and the reasons for this scoring, were as follows:

- PI 1.2.1 (harvest strategy): Harvest strategy in the form of a proposal so not yet 'in place'
- PI 1.2.2 (harvest control rules and tools): Component of harvest strategy, not yet formally agreed and implemented.
- PI 2.2.2 (secondary species management): Needs process for evaluating means of reducing unwanted catch periodically.
- PI 2.4.1 (habitat impacts): Not yet enough data.
- PI 2.4.2 (habitat management): Lacking data under 2.4.1 this PI could not be scored; management needs follow the likely impacts.
- PI 2.4.3 (habitats information): Not yet enough data.
- PI 3.2.3 (compliance and enforcement): Concerns around compliance with Fisheries and Aquatic Resources Act (use of monofilament nets) and Illegal, Unregulated, Unreported (IUU) fishing from Tamil Nadu.

The assessment team for this updated pre-assessment consisted of Dr Jo Gascoigne (P1 and P2), Peter Watt (P3).

2 Report Details

2.1 Aims and constraints of the pre-assessment

This reduced pre-assessment does not attempt to duplicate a full assessment against the MSC Fisheries Standard. A full assessment involves a group of assessment team members and public consultation stages that are not included in a pre-assessment. A pre-assessment provides a provisional assessment based on a limited set of information provided by the client. The full pre-assessment for this fishery was completed in 2018. Please note that as this was an updated pre-assessment, with no site visit, not all principles were re-assessed as part of the process.

2.2 Version details

This report confirms that the fishery under assessment is within the scope of the MSC programme as per below:

Table 1. Fisheries programme documents versions

Document	Version number
MSC Fisheries Certification Process	Version 2.1
MSC Fisheries Standard	Version 2.01
MSC General Certification Requirements	Version 2.4.1
MSC Reporting Template	Version 1.0

2.3 Full Assessment Process

The full MSC assessment is a multiple-step process to determine whether a fishery meets the MSC standard. CU UK and its expert assessment team would lead the process. It involves consulting with stakeholders, scoring the fishery against a set of performance indicators and scoring guideposts, identifying ways that the fishery can strengthen its performance (if needed), peer review and making a final determination about whether the fishery meets the MSC standard. This is an intensive process that calls for a high level of information to be provided by the fishery and others and also calls for a significant level of involvement by the fishery client.

Please note as of 1st March 2019 the MSC Fisheries Certification Process (FCP 2.1) came into force, this is significantly different the previous MSC process. The following steps form the MSC full assessment process (as per Version 2.1 of the Fisheries Certification Process):

Confirmation of scope (determining the fishery is eligible for MSC assessment and confirming the units of assessment (UoA) and units of certification (UoC) to be put forward for assessment).

- Agreement of contract
- A client signed copy of 'Certificate Holder Forced and Child Labour Policies, Practices and Measures'.
- Return of the Client Document Checklist, as completed by the client
- Assessment team write and present to client the Announcement Comment Draft Report (ACDR).
- Client decides whether to proceed with MSC full assessment

- Announcement of Fishery Assessment. Here the fishery is announced as going forward for assessment. At the same time the CAB is required to:
 - Publish the Announcement Comment Draft Report (ACDR)
 - Provide the names and CVs of the assessment team
 - Announce the use of the default assessment tree (if to be used) and application of Risk-Based Framework (RBF), where necessary and identify inseparable or practicably inseparable catches (IPI).
 - Inform stakeholders
 - Indicative timeline of the assessment
 - Announce the date and location of the proposed site visit(s)
 - Submit to the MSC, the MSC Notification Report Form (outlining the fishery details)
 - Submit to the MSC the returned Client Document Checklist
 - Allow for a period of at least sixty (60) days before the site visit for stakeholder responses.
 - Notify the MSC Peer Review college.
 - Send Pre-assessment Report to MSC
- Site visit, to include stakeholder meetings and data confirmation.
- Scoring of the performance indicators and drafting of the Client and Peer Review Draft Report
- Selection and approval of peer reviewers from the MSC Peer Review College
- Peer Review Draft Report sent to Peer Reviewers and Client Draft Report sent to client
- Review of Client Draft Report and Peer Review Draft Report (maximum 60 calendar days) including:
 - Preparation of Client Action Plan by client, if required
- Incorporation of Peer review comments, as required, and subsequent production of Public Comment Draft Report
- Publication of Public Comment Draft Report on MSC website and its review by stakeholders and MSC (30 calendar days)
- Response to stakeholder comments; revision of report as required
- Peer Reviewers notified for additional review
- Certification determination and publication of the Final Report
- Stakeholders given opportunity to object to the certification determination (15 working days)
- Objection procedure and consultation with stakeholders, if necessary
- Certification and publication of Public Certification Report – assuming a successful certification outcome

A certificate lasts for 5 years from date of issuance, during which time it is subject to annual surveillance audits to ensure continuing compliance with all MSC Certification Requirements and to evaluate progress against any conditions of certification. These annual surveillance audits will vary between the requirement for a full on-site audit, off-site audit or review of information, dependent on the risk as assessed during the previous audit by the CAB.

When the certificate is due to expire, a reassessment against the MSC Certification Requirements is required to ensure on-going certification beyond the original certificate expiry date. This reassessment may constitute a full reassessment (same process as followed for initial certification) or a reduced reassessment. The reduced reassessment allows for fisheries which meet set criteria to have a 'reduced' audit with only one team member required to go on-site during the process and only one peer reviewer required to review the reassessment peer review report.

Prior to applying for full assessment for any of the UoAs within this assessment, the client should:

- Inform CU UK of any actions undertaken following this pre-assessment to address the conclusion of this report.
- Report on any new issues that may be a barrier to certification.
- Report on any communications that may need to take place with management agencies, environment groups, post-harvest sectors, relevant commercial and non-commercial fishing groups to explain the MSC assessment process and the implications (including costs and benefits) of certification.
- Ensure the completion of the Client Document Checklist, identifying the type and extent of data and information available for a full assessment.
- Be willing to sign a copy of 'Certificate Holder Forced and Child Labour Policies, Practices and Measures'.
- Indicate whether the client would like to receive the optional MSC training material on the fishery assessment process for clients.

