

Philippines Blue Swimming Crab FIP Year-3 Review

Philippine Association of Crab Processors, Inc

Final Report (rev 1.1)

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Submitted by



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Acronyms

BFAR	Bureau of Fisheries and Aquatic Resources
BSC	Blue swimming crab
BSC-NMP	Blue swimming crab national management plan
CPUE	Catch per unit effort
ETP	Endangered, threatened and protected
FAO	Fisheries Administrative Order
FARMC	Fisheries and Aquatic Resources Management Council
FIP	Fisheries improvement project
FMA	Fisheries management area
HCR	Harvest control rules
JAO	Joint Administrative Order
LB-SPR	Length based spawning potential ratio
LGU	Local Government unit
LRP	Limit reference point
MSC	Marine Stewardship Council
MSY	Maximum sustainable yield
NGO	Non-governmental organisation
NSAP	National stock assessment programme
PACPI	Philippine Association of Crab Processors, Inc
PI	Performance indicator
PRI	Point of recruitment impairment
RA	Republic Act
SAG	Scientific advisory group
TRP	Target reference point
UoA	Unit of Assessment
USAID	United States Agency for International Development
VME	Vulnerable marine ecosystem.

1 Introduction

MRAG was approached by the Philippine Association of Crab Processors, Inc. (PACPI) to conduct this external three-year audit of the Philippine blue swimming crab FIP as part of Fishery Progress. This was a desk-based review and assessed the FIPs actions, results and performance against the MSC Standard version 2.1.

It should be noted that in June 2022, the MSC Board of Trustees approved the new MSC Fisheries Standard (version 3.0). Future assessments of the fishery leading to full certification will require an audit against this new standard, which will be published in October 2022.

1.3 Aims and objectives

A FIP should be reviewed annually, in line with best practice, with a more in-depth independent external review every three-years. The aims of this three-year FIP review are three-fold:

- 1. To assess the fishery's MSC performance indicator scores in line with progress made under the FIP;
- 2. To verify the results of the FIP's environmental workplan progress as reported on FisheryProgress; and
- 3. To provide recommendations to the FIP on environmental workplan actions that should be modified, including recommendations for additional actions/tasks that should be taken or suggested changes to timelines, to help the FIP achieve their stated objectives.

For this three-year review, FIP participants submitted documents which provide an update on several milestones. These documents have been reviewed in this report to firstly determine whether milestone have been completed and to determine whether any progress corresponds to an increase in scoring against MSC Performance Indicators. For this review, only a desk-based study was conducted with no stakeholder consultation.

1.2 FIP Information

The following information provides details of the unit of assessment (UoA).

Target species scientific name and common name	Philippines blue swimming crab (<i>Portunus pelagicus</i>)
Fishery location	FMA 11: Visayan Sea, Guimares Strait, Iloilo Strait and Panay Gulf (Regions 5, 6 and 7)
Gear type(s)	Bottom set gillnet
	Crab trap
	Crab pot
Estimated FIP Landings (weight	22,203 tonnes (data from 2020)
in metric tons)	Bottom set gillnet (14,714 mt)
	Crab trap (4,734 mt)
	Crab Pot (2,755 mt)
Vessel type(s) and size(s)	Municipal motorized: < 3 GT

	Municipal non-motorised: < 3 GT	
	Small-scale commercial: 3.1 GT and 20 GT	
	Medium-scale commercial: 20.1 GT to 150 GT	
	Large-scale commercial: > 150 GT	
	Bottom set gillnet: 8,800 vessels	
Number of vessels	Crab trap: 2,267 vessels	
	Crab pots: 1,145 vessels	
Management authority	Bureau of Fisheries and Aquatic Resources (BFAR)	
Auditor name(s)	Imogen Hamer, Harry Owen, and Robert Wakeford	
Auditor Organization/Affiliation	MRAG Ltd	
Date of report completion	30/03/2023	

1.3 FIP Background

Following an initial MSC pre-assessment conducted in May 2015 (MRAG, 2015), the Philippine blue swimming crab fishery entered into a Fisheries Improvement Project (FIP) following discussions and consultations with local stakeholders.