3 Unit(s) of Assessment and Certification

3.1 Unit(s) of Assessment (UoA)

CU UK confirms that the fishery under assessment is within the scope of the MSC Fisheries Standard (7.4 of the MSC Fisheries Certification Process v2.1):

- The target species is not an amphibian, reptile, bird or mammal;
- The fishery does not use poisons or explosives;
- The fishery is not conducted under a controversial unilateral exemption to an international agreement;
- The client or client group does not include an entity that has been successfully prosecuted for a forced or child labour violation in the last 2 years;
- The fishery has in place a mechanism for resolving disputes, and disputes do not overwhelm the fishery;

The proposed Unit of Assessment (UoA) is given in Table 2 and Table 3.

Table 2. Unit(s) of Assessment (UoA)

Species	Blue swimming crab (<i>Portunus pelagicus</i>)
Stock	Palk Bay (northern coast of Sri Lanka)
Geographical range of fishery	The <i>Portunus pelagicus</i> species is distributed through the Indian and West Pacific oceans.
Harvest method / gear	Bottom-set nets
Client group	Taprobane Sea Foods (Pvt) Ltd
Other eligible fishers	None
Justification for choosing the Unit of Assessment	As described in previous pre-assessment

Table 3. Unit(s) of Assessment (UoA)

Species	Blue swimming crab (<i>Portunus pelagicus</i>)
Stock	Gulf of Mannar (north western coast of Sri Lanka)
Geographical range of fishery	The <i>Portunus pelagicus</i> species is distributed through the Indian and West Pacific oceans.
Harvest method / gear	Bottom-set nets
Client group	Taprobane Sea Foods (Pvt) Ltd
Other eligible fishers	None

Justification for choosing the Unit of Assessment	As described in previous pre-assessment
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4 Traceability and eligibility

4.1 Traceability within the fishery

Information on Traceability can be found in Gascoigne et al. 2018.

5 Pre-assessment results overview

5.1 Overview

This updated assessment only considers the performance indicators as required to be updated for this pre-assessment update.

Table 4 Overview of considerations found for each updated Performance Indicator

Performance Indicator	Consideration
1.2.1 (harvest strategy)	Harvest strategy in the form of a proposal so not yet 'in place'
1.2.2 (harvest control rules and tools)	Component of harvest strategy, not yet formally agreed and implemented.
2.2.2 (secondary species management)	Needs process for evaluating means of reducing unwanted catch periodically
2.4.1 (habitat impacts)	Insufficient data
2.4.2 (habitat management)	Lacking data under 2.4.1 this PI could not be scored; management needs follow the likely impacts.
2.4.3 (habitats information)	Insufficient data
3.2.3 (compliance and enforcement)	Concerns around compliance with Fisheries and Aquatic Resources Act (use of monofilament nets) and IUU fishing from Tamil Nadu

6 Fishery Overview

A full fishery overview is available in Gascoigne et al., 2018.

6.1.1 Principle 1 Performance Indicator scores and rationales

This PI previously scored 80 or above, on the basis that the stock assessments showed that both stocks were above the target of 30% spawner potential. The most recent assessments continue to suggest that this is the case (Palk Bay: 42%, Gulf of Mannar: 57%) (Blue Swimming Crab Bulletin 11 - SLBSC FIP 2019a; Pelagikos 2019a,b), so there is no change to scoring.

Scoring table 1. PI 1.2.1 – Harvest strategy

This PI previously scored <60, on the basis that the harvest strategy was in the form of a proposal, and had not been formally agreed by stakeholders and the administration, nor was it implemented.

According to the information provided, the current situation appears to be that the management plans have been approved by fishery stakeholders, and signed off in each case by the regional government – specifically the Assistant Director of the Department of Fisheries and Aquatic Resources (DFAR) from the district offices in Jaffna (Palk Bay) and Mannar. A copy of the plan for each UoA was formally provided to the Director General of DFAR in Colombo in June 2018.

It is not completely clear to CU UK whether the agreement of the district DFAR constitutes formal implementation of the harvest strategy, or whether further steps are still required. For MSC, it is not strictly necessary (although desirable) that the harvest strategy be in the form of a formal management plan, as long as all parties involved in the management of the fishery have agreed to take decisions in accordance with the strategy. For the purpose of this pre-assessment, we are assuming that either i) the management plans are formally approved and implemented at the relevant level of government; or ii) that even if there are further steps for formal approval of the management plans, they are being implemented in practice on the ground. The harvest strategy PI is re-scored below, on this basis:

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
a	Harvest strategy design			
	Guide post	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is designed to achieve stock management objectives reflected in PI 1.1.1 SG80.
	Met?	Yes	Yes	?

Rationale

The harvest strategy, in the form of a management plan for each UoA, includes agreed reference points, a stock assessment in relation to the reference points, set of tools to control fishing effort and a set of rules as to how to adjust effort on the basis of stock status. There has been a process of discussion, review and agreement with key

stakeholders in the fishery, including fishers. On this basis, the strategy is responsive to the state of the stock, with the various elements (stock assessment, reference points, regulations) working together. At least 80 is met. Lacking certainty about the precise status of the management plans, SG100 is not scored.

b	Harvest strategy evaluation			
	Guide post	The harvest strategy is likely to work based on prior experience or plausible argument.	The harvest strategy may not have been fully tested but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been fully evaluated and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	Yes	Yes	No

Rationale

According to the stock assessments, the harvest strategy appears to be working in both UoAs. The stock status has remained above the Target Reference Point (TRP), so no difficult decisions have had to be taken. The fishery is in a process of ongoing improvement (work to reduce the proportion of juveniles in the catch and to reduce IUU), giving no reason to suppose that the stock status will decline at current levels of effort. On this basis, SG80 is met. However, the harvest strategy has not been fully tested, therefore, SG100 is not met.

c	Harvest strategy monitoring			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	Yes		

Rationale

There is an annual stock assessment, by district and overall for each UoA. Monitoring has been discussed in more detail in Gascoigne et al. (2018), detailing the catch monitoring programme on size-frequency data collection on the catch.

d	Harvest strategy review			
	Guide	The harvest strategy is periodically reviewed and improved as necessary.		

	post		
	Met?		No

Rationale

Since the harvest strategy has only just been implemented, it is too soon to determine if the SI has been met.

e	Shark finning			
	Guide post	It is likely that shark finning is not taking place.	It is highly likely that shark finning is not taking place.	There is a high degree of certainty that shark finning is not taking place.
	Met?	NA	NA	NA

Rationale

Not applicable, the target species is not a shark.

f	Review of alternative measures			
	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	Yes	?	?