The FIP was defined within the Visayan Sea, which contributed to about 37% of the total national production of blue swimming crab (PSA, 2018). Within in this region, the Unit of Assessment (UoA) was related to provinces within which the municipal governments responsible for municipal waters where blue swimming crab fishing activities take place. These were defined as **Northern Negros Occidental**, **Southern Masbate**, **Northern Iloilo**, and **Bantayan Island, Cebu** (National Stock Assessment Programme; NSAP Regions 5, 6 and 7). Here, about 27% of blue swimming crab were harvested from these provinces, constituting around 36.6% of pasteurized crab meat produced in 2018. Overall, the production from these three areas represents 72% of the total blue swimming crab sourced from the Visayan Sea. These fishing grounds are also the common and major sources of blue swimming crab of PACPI member companies. In 2018 there are about 54 picking stations (Negros Occidental – 34; Iloilo – 15; Bantayan Island, Cebu – 5) operating in these areas (Anon, undated).

In 2015, a FIP action plan was developed and implemented by PACPI and forms the basis of the current environmental workplan evaluated under this review (Anon, undated). Due to a number of unforeseen circumstances, an internal review of the FIP was not conduct during the period 2016 – 2019 and an extension of the FIP and workplan was granted by FisheryProgress until 2024.

The global COVID-19 pandemic further exacerbated completion of an independent 'threeyear audit' in 2020. Due to the issues highlighted above, the original 2015 pre-assessment forms the 'baseline' to review current performance of the fishery against the MSC certification requirements. The FIP is now recovering from the impacts of the pandemic, which has enabled progress to be reviewed in 2022. During this period, it was confirmed that BSC trap gear also included 'pots'. This has been added to the Unit of Assessment in 2022 to enable full assessment of the FIP. An illustration of the difference between crab pots and traps is shown below.





Figure 1: Example of crab pots and traps used in the fishery assessed as part of the FIP

Source: PACPI

1.4 Stakeholder Consultation & Meetings

Due to the restrictions in place as a result of the global COVID-19 pandemic, international travel to the Philippines to conduct an on-site audit is not possible. Instead a number of remote interviews initially conducted with key stakeholders in government, academia and industry to clarify the results and validate the workplan:

- BFAR Region 5 NSAP
- BFAR Region 6 NSAP
- BFAR Region 7 NSAP
- University of the Philippines
- PACPI
- Municipality of Ajuy and Concepcion in Iloilo with its FARMC and MAO
- Municipality of Manapla and EB Magalona in Negros Occidental with its FARMC and MAO
- Municipality of Bantayan, Cebu with its FARMC and MAO
- NFRDI
- MRAG Limited

It was not feasible, however, to complete a comprehensive stakeholder consultation. Instead, stakeholders were asked to review and comment on the summary of findings and recommendations in order to update the report.

2 Summary of Findings and Recommendations

Summary findings from the 'Three-Year FIP review undertaken by MRAG in 2022 are set out below, along with recommendations for the FIP (e.g. to address areas highlighted across the three Principles of the MSC that might currently prohibit the fishery from successfully passing a full MSC assessment).