Rationale

There is undesirable catch of the target species in the form of small, immature crabs (% immature in crabs purchased for export increased in 2018 to 8% from Palk Bay and 16% from the Gulf of Mannar (presentation Dr S. Creech to 3rd District Management Meeting for each area, March 2018; summary of stock assessment results; Pelagikos 2019a,b). This may not be unwanted from the fishers' perspective (as some buyers will accept that at a good price) but is unwanted from the management point of view. It

is not clear that this constitutes ‘unwanted catch’ under the MSC definition, since it is defined in terms of catch that is not used – however for the purpose of this pre-assessment, to be precautionary, we include it here.

Concern about this issue has been raised by stakeholders at various fishery management meetings. There has been discussion of options for reducing the catch of juveniles, and it has been proposed that a regulation is put in place setting a minimum size for buyers of 100 mm Carapace Length (CL). This constitutes a review of alternative measures to reduce this catch, so SG60 is met. It is unclear i) whether this regulation has been implemented as yet, and ii) to what extent this discussion can be characterised as ‘regular’, so the score for SG80 is unclear.

References

Fishery Management Plans, Palk Bay and Gulf of Mannar; Pelagikos 2019a,b

Draft scoring range

60-79; precautionary scoring – with potentially higher scores for certain SIs

Scoring table 2. PI 1.2.2 – Harvest control rules and tools

The management plan includes tools that can be used to control fishing effort; i.e. maximum number of net pieces per fisherman per day, maximum number of fishing days per week and number of operating licences, with a closure of the fishery for a period of some months and/or prohibiting export as a final resort. The management plan also sets out rules which determine how these input controls should be adjusted, according to the status of the stock in relation to the various reference points. The question still remains about the extent to which these rules can be applied in practice, given the socio-economic problems that might arise, and the fact that the stock status has never declined below relevant reference points; however the fact that the management plan appears to have been developed in a participatory way provides some evidence that it is practicable in practice.

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
a	HCRs design and application			
	Guide post	Generally understood HCRs are in place or available that are expected to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	Well defined HCRs are in place that ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock fluctuating at or above a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, most of the time.
	Met?	Yes	Yes	No

Rationale

The rules about actions to be taken in response to stock status in relation to a range of reference points are clearly defined by district within the management plans. They should reduce exploitation rate as the PRI (limit reference point) is approached; e.g. Rule 7 requires reductions in fishing effort should the spawning potential (SP) fall below the lower target (30%), before it gets to the limit (20%). So far, the assessments estimate that the fishery has fluctuated around or above the target level, suggesting that current levels of effort are appropriate. SG80 is met.

b	HCRs robustness to uncertainty			
	Guide post		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a wide range of uncertainties including the ecological role of the

	Met?

Rationale

	stock, and there is evidence that the HCRs are robust to the main uncertainties.
No	No

The main uncertainty is the extent to which, if the stock assessment estimated that SP had fallen, the rules in the management plan could be implemented on the ground in all districts. Although the participatory process for development of the management plan provides some support, it is not completely clear (to CU UK) that management is robust to uncertainties around implementation. Therefore, SG80 is possibly not met.

c	HCRs evaluation			
	Guide post	There is some evidence that tools used or available to implement HCRs are appropriate and effective in controlling exploitation.	Available evidence indicates that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	Evidence clearly shows that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	Yes	Yes	No

Rationale

There are two lines of evidence that the tools used to implement the HCR (adjustment to net pieces, fishing days and licences) are appropriate: i) the current level of effort in the fishery appears to be appropriate, according to stock assessments and ii) the management plan, including the rules and tools, was agreed by working with fishermen and other stakeholders. SG80 is met.

References

Fishery Management Plans, Palk Bay and Gulf of Mannar; Pelagikos 2019a,b

Draft scoring range

60-79

6.2 Principle 2

6.2.1 Designation of species under Principle 2

The PIs considered for the updated pre-assessment are listed below:

- PI 2.2.2 (secondary species management);
- PI 2.4.1 (habitat impacts);
- PI 2.4.2 (habitat management);
- PI 2.4.3 (habitats information).

All other PIs are considered in Gascoigne et al. (2018).

6.2.2 Habitats

The habitat under consideration in this assessment is coral and limestone reefs, seagrass and mangroves. The information below considers how FCR v2.01 defines and assesses these PIs. The MSC FCR v2.01 requires habitats interacting with the fishery to be defined as ‘commonly-encountered’, ‘VME’ or ‘minor’, with definitions as given in Table 5.

Table 5. Habitat definitions as per the MSC Fisheries Certification Requirements v2.01.

FCR reference	Definition
SA3.13.3.1	A commonly encountered habitat shall be defined as a habitat that regularly comes into contact with a gear used by the UoA, considering the spatial (geographical) overlap of fishing effort with the habitat’s range within the management area(s) covered by the governance body(s) relevant to the UoA.
SA3.13.3.2	A Vulnerable Marine Ecosystem (VME) shall be defined as is done in paragraph 42 subparagraphs (i)-(v) of the FAO Guidelines (definition provided in GSA3.13.3.2). This definition shall be applied both inside and outside EEZs and irrespective of depth.
GSA3.13.3.2	VMEs have one or more of the following characteristic, as defined in paragraph 42 of the FAO Guidelines: Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems Functional significance of the habitat – discrete areas or habitats that are necessary for survival, function, spawning/ reproduction, or recovery of fish stocks; for particular life-history stages (e.g., nursery grounds, rearing areas); or for ETP species Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities Life-history traits of component species that make recovery difficult – ecosystems that are characterised by populations or assemblages of species that are slow growing, are slow maturing, have low or unpredictable recruitment, and/or are long lived Structural complexity – an ecosystem that is characterised by complex physical structures created by significant concentrations of biotic and abiotic features
N/a	Minor habitats are those that do not meet the above definitions.

6.2.2.1 VME (optional)

There are several important considerations regarding the MSC's VME habitat requirement that were clarified through the MSC Interpretations website (<https://mscportal.force.com/interpret/s/global-search/VME>):

- It is not the responsibility of an assessment team to identify habitats as VME within the fished area. Instead, VMEs need to be identified by a local, regional, national, or international management authority/governance body.
- The history of fishing and when the VME was identified is critical to establishing what the 'unimpacted level' is; if a VME was already impacted by any fishery/UoA prior to its identification as a VME, and fishing impacts occurred prior to 2006, then the 'unimpacted level' is considered to be the status at the point of designation¹.

6.2.3 **Scoring elements**

A full list of scoring elements is available in Gascoigne et al. (2018).

¹ Note: The year 2006 was chosen because it is the date of the UNGA Resolution 61/105

6.2.4 Principle 2 Performance Indicator scores and rationales

Scoring table 3. PI 2.2.2 – Secondary species management strategy

This PI was previously scored at <60 because of S1e – the requirement for periodic review of means of reducing unwanted catch of secondary species. (The rest of the PI, as well as PI 2.2.1, was scored based on PSAs provided by the FIP; these PSAs and the list of secondary species have not been reviewed here) but are available in Gascoigne et al. (2018). Only S1e is therefore re-evaluated here.

PI 2.2.2	There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue	SG 60	SG 80	SG 100

e	Review of alternative measures to minimise mortality of unwanted catch			
	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species.	There is a regular review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main secondary species and they are implemented as appropriate.	There is a biennial review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all secondary species, and they are implemented, as appropriate.
	Met?	Yes	Yes	No

Rationale

Secondary species are landed if they are edible or have some value (e.g. rays) and otherwise discarded (e.g. echinoderms). Those species which are landed are not 'unwanted catch' under MSC's definition, so this SI is concerned with catch that is discarded.

There is ongoing research to quantify bycatch by species, including discards. Research suggests that on average across 777 landings to 8 landing sites ~17% of the catch is discarded, across a wide range of species. No species made up >5% of these landings, and only two species made up >2% - the chocolate chip seastar and the pale-edged stingray. The stingray might be considered 'main' at this level of catch on the basis of vulnerability; however it is sometimes landed and reported to contribute to fishermen's income, so cannot be described as unwanted catch in all cases.

The management plans include a bycatch management strategy (para. 33) which involves restrictions on the shape and fabric of nets, and measures to avoid bycatch of juvenile stingrays. Paragraph 36 of the management plans requires ongoing improvement, including continuing to improve the information on bycatch. SG80 is met.

References

Fishery Management Plans, Palk Bay and Gulf of Mannar; Blue Crab Bulletins 10 and 11; SLBSC FIP 2019a,b

Draft scoring range

≥80

Scoring table 4. PI 2.4.1 – Habitats outcome

This PI was previously scored at <60 because the research into habitat interactions and impacts had only started in one area, and was not yet sufficiently advanced. The relevant habitats are VMEs (termed ‘critical habitats’ by the FIP) – i.e. coral and limestone reefs, seagrass and mangroves. Other habitats (MSC: ‘commonly-encountered habitats’) such as sand and mud are not significantly impacted by static gear. Slb on VMEs is therefore re-evaluated below.

(In fact, it is not clear that seagrass meets the MSC definition of a VME (based on FAO Guidelines) for these UoAs, where it is a common and widespread habitat; it does potentially meet the definition based on its ‘functional significance’; e.g. as a nursery area; but the author is not well enough informed about this particular ecosystem to decide. It is scored here as a VME since this results in the most precautionary scoring).

PI 2.4.1	The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates			
Scoring Issue	SG 60	SG 80	SG 100	
b	VME habitat status			
Guide post	The UoA is unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is evidence that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	
Met?	Yes	Yes	No	

Rationale

VMEs have been mapped using publicly-available data and community mapping exercises. The footprint of the fishery has been mapped using community mapping, plus in addition a smartphone GPS tracking app, which has been provided to eight communities in Palk Bay and seven in the Gulf of Mannar, distributed across the entire coast. The footprint mapping suggests that the fishery does not overlap significantly with any of the protected areas (Bar Reef Marine Sanctuary, Adam’s Bridge National Park, Wilpattu National Park), where extractive activities are banned or restricted.

These two sets of GIS mapping were overlain to identify the overlap of the fishery footprint with VMEs as follows (range reflects differences between GPS and community mapping data):

- mangroves: Palk Bay – up to 0.02% (1.23 ha); Gulf of Mannar – up to 0.7% (13.6 ha)

- seagrass: Palk Bay – 9.6-12.7% (7600-10,000 ha); Gulf of Mannar – 13.7-16.7% (9,400-11,400 ha)
- coral reefs: Palk Bay – 0.6-0.9% (44-69 ha); Gulf of Mannar – 5.6-7.3% (190-480 ha)
- limestone reefs: Palk Bay – 0; Gulf of Mannar – 0.07-3.0% (4-180 ha)

Since seagrass has the most significant overlap in terms of area and proportion, the scoring is done below in relation to seagrass – other VMEs should score the same or higher.

MSC defines ‘serious or irreversible harm’ in the context of VMEs as the loss of 20% or more of the habitat. ‘Unlikely’ at SG60 requires a probability of 60% (of not causing this harm), and highly unlikely at SG80 a probability of 70%. In practice the level of overlap to give a default score of 60 would be somewhat less than 20%.

The % overlap of the fishery footprint with seagrass in both areas is somewhat less than 20%, giving a default score of 60 (i.e. 60 could be scored even knowing nothing about the impact of the gear on seagrass). There is no direct information (as far as we know) about the impact of the gear on seagrass. On one hand, the nets must be in contact with the bottom given the range of bycatch; on the other, the nets are relatively light and seagrass can infill small gaps quite fast from runners under the sand. Making a relatively precautionary assumption of 75% loss of seagrass cover in fishing areas, this gives a maximum estimate of damage to seagrass of ~12.5% (high estimate from GPS data, Gulf of Mannar), which should be sufficient for SG80 to be met.

References

Bandara 2018a,b

Draft scoring range

≥80

Scoring table 5. PI 2.4.2 – Habitats management strategy

This PI was not scored in the previous assessment because, lacking data on overlap with habitats, it was not clear whether management measures were required or not. The entire PI is therefore scored below. For the same reasons as 2.4.1 it is scored in relation to seagrass beds.