1. Principle 1- Stock Status

2.1.1 Findings

- Historically, the status of the BSC stock within the UoA has been heavily overfished. To date, there is some evidence to show the decline in status has stabilised and the stocks are beginning to rebuild above the point of recruitment impairment (PRI). However, results from recent SPR stock assessment and CPUE data do not provide sufficient evidence that the stock is fluctuating around a level consistent with MSY.
- It is not clear that the rebuilding strategies are rebuilding stocks to MSY, or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe.
- There is a danger that the focus of rebuilding the BSC stock is predominantly through stock enhancement methods rather than effective fisheries management of the wild population.
- While crab hatcheries (or crab banks) can form part of a rebuilding strategy, to achieve MSC certification, ongoing management of the stock at MSY target levels must not rely on these activities.
- To date, given the rebuilding of the stock, there is little or no evidence to demonstrate the harvest strategy is responsive to the state of the stock.
- There exists monitoring of the stock through the National Stock Assessment Program, including routine monitoring of daily catch landing, landing size, as well as reproductive biology. These data will help determine whether the harvest strategy is working (including the effectiveness of the crab banks).
- Harvest control rules (HCRs) are available but currently remain subject to stakeholder consultation and approval by the FMA's Management Board. However, a number of management measures are in place as part of the harvest strategy thought to control fishing effort (e.g. closed season).
- HCRs can be described as well-defined although they do not currently demonstrate that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around the target level consistent with (or above) MSY. Furthermore, it is not clear if the HCRs outlined are likely to be robust to the main uncertainties, such as high recruitment variability etc. Finally, it remains uncertain if the HCRs are sufficient to rebuild the stock within the given timeframe and keep it fluctuating around MSY.
- There is little or no available evidence to show level of removals are monitored by vessels and gear covered under the UoA to support the HCRs.
- There is limited evidence to show the number and vessels by gear type under the UoA. These data are important to implement HCRs based on fishing effort within the UoA and also for purposes of traceability.

- To date, there are several methods used to assess the status of the BSC stock, based on different assumptions, data time periods and regions. While the methods presented are sufficient to meet SG60, the preliminary nature of the results generated from newer analytical methods such as length-based Bayesian (LBB) model do not provide sufficient evidence to meet SG80. This method is capable of taking uncertainty into account, although the available evidence does not explicitly demonstrate this nor does it evaluate stock status relative to reference points in a probabilistic way. The LBB results are considered preliminary and the assessment of stock status does not appear to have been subject to peer review.
- Due to the life history characteristics of BSC (i.e. short-lived, fast growing) and the potential for high recruitment variability, stock assessments continue on a regular basis using up-to-date data sources.

2.1.2 Recommendations

- Provide greater clarity on stock assessment methodology adopted by NSAP there are a number of models used each with their own assumptions and limitations that impact the overall score of the fishery.
- It is recommended that approved method(s) used to assess the status of the stock are (i) appropriate to the HCR, (ii) clearly demonstrate how uncertainty is taken into account and (iii) subject to peer review.

2. Principle 2- Environmental Impacts

2.1.3 Findings

- To date, primary (managed) and secondary (unmanaged) species have not been identified. Available catch composition data provides some indication on which species are likely to classified as major (i.e. >5% or more by weight of the total catch) or minor. To facilitate determination of main and minor species, it is not clear if reported species proportions (% of total) are calculated based on weight or number (MSC FCR SA3.4.2).
- As a data-limited fishery, a PSA under the MSC RBF can be used to score primary species outcome status for all main species (MSC FCR Annex PF). An RBF assessment for primary species has been planned under the FIP workplan.
- While some information is available on species composition for different gear types, primary (managed) species have not been identified at this time for each gear type under UoA, and prohibits development of appropriate measures or partial strategy to maintain the stocks of these species above the point of recruitment impairment (PRI).
- Reported bycatch studies do not explicitly identify main and minor secondary species and no information on the stock status of secondary species is available for review at this time.
- As a data-limited fishery, a PSA under the MSC RBF can be used to score secondary species outcome status for all main species.
- Secondary species have not been identified at this time that prohibits development of appropriate management strategies to maintain the stocks of these species above the point of recruitment impairment (PRI). The BSC-NMP 2020 rarely mentions bycatch and the measures taken to mitigate and minimize it.

- There is an absence of information provided that is adequate to estimate the impact of the UoA on the secondary species.
- As a data-limited fishery, a PSA under the MSC RBF can be used to score ETP species outcome (MSC FCR Annex PF). An RBF assessment for ETP species has been planned under the FIP workplan.
- The BSC-NMP 2020-2024 does not explicitly mention any of the measures or a strategy that are currently in place or will be in place to avoid or hinder the recovery of ETP species, and are designed to be highly likely to achieve national and international requirements.
- There is little or no information relating to the benthic substrate of the fishing grounds within the UoA. As a data-limited fishery, a Consequence Spatial Analysis (CSA) under the MSC RBF can be used to score the habitat component in relation to the effects of the UoA on the structure and function of the habitats impacts by the UoA (MSC FCR SA3.13.1). An RBF assessment for habitat impacts has been planned under the FIP workplan.
- To date, the Northern Iloilo Alliance for Development (NIAD), an alliance of ten Local Government Units (LGUs) in the province of Iloilo has adopted the MPA Network (MPAN) Design from September 2022. The MPAN Design covers the mangrove, coral reef and seagrass areas that serves as habitat of BSC. It is unclear if this will be extended to other areas in Visayan Sea to cover the entire Unit of Assessment. A number of additional tasks are due to be completed mid-2024. These should provide evidence necessary to support development of a partial strategy, that will provide some objective basis for confidence that the partial strategy will work, and there is some quantitative evidence that the partial strategy is being implemented successfully.
- If the RBF is used to score the outcome status of habitats (PI 2.4.1) for the UoA, some quantitative information must be available and is adequate to estimate the consequence and spatial attributes as well as assess the types and distribution of main habitat types. In addition to this, adequate information must continue to be collected to be collected to detect any increase in risk to the main habitat types.
- As a data-limited fishery, a SICA can be performed under the MSC RBF to score Ecosystem outcome PI 2.5.1 (MSC FCR Annex PF). An RBF assessment for Ecosystem outcome has been planned under the FIP workplan.
- One of the short-term goals within BSC-NMP 2020-2024 requires resource mapping and impact assessments of the fishery on the ecosystem as well as promoting the use of 'eco-friendly' gear types. A number of gear swaps of gillnets to pots have already started to take place by BFAR6.

2.1.4 Recommendations

- Complete ongoing studies within the FIP workplan to address issues raised under P2. Results will need to be reviewed and audited against MSC Standard.
- Following the results of the RBF, to review what measures or strategy is required to manage primary, secondary and ETP species, habitats and ecosystem for both gear types within the UoA.
- Where feasible, it is recommended to classify all bycatch species as either primary and secondary species and either main or minor for both gear types. In addition, information on the total weight by species, as well as proportion of the total weight is given to determine if the catch of one or more species is considered exceptionally large to be considered a main species.

3. Principle 3 - Management

2.1.5 Findings

- Due to the current status of the BSC stock, it is unclear whether the cooperation between different agencies is effective to deliver management outcomes consistent with MSC Principles 1 and 2.
- The mechanism by which conflict resolution at a national level takes place is unknown and cannot be determined as transparent, nor is there evidence to demonstrate this has been effective.
- Within the BSC-NMP the roles and responsibilities of each member of the council are explicitly laid out and generally understood, as well as the roles for each agency that is involved within the management plan.
- A Technical Working Group has been established for the implementation of the JAO No.1,S of 2014. Available evidence demonstrates the TWG continue to meet and regularly seek and accept relevant information, including a demonstration how the information obtained has been considered for management.
- At a fishery level, the BSC-NMP establishes the need for a decision-making process and highlights that the BSC Council will act as the decision-making body for the establishment of new national policies. It is not clear however, how well established these processes are, or how they respond to serious and other important issues.
- At a fishery level, there is little information available related to the availability of information on the fishery's performance and management and it remains unclear if this is available upon request with explanations provided for any actions or lack of actions taken to manage the fishery.
- At present the fisheries management agency (BFAR) is not known to be subject to any disputes or legal challenges although it remains unclear how these would be addressed, where necessary.
- The fishery-specific BSC-NMP mentions its alignment with the Fisheries Code, although there is little or no mention of MCS mechanisms, sanctions, compliance and systematic non-compliance. Due to the overexploited status of the BSC stock, it is highly likely that the MSC mechanisms are not yet fully effective.
- Within the BSC-NMP, there is a monitoring and evaluation framework. This framework has not been implemented but identifies the necessary roles that the framework will play. These include the development of metrics and monitoring methods to evaluate parts of the fishery-specific management system outlines the parties responsible for carrying out these reviews, as well as the development of an external peer review mechanism for specific programs and projects.