PI 2.4.2	There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
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Scoring Issue	SG 60	SG 80	SG 100
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a	Management strategy in place			
	Guide post	There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a strategy in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	Met?	Yes	Yes	No

Rationale

The proportional overlap of the fishery footprint with potentially sensitive habitats, including seagrass beds, plus the likely impact of the gear (fixed nets) on seagrass, is sufficiently low that 2.4.1 can be met at SG80. There are some habitat management measures in place, including two areas closed to the fishery: Adam’s Bridge National Park and Wilpattu National Park, and Bar Reef Marine Sanctuary, which is not closed, but where extractive activities are restricted. There is also monitoring of the fishery footprint and its overlap with critical habitats, as described above. Protection of critical habitats, including seagrass beds, is incorporated into the Fishery Management Plans (para. 33). This meets the definition of a partial strategy. MSC require ‘scientifically-based move-on rules’ to be in place as a default at SG60, but since there is no such thing for a fixed net fishery, this does not apply here. SG80 is met.

b	Management strategy evaluation			
	Guide post	The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some objective basis for confidence that the measures/partial strategy will work, based on information directly about the UoA and/or habitats involved.	Testing supports high confidence that the partial strategy/strategy will work, based on information directly about the UoA and/or habitats involved.
	Met?	Yes	Yes	No

Rationale

The habitat and fishery footprint mapping work, as well as knowledge about the impact of the gear type, provide an objective basis for confidence that VMEs are not significantly threatened by this fishery. SG80 is met.

c	Management strategy implementation		
	Guide post		There is some quantitative evidence that the measures/partial strategy is being implemented successfully.
	Met?		Yes
			There is clear quantitative evidence that the partial strategy/strategy is being implemented successfully and is achieving its objective, as outlined in scoring issue (a).
			No

Rationale

Evidence comes from the habitat and footprint mapping carried out by the FIP (Bandara 2019a,b) as well as the fact that the Fisheries Management Plans ask fishermen to avoid seagrass beds and other critical habitats where possible. SG80 is met.

d	Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs		
	Guide post	There is qualitative evidence that the UoA complies with its management requirements to protect VMEs.	There is some quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	Yes	?
			There is clear quantitative evidence that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.

Rationale

The only regulatory requirement in place to protect VMEs at present is the closed / restricted areas. The mapping suggests that fishing grounds do not overlap with these protected areas except to a very limited extent and away from critical features. SG60 is met. The overlap has been quantified as 2% for Bar Reef and 4% for Adam's Bridge, in both cases from the Gulf of Mannar UoA. Bandara (2018b) proposes that the FIP undertake further studies to warn fishermen about the latter overlap, which is illegal although not actually damaging. On this basis, SG80 is met in relation to this fishery. We have no information about measures that may be in place from other fisheries (although there may not be any) so SG80 cannot be scored in full.

References

Bandara 2018a,b

Draft scoring range

60-79

Scoring table 6. PI 2.4.3 – Habitats information

This PI scored <60 because the information-gathering work (footprint mapping etc. as described above) had only just started when the previous assessment was carried out. The entire PI is scored below.

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
Scoring Issue		SG 60	SG 80	SG 100
a	Information quality			
	Guide post	The types and distribution of the main habitats are broadly understood. OR If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the types and distribution of the main habitats.	The nature, distribution and vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA. OR If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.	The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.
	Met?	Yes	Yes	Yes / No

Rationale

Habitats are mapped for both UoAs, with emphasis on VMEs (Bandara 2018a,b). Other habitats are sedimentary (sand or mud). The information on the distribution and nature of habitats is better for this fishery than for most others. SG80 is met.

b	Information adequacy for assessment of impacts			
	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the	The physical impacts of the gear on all habitats have been quantified fully.

		OR If CSA is used to score PI 2.4.1 for the UoA: Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	spatial extent of interaction and on the timing and location of use of the fishing gear. OR If CSA is used to score PI 2.4.1 for the UoA: Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	
	Met?	Yes	Yes	

Rationale

The main impacts of the gear on the habitat can be identified, because the type, composition and size of the gear and how it is used is known, and the footprint of the fishery and its overlap with key habitats is mapped, using two different methods (see details under 2.4.1). SG80 is met.

c	Monitoring			
	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.
	Met?		Yes	

Rationale

The GPS smartphone app allows continued monitoring of the fishery footprint. SG80 is met.

References

Bandara 2018a,b

Note: There is a range of general information on the impact of fixed nets on different types of marine habitats, which has not been consulted in this brief update, but which would be available to supplement the above analysis.

Draft scoring range

≥80

6.3 Principle 3

6.3.1 Principle 3 Performance Indicator scores and rationales

Scoring table 7. PI 3.2.3 – Compliance and enforcement

The Ministry of Fisheries and Aquatic Resources (MFAR) is the principal authority for the management and regulation of all coastal and offshore fisheries in Sri Lanka. The legislative framework for the regulation and management of Sri Lanka's marine resources is the Fisheries and Aquatic Resource Act No. 2 of 1996, to which a large number of new regulations and amendments have been added over the years. The Sri Lanka legislative framework is comprehensive in scope and is consistent with international norms to achieve the sustainable exploitation of marine resources. There are no specific provisions or regulations pertaining to the exploitation of BSC resources in Sri Lanka. Regulations and sanctions in the Act that are relevant to the BSC fishery include: Sections 6-14 that address regulations concerning the licensing of fishing craft, Sections 27-29 that address the protection of fish and other aquatic resources, Sections 31 and 32 that authorizes the designation of fisheries management areas and fisheries committees as the management authority for these areas, Section 34 that stipulates that the Minister may declare a closed season or open season for fishing in fisheries management areas, Section 36 that pertains to the protection of aquatic resources in danger of extinction and the habitat of fish and aquatic resources, Section 37 which details acts prohibited in fisheries reserves, Section 44 that outlines procedures (1–10) for settling disputes, Sections 46-48 that outline the powers of authorized officers, Sections 49-57 that details the offenses and penalties for non-compliance to regulations concerning fishing vessels, gear and equipment, and harmful fishing method infractions and Section 61 that stipulates that no person shall use, possess, transport, purchase or sell monofilament nets for the purpose of catching fish in Sri Lankan waters.

The Attorney General's Department approved a regulation for the BSC fisheries in 2018 that sets out provisions for the harvesting of BSC. The regulation stipulates that no person shall:

- harvest BSC using bottom-set nets with a mesh size of less than 4½ inches or a yarn of more than 6 ply;
- use ridged or collapsible baited traps to harvest BSC; and
- all persons, agents or companies engaged in harvesting, sale, purchasing, transport, re-sale, manufacture and/or export of BSC or BSC products shall provide any information and data about the fishery to DFAR when requested.