2.1.6 Recommendations

- Provide clarity on the mechanism(s) by which conflict resolution at a national level takes place to ensure it is transparent and effective.
- Provide further details how advice and decisions made by TWG is disseminated to stakeholders and examples of information requests, where available.
- Provide clarity and examples where decision making processes have taken place and how they respond to serious or other important issues.
- Provide further evidence and/or examples how BFAR would respond to any disputes or legal challenges.

- Provide details of current fishery-specific MSC mechanisms, including inspections for undersized and berried crabs, illegal gear etc. and what sanctions have been imposed, for example.
- Present quantitative evidence to show effectiveness of MCS, including data on number of inspections, infringements and successful prosecutions/fines.
- The monitoring and evaluation framework within the BSC-NMP should be implemented to enable peer review of specific fishery programs and projects.

3 Summary of MSC Performance Indicator Scores

In order to understand the progress of the FIP against meeting the MSC standard, a summary of the current likely MSC scores against the original 2015 benchmark is provided in Table 1 below.

	Component	Ы	Performance Indicator	2015	2022
1	1 Outcome		Stock status	<60	60-79
		1.1.2	Stock rebuilding	<60	60-79
	Management	1.2.1	Harvest Strategy	<60	60-79
		1.2.2	Harvest control rules and tools	<60	60-79
		1.2.3	Information and monitoring	<60	60-79
		1.2.4	Assessment of stock status	<60	60-79
2	Primary		Outcome	Trap: <60	Trap: < 60
	species (managed	2.1.1		-	Pot: <60
	bycatch)			Gillnet: <60	Gillnet: <60
			Management	Trap: <60	Trap: < 60
				-	Pot: <60
				Gillnet: <60	Gillnet: <60
				Trap: <60	Trap: < 60
		2.1.3 Informati	Information	-	Pot: <60
				Gillnet: <60	Gillnet: <60
	Secondary	2.2.1	Outcome	Trap: <60	Trap: < 60
	species (non-			-	Pot: <60
	managed			Gillnet: <60	Gillnet: <60
	bycatch)			Trap: <60	Trap: < 60
		2.2.2	Management	-	Pot: <60
				Gillpot: <60	Gillpot: <60

Table 1 Summary of scores for MSC Performance Indicators from original 2015baseline and 2022.

			Onniet. 500	Onnici, soo
		Information	Trap: <60	Trap: < 60
	2.2.3		-	Pot: <60
			Gillnet: <60	Gillnet: <60
ETP species		Outcome	Trap: <60	Trap: < 60
	2.3.1		-	Pot: <60
			Gillnet: <60	Gillnet: <60
	2.3.2	Management	Trap: <60	Trap: < 60
			-	Pot: <60
			Gillnet: <60	Gillnet: <60
	2.3.3	Information	Trap: <60	Trap: < 60

	Component	Ы	Performance Indicator	2015	2022
				-	Pot: <60
				Gillnet: <60	Gillnet: <60
	Habitats			Trap: <60	Trap: < 60
		2.4.1	Outcome	-	Pot: <60
				Gillnet: <60	Gillnet: <60
				Trap: <60	Trap: < 60
		2.4.2	Management	-	Pot: <60
				Gillnet: <60	Gillnet: <60
				Trap: 60-79	Trap: 60-79
		2.4.3	Information	-	Pot: 60-79
				Gillnet: 60- 79	Gillnet: 60- 79
	Ecosystem		Outraama	Trap: <60	Trap: <60
		2.5.1	Outcome	-	Pot: <60
				Gillnet: <60	Gillnet: <60
				Trap: <60	Trap: <60
		2.5.2	Management	-	Pot: <60
				Gillnet: <60	Gillnet: <60
				Trap: <60	Trap: <60
		2.5.3	Information	-	Pot: <60
				Gillnet: <60	Gillnet: <60
3	Governance	3.1.1	Legal and customary framework	60-79	60-79
	and Folicy	3.1.2	Consultation, roles and responsibilities	60-79	≥80
		3.1.3	Long term objectives	60-79	≥80
	Fishery	3.2.1	Fishery specific objectives	≥80	≥80
	management	3.2.2	Decision making processes	<60	60-79
	system	3.2.3	Compliance and enforcement	<60	60-79
		3.2.5	Management performance evaluation	<60	<60