Implementing the regulations and management of Sri Lanka's marine resources is the responsibility of the Director General and the Department of Fisheries and Aquatic Resources (DFAR). There are 15 District Fisheries Offices (DFO) located around the island with the core responsibility of registering fishing craft and issuing fishing operation licences in accordance with the Fisheries and Aquatic Resource Act No. 2 of 1996. Also, the DFO officers collect fish catch data.

To address issues concerning the management and conservation of the BSC and the impact of the BSC fishery on the local fishing communities and the marine ecosystem of their habitat management plans were developed towards the end of 2017 for Puttalam Lagoon and Palk Bay, Kilinochchi, Jaffna and Mannar Districts. Each District Fishery Management Plan (DFMP) sets out the location, extent, area and maritime boundary of the BSC fishers as well as the landing centres in each district. The DFMPs include a harvest strategy for each district, control mechanisms to maintain the status of the stocks and reference points for the fishery. The DFMPs also include bycatch management strategies to minimize the BSC fishery impact on non-target species. Provisions for the DFO of the DFAR to monitor the implementation of the DFMPs and take measures to ensure compliance are also included. Each DFMP sets out procedures to be followed by fishers and DFAR to resolve disputes within the fishery and a list of actions to be implemented to improve the BSC fishery.

A *Code of Conduct for Blue Swimming Crab Fishing in Sri Lanka* was developed in 2016 to ensure the sustainable use of resources by applying good management measures to maintain the status of BSC stocks at healthy limits to minimize the impact on the marine environment and the associated species. The Code focuses on best fishing practices and outlines ten rules (see Annex 2) that fishers are expected to comply with. The Code was developed by DFAR, in collaboration with the Seafood Exporter's Association and BSC fisher communities in the districts of Jaffna, Mannar, Kilinochchi, and Puttalam.

The first compliance survey for the Code of Conduct for BSC fishing was conducted in the **Gulf of Mannar Fishery** (Mannar and Puttalam Districts) on the 16th and 31st May 2017. The second survey was conducted between 1st and 31st of December 2018.

Results of the surveys indicated that:

- Overall score for compliance with the Code of Conduct increased from 85% in 2017 to 94% in 2018;
- Compliance with the Fisheries and Aquatic Act No. 2 of 1996 increased from 81% in 2017 to 95% in 2018, mainly due to efforts of the Department of Fisheries officers and BSC fishers to register their boats and engines and obtain operating licenses;
- Compliance with Rule 3: *The maximum height of a net shall be 15 eyes Mannar District and 20 eyes in Puttalam District (except in the following areas Serakuliya, Vannimundel, Ethale, Soththupitiya, Mandalakuda) according to the district fishery management plan and the maximum length of shall be 1,500 eyes per piece*, increased from 31% in 2017 to 78% in 2018. This was mainly due to changes in the rules for BSC fishing in the shallow waters of Puttalam Lagoon and Dutch Bay in Gulf of Mannar;
- Compliance with Rule 8: *Any person who intends to supply BSC for export shall not use any other gears such as traps, trawls, fixed nets other than the bottom-set prescribed*) and Section 61 of the Fisheries and Aquatic Resources Act No. 2 of 1996 that prohibits the use of monofilament nets increased from 94% in 2017 to 97% in 2018; and
- Compliance with Rule 4: An individual fisher can use/set a maximum of 35 net pieces/panels in a single day, increased from 83% in 2017 to 95% in 2018.

The first compliance survey for Code of Conduct for BSC fishing was conducted in the **Palk Bay Fishery** (Jaffna, Kilinochchi, and Manner (North) Districts) between 25th and 31st May 2017. Follow-up surveys were conducted in December 2017 and June 2018 in Kilinochchi and Manner Districts. Compliance data concerning Jaffna District was compiled in mid-2018.

Results of the surveys indicated that:

- Overall score for compliance with the Code of Conduct for responsible fishing in Palk Bay increased from 92% in 2017 to 96% in 2018;
- Largest increase in compliance (31%) was due to the efforts by the Department of Fisheries officers and BSC fishers to register their boats and engines and obtain BSC operating licenses. Compliance increased from 56% in 2017 to 87% in 2018;
- Compliance with Rule 4: *An individual fisherman can use/set a maximum number of 35 net pieces/panels in a single day*, increased from 82% in 2017 to 95% in 2018; and
- Monofilament nets (Rule 8) used for harvesting BSC were still problematic in some landing centers in Jaffna District (monofilament nets are prohibited under Section 61 of the Fisheries and Aquatic Resources Act No. 2 of 1996). However, overall it was determined that the majority of BSC fishers use nylon or Indian (plastic) nets in Jaffna District. In 2017, approximately 50% of the BSC fishers used monofilament nets in Alaikadal and Thooriyouur but in 2018 there was a significant decrease in usage.

The Fisheries and Aquatic Resources Act No. 2 of 1996 and amendments outline violations and penalties concerning the licensing of fishing vessels and the use of monofilament nets that are most relevant to the blue swimming crab fishery include:

Part IX Offences and penalties:

Section 49 (1 – 4) stipulates that any person who contravenes or fails to comply with the provisions listed under various sub-sections under Section 49 of the Act shall on conviction be liable to a fine or imprisonment for the length of time specified in Section 49.

Section 51 (1) stipulates that where any person is convicted of an offence under the Act:

- (a) Any fishing boat, engine, fishing net or other fishing gear or equipment or any vehicle or thing used in, or in connection with the commission of such offense, or
- (b) Any fish or other aquatic resources caught or taken in the commission of such offence or proceeds of sale of such fish or other aquatic resources deposited on court under Section 46, shall by virtue of such conviction, be forfeited to the State.

The majority of fishers participating in the BSC fishery comply with the regulations in the Act, as evidenced by the Code of Conduct surveys conducted in 2017 and 2018. The MCS mechanisms for the enforcement of the licensing of fishing vessels and the prohibition of illegal fishing gears (monofilament nets) by DFAR are limited in the four districts in Palk Bay and Gulf of Manner fisheries. However, legal action has been taken by DFO for offenses committed against the regulations in the Act. In the Palk Bay and Gulf of Manner fisheries there were a total of 40 violations committed by fishers in 2018 and 44 in 2019. The majority of the offenses were committed by BSC fishers for fishing without an operating license and fishing with monofilament nets.

The problem of IUU fishing by Tamil Nadu trawlers persisted throughout 2019 and continues into 2020. However, Sri Lanka has taken measures to address this issue through the adoption of Fisheries (Regulations of Foreign Fishing Boats) (Amendment) Act No.1 of 2018. Amendments to Sections 13, 15, 16, 17, 18, 19, 20, 23, 24, 26, 27, and 28 of the Act set out procedures for the seizure of foreign fishing vessels; penalties for offenses committed against the Act (Schedules I-V); provisions for claims concerning abandoned foreign fishing vessels, fishing gear and cargo; payments for penalties; appeals and implementation of International fisheries management standards. Indian fishers arrested by Sri Lankan authorities for allegedly crossing the International Maritime Boundary Line and fishing in Sri Lankan waters from 2017 - 2019 are listed in the table below:

Year	Fishers arrested	Fishers released
2017	453	453
2018	156	156
2019	210	209

Efforts have been made to encourage the government to take legal action to prosecute Tamil Nadu fishers arrested for fishing in Sri Lanka waters. Training programs were conducted by Colombo lawyers for DFAR, local lawyers and local fisher leaders on the amendment. This has led to the successful prosecution of Tamil Nadu fishers for IUU fishing in Sri Lankan waters. In addition, meetings between the Ministers of Fisheries in India and Sri Lanka were held to address IUU fishing issues in Sri Lanka. To address IUU fishing concerns 507 transponders were installed by the Government of Tamil Nadu in mechanized fishing boats on a pilot basis to monitor the location of Tamil Nadu trawlers.

PI 3.2.3	Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		
Scoring Issue	SG 60	SG 80	SG 100
a	MCS implementation		
Guide post	Monitoring, control and surveillance mechanisms exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance system has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A comprehensive monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
Met?	Yes	Yes	No

Rationale

A monitoring control and surveillance (MCS) mechanism is in place for the Palk Bay and Gulf of Mannar fisheries. Implementing the regulations and management of Sri Lanka's marine resources is the responsibility of the Director General and the Department of Fisheries and Aquatic Resources (DFAR). There are 15 District Fisheries Offices (DFOs) located around the island with the core responsibility of registering fishing craft and issuing fishing operation licences and enforcement of the prohibition of monofilament nets in the four districts of the Palk Bay and Gulf of Mannar fisheries in accordance with the Fisheries and Aquatic Resource Act No. 2 of 1996. Although the enforcement capacity of DFAR is limited, legal action has been taken for offenses committed against the regulations in the Fisheries and Aquatic Resources Act No.2 of 1996. In the Palk Bay and Gulf of Mannar fisheries there were a total of 40 violations committed by BSC fishers in 2018 and 44 in 2019. The majority of the offenses were committed by fishers for fishing without an operating license and fishing with monofilament nets.

The Code of Conduct for BSC fishing was endorsed by the Director General, DFAR in February 2017. The first compliance survey was conducted for both fisheries in April/May 2017 and a second survey was completed in 2018. Results indicated that BSC fishers' overall compliance with the Code rules was 94% for the Gulf of Mannar fishery and 96% for the Palk Bay fishery in 2018.

Based on the above, it is likely that SG80 is met as a monitoring, control and surveillance system has been implemented for the Palk Bay and Gulf of Mannar fisheries and has demonstrated an ability to enforce relevant management measures, strategies and/or rules. However, SG100 is not met as DFAR has not demonstrated a constant ability to enforce management measures in the Fisheries and Aquatic Resources Act No.2 of 1996 that are relevant to the BSC fishery and the rules of the Code of Conduct.

b	Sanctions		
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	Guide post	Sanctions to deal with non-compliance exist and there is some evidence that they are applied.	Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence.	Sanctions to deal with non-compliance exist, are consistently applied and demonstrably provide effective deterrence.
	Met?	Yes	No	No

Rationale

Regulations and sanctions in the Fisheries and Aquatic Resources Act No.2 of 1996 that are relevant to the BSC fishery include: Sections 6-14 that address regulations concerning the licensing of fishing craft, Sections 27-29 that address the protection of fish and other aquatic resources, Sections 31 and 32 that authorizes the designation of fisheries management areas and fisheries committees as the management authority for these areas, Section 34 that stipulates that the Minister may declare a closed season or open season for fishing in fisheries management areas, Section 36 that pertains to the protection of aquatic resources in danger of extinction and the habit of fish and aquatic resources, Section 37 which details acts prohibited in fisheries reserves, Section 44 that outlines procedures (1–10) for settling disputes, Sections 46-48 that outline the powers of authorized officers, Sections 49-57 that details the offenses and penalties for non-compliance to regulations concerning fishing vessel, gear and equipment, and harmful fishing method infractions and Section 61 that stipulates that no person shall use, possess, transport, purchase or sell monofilament nets for the purpose of catching fish in Sri Lankan waters.

The violations and penalties in the Act concerning the licensing of fishing vessels and the use of monofilament nets that are most relevant to the blue swimming crab fishery include:

Part IX Offences and penalties:

Section 49 (1 – 4) stipulates that any person who contravenes or fails to comply with the provisions listed under various sub-sections under Section 49 of the Act shall on conviction be liable to a fine or imprisonment for the length of time specified in Section 49.

Section 51 (1) stipulates that where any person is convicted of an offence under the Act:

- a) Any fishing boat, engine, fishing net or other fishing gear or equipment or any vehicle or thing used in, or in connection with the commission of such offense, or
- b) Any fish or other aquatic resources caught or taken in the commission of such offence or proceeds of sale of such fish or other aquatic resources deposited on court under Section 46, shall by virtue of such conviction, be forfeited to the State.

Although the enforcement capacity of DFAR is limited, legal action has been taken for offenses committed against the regulations in the Act. In the Palk Bay and Gulf of Manner fisheries there were a total of 40 violations committed by fishers in 2018 and 44 in 2019. The majority of the offenses were committed by BSC fishers for fishing without an operating license and fishing with monofilament nets.