Based on the original pre-assessment conducted in 2015 (MRAG, 2015) there were several MSC Performance Indicators that fell below SG<80. In order to understand the progress of the FIP against meeting the MSC standard, these PIs were revaluated based on the updated information provided in 2022 and February 2023.

Table 2 provides a summary of the likely scoring category (<60, 60-79, \geq 80) for each PI and rationale are provided below based on the updated information provided for the 2022 review. Where no new information was provided the previous rationale used in the 2015 review is cited. Where new information was provided this was included in the rationale if relevant but did not always lead to a corresponding change in score. This review was carried out against v2.01 of the MSC Fisheries Standard and Guidance.

Principle	Component	Performance Indicator		Previous Score [2015]	Current Score [2022]	Rationale or Key Points
1	Outcome	1.1.1	Stock status	<60	60-79	Available evidence suggests that the stock structure of BSC in the Visayan Sea (NSAP Regions 5, 6 and 7) is most probably a single stock (Romero 2009 cited in Silvestre et al., 2020; Anon, 2021). The status of the stock has been assessed using a variety of different methods and data sources in relation to various biological reference points. A surplus production model using historical time series data from 1991-2012 indicates that an effort reduction of 28-33% of the 2012 effort level would be needed to return catch rates to MSY levels. Further, results from a relative yield-per- recruit (Y/R)' assessment indicate the need for reduction in fishing effort by nearly half from the 2018 level and an increase in the length at first capture to 11.5 cm from the current 9.75 cm to avert the risk of recruitment overfishing. Further to this, the current exploitation rate (E = 0.69) leads to a relative biomass per recruit (B/R)' of only about 18% of that at virgin stock level. Preliminary results available from a length-based Bayesian method (LBB) also indicate high exploitation rates and low length at first capture, with low biomass levels (30% of biomass at MSY and only 11% of virgin stock levels), which were

Table 2: Scores and rational against MSC Performance Indicator

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					consistent with other methods indicating substantive overfishing.
					In 2017, a length-based spawning potential ratio (LB-SPR) method was used to indicate the status of the stock in Iloilo (Batad) and Negros Occidental portion of the Visayan sea. The results showed the stock in these regions was below the limit reference point (LRP) (10% SPR) (PACPI, 2020). In contrast, the stock status in Iloilo (Concepcion) and Bantayan Island, Cebu was above LRP (32% SPR and 26% SPR respectively).
					More recently, the status of the stock was estimated based on the Froese indicator (see Froese, 2004) using data collected between 2019 and 2020 (Mondana et al., undated). This showed that 63% of mature crabs are harvested higher than the LRP of 50% but below the TRP of 80%. Further to this, estimation of the exploitation ratio (E) 0.67 year ⁻¹ showed this had breached both the LRP and TRP at 0.50 year ⁻¹ and 0.60 year ⁻¹ respectively, whereas the spawning potential ratio (SPR) of 23% was higher than the LRP at 20% but below the TRP at 30%. Silvestre et al. (2020) concluded that an evaluation of NSAP BSC data from Regions 5, 6 and 7 lacked selectivity and fecundity functions