Sri Lanka has taken measures to address IUU fishing conducted in Sri Lankan waters by Tamil Nadu trawlers through the adoption of Fisheries (Regulations of Foreign Fishing Boats) (Amendment) Act No.1 Of 2018. Amendments to Sections 13, 15, 16, 17, 18, 19, 20, 23, 24, 26, 27, and 28 of the Act set out procedures for addressing this issue. A total of 3470 Indian fishers were arrested from 2010- February 2020 for crossing the International Maritime Boundary Line and fishing in Sri Lankan waters, out of which 3450 were released due to the sustained diplomatic efforts of the Government.

Based on the above, SG60 is likely to be met as sanctions to deal with non-compliance exist and there is some evidence that they are applied. However, SG80 and SG100 are not met as the sanctions are not consistently applied.

c	Compliance			
	Guide post	Fishers are generally thought to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.	Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.	There is a high degree of confidence that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.
	Met?	Yes	Yes	No

Rationale

There is evidence that BSC fishers comply with the management system. All persons, agents or companies engaged in the harvesting, sale, purchasing, transport, re-sale, manufacture and/or export of BSC or BSC products are required to provide information and data about the fishery to DFAR when requested. BSC fishers and other relevant stakeholders have supplied information concerning the BSC fishery for the two Code of Conduct surveys that were conducted in 2017 and 2018, ecological impact assessments in 2018, and BSC stock assessments in 2018.

The Code of Code Compliance surveys conducted for the Palk Bay and Gulf of Mannar fisheries indicated that the overall compliance score for the Palk Bay fishery was 92% in 2017 and 96% in 2018 and for the Gulf of Mannar fishery 85% in 2017 and 94% in 2018. The largest increase in compliance in the Palk Bay fishery (31%) from 2017 to 2018 was due to BSC fishers registering their vessels and engines and obtaining operating licenses. However, there was still a problem in some landing centres in Jaffna District with BSC fishers using monofilament nets. For the Gulf of Mannar fishery the largest increase in compliance (47%) was due to a change in Rule 3 of the Code of Conduct concerning the height and length of bottom-set nets. The second largest increase (13%) was due to BSC fishers registering their vessels and engines and obtaining operating licenses.

Based on the above, there is some evidence to demonstrate that BSC fishers comply with the management system and when required provide information of importance for the effective management of the fishery therefore, SG80 is likely to be met. However, SG100 is not met as there is not a high degree of confidence that BSC fishers comply with the management system.

d	Systematic non-compliance	
	Guide post	There is no evidence of systematic non-compliance.
	Met?	Yes

Rationale

Records from DFAR indicate that there is a low incidence of infractions committed by BSC fishers. Also, the severity of the penalties for violations listed in the Fisheries and Aquatic Act No.2 of 1996 is a deterrent to non-compliance. There is no evidence of systematic non-compliance. SG80 is therefore likely to be met.

References	
Draft scoring range	60-79

7 References

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8 Appendices

8.1 Annex 1.

Scoring for P3 – 3.2.3 in 2017

MEC Summary of predicated scoring from the Sri Lanka blue swimming crab (BSC) pre-assessment UoA1 (Palk Bay stock) and UoA2 (Gulf of Mannar stock) in 2017.

P	Component	PI	Performance Indicator	RBF	2017	Rational/Key Points
3	Fishery Specific Management System	3.2.3	Compliance and Enforcement	n/a	Fail	<i>In, 2017, the first compliance survey of the Voluntary Code of Conduct for the BSC fishery was conducted in four districts bordering the Palk Bay and Gulf of Mannar Districts. The overall levels of compliance of BSC fishers with the Code were 92% in Palk Bay, 89% in Mannar, 94% in Kilinachchi and 94% in Jaffna Districts. However, the survey results for the four districts indicated that only 56% of the BSC fishers operate in compliance with the Fisheries and Aquatic Act No. 2 of 1996 (amendments and regulations).</i>
				n/a		<i>Monofilament nets continue to be illegally used for the harvest of BSC, most notably in Puttalam and Jaffna Districts (monofilament nets are prohibited under Section 61 of the Fisheries and Aquatic Resources Act No. 2 of 1996). In Jaffna District it is estimated that as much as 75% of the catch is landed using monofilament nets. Also there are concerns that political patronage has caused the continued use of monofilament nets.</i>
				n/a		<i>Despite diplomatic efforts by the Sri Lanka and Indian governments the state of Tamil Nadu has failed to take any action or measures to stop illegal fishing by its trawlers in Sri Lankan waters. This severely hampers the FIP's efforts to improve the BSC fishery.</i>
						<i>The DFAR is responsible for the enforcement of the regulations</i>

				n/a		<i>governing the exploitation of Sri Lanka's fishery resources but their monitoring, control and surveillance systems are not comprehensive or consistently applied.</i>
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8.2 Annex 2

BSC Code of Conduct Rules

Rule 1: BSC fishers will operate in compliance with the Fisheries and Aquatic Act No.2 of 1996
Rule 2: BSC shall only be harvested using less than 6 ply bottom-set crab nets with a minimum mesh size of 4½ inches.
Rule 3: The maximum height of a net shall be 15 eyes Mannar District and 20 eyes in Puttalam District (<i>except in the following areas Serakuliya, Vannimundel, Ethale, Soththupitiya, Mandalakuda</i>) according to the district fishery management plan and the maximum length of shall be 1,500 eyes per piece (Rule 3 included in 2018)
Rule 4: An individual fisher can use /set a maximum number of 35 net pieces/panels in a single day.
Rule 5: The set time (soakage time) of a bottom-set crab net for the catching of BSC shall not be more than 12 hours 6:00am to 6:00pm
Rule 6: An individual fisher will not deliberately place or set his nets on coral reefs, rocky reefs, or sea grass beds.
Rule 7: BSC fishing will be limited to six nights per week, commencing Sunday evening and ending Saturday morning
Rule 8: Any person who intends to supply BSC for export shall not use any other gears such as traps, trawls, or fixed nets other than the bottom-set crab net prescribed above
Rule 9: BSC fishers will dispose of all used, damaged, or discarded nets on land in an environmentally safe manner to avoid "ghost fishing"
Rule 10: Any person who engages in fishing for BSC in compliance with this code and/or purchases, sells, or processes BSC harvested using bottom-set nets shall assist the DFAR in the collection of catch, effort and production data when requested by staff and officers of the respective DFEO, DFAR and FMD