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					within the current use of SPR method for this region.
					Based on the latest consolidated stock assessment results in calendar year (CY) 2020 by the National Stock Assessment Program (NSAP) implemented by the Bureau of Fisheries and Aquatic Resources (BFAR) Regions 5 (Masbate), 6 (Northern Iloilo, Capiz, Northern Negros Occidental) and 7 (Bantayan Island) under the Fisheries Improvement Program (FIP) of PACPI, increase in annual CPUE is observed for both bottomset gillnet-crabs (BSGNC) and crab pot (CP).
					For BSGNC, in 1990s CPUE was at 0.46 kg/panel (noting that standardized number of panels per area is considered). In the year 2000s where BSC is a primary commodity for export, the CPUE had dropped and was recorded at an annual average of 0.21 kg/panel while recent efforts of BSC management resulted at 0.24 kg/panel in 2019 and 0.29 kg/panel in year 2020. In addition, for the crab pot, annual average of 0.14 kg/pot was recorded from CY 2011 to 2018. More recently in 2019, the CPUE was recorded at 0.17 kg/pot and 0.14 kg/pot in CY 2020.
					Based on the available evidence, the status of the BSC stock in the Visayan Sea is likely to be above the point where recruitment would be

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						impaired (PRI). However, given lack of evidence of any increase in CPUE within the crab pot fishery, for example, further evidence is required to ensure it is highly likely that the stock is above the PRI.
						The results from recent SPR stock assessment and CPUE data do not provide sufficient evidence that the stock is fluctuating around a level consistent with MSY. Overall, the fishery is likely to meet SG60-79 .
						Due to the life history characteristics of BSC (i.e. short-lived, fast growing) and the potential for high recruitment variability, it is recommended to continue stock assessments on a regular basis using up-to-date data sources.
		1.1.2	Stock rebuilding	<60	60-79	A rebuilding strategy is required as the stock status (PI1.1.1 above) does not meet SG80. A rebuilding strategy is outlined in the BSC-NMP (Anon, undated). This describes a framework with biological reference points (LRP and TRP) as well as gear restrictions, minimum catch sizes and a prohibition of catching berried crabs. The framework aims to increase the BSC stock by 10% in 5-years, which is shorter than 2 times its generation time and consistent with the generation time of the BSC (stated in: FMA 11 Provisional reference points).

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						Monitoring is in place through Bureau of Fisheries and Aquatic Resources (BFAR) to determine whether the rebuilding strategies are effective in rebuilding the stock in the Visayan Sea within the specified timeframe using updated stock assessments.
						It is not clear however, that the rebuilding strategies are rebuilding stocks to MSY , or it is likely based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the specified timeframe . Further to this, it is not clear in the BSC-NMP that stock enhancement methods are not planned to be used routinely as part of the rebuilding strategy. Overall the fishery is likely to meet SG60-79 .
						A harvest strategy has been developed by the Scientific Advisory Group (SAG) of FMA 11, outlining a number of input controls such as minimum landing size, fishing gear mesh size limits and prohibition of landing berried females.
	Management	1.2.1	Harvest Strategy	<60	SG60-79	The harvest strategy is expected to achieve stock management objectives reflected in PI 1.1.1 to meet SG60 and the elements of the harvest strategy work together towards achieving stock management objectives reflected in PI 1.1.1 SG80. However, there is little or no evidence to demonstrate the harvest

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						strategy is responsive to the state of the stock to meet SG80.
						The harvest strategy is likely to work based on plausible argument and although it may not have been fully tested some evidence exists that it is achieving its objectives (e.g. reduction in catching small sized crabs implemented by Local Government Units through crab processors, increase in CPUE from bottom-set gill nets).
						Since 2019, a frame survey using a total of 36 monitoring sites has been established throughout the Visayan Sea region. These continue to monitor a range of data to support the harvest strategy, including daily catch landings, individual length-weight, as well as reproductive biology studies. These activities are expected to help determine whether the harvest strategy is working. Here it is also important to understand the level of monitoring and the effectiveness of the crab banks and other management measures across the region.
						Overall, the fishery is likely to meet SG60-79 .
		1.2.2	Harvest control rules and tools	<60	60-79	The harvest control rules (HCR) are explicitly outlined for FMA 11 under 3 scenarios that describe changes in fishing effort in relation to various biological reference points. These can be described as well-defined although they are

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					currently not in place or available ¹ that ensure that the exploitation rate is reduced as the PRI is approached and are expected to keep the stock fluctuating around the target level consistent with (or above) MSY.
					To date, several HCRs have been recommended to the FMA 11 Management Board. These include the reduction of effort per operation per gear. This initiative is currently lodged in the proposed implementation of Adopt-A-Village platform as reduction of effort and other fisheries management initiatives need social preparation for voluntary compliance. In addition, the revision of BSC NMP has been approved and implemented for roll-out in pilot areas to ensure strategies of voluntary compliance before making it mandatory. A declaration for a closed season and BSC MPA were already pipelined in the proposed platform of roll-out starting this CY 2023.
					It is not clear if the HCRs outlined are likely to be robust to the main uncertainties to meet SG80

¹ Under MSC scoring guidelines SA2.5.2, HCRs may only be deemed **available** in cases where stock biomass has not previously been reduced below MSY level or where B_{MSY} estimates are not available the stock has been maintained to date by the measures in use at levels that have not significantly over time. Further to this, **available** HCRs should only be recognized as **expected to reduce the exploitation rate as the point of recruitment impairment is approached** only in cases where HCRs are effectively used in some other UoAs, that are under the control of the same management body and of a similar size and scale as the UoA or an agreement or framework is in place that requires the management body to adopt HCRs before the stock declines below B_{MSY}.

Principle	Component	Perfo	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						such as high recruitment variability etc. Recruitment variability strategies will be streamlined for implementation in the BSC FMP pilot roll-out. Specific actions such as spatio- temporal closures, including protections of BSC spawning areas are proposed but will first require social preparation. This approach will be supported by a vessel tracking device.
						Further to this, one indicator of stock status is used to determine the target reference point (20% SPR) and also limit reference point (<20% SPR). Fluctuations around this indicator can lead to uncertainties in the desired level of fishing effort.
						There is some evidence that the tools used or available to implement HCRs are appropriate and effective in controlling exploitation to meet SG60. It also remains uncertain if the HCRs are sufficient to rebuild the stock within the given timeframe and keep it fluctuating around MSY. Overall the fishery is likely to meet SG60-79 .
		1.2.3	Information and monitoring	<60	60-79	Some relevant information has been obtained to determine the likely stock structure or management unit (e.g. Ramon, 2009; Anon, 2021). In addition, the NSAP provides information and data on stock productivity and other data to support the harvest strategy, including biological information (e.g. size at

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					capture, maturity) and fisheries statistics (catch and effort).
					Some relevant information is available on the fleet composition (e.g. number of vessels by gear type), although limited information is available to demonstrate catches by vessel size and gear type. With the support of the BFAR USAID Fish Right Project, a gear inventory was conducted in 2018 with a follow-up activity scheduled in 2023. It is recommended to present the results of the gear inventory by active vessel size (or class).
					Stock abundance is monitored by NSAP, that collect monthly data from 48 landing sites since 2015 on of landings, effort, species and size composition by gear type contributing to the BSC database. One of the aims of the program is to support the Bureau of Fisheries and Aquatic resources (BFAR) in the production of BSC fisheries statistics (Silvestre et al., 2020).
					Mesa et al. (2018) carried out an assessment of the biology of BSC caught in the Western Visayan Sea to provide a baseline for the implementation of the BSC NMP. The information collated included a fishing gear inventory, annual harvest and CPUE, species abundance and monthly seasonality, reproductive biology and population parameters.

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					There are good data on all sources of other fishery removals (data are available on the volume of total production Yap et al., 2020), but there is limited or no available evidence to show level of removals are monitored by vessels and gear covered under the UoA to support the HCRs. This is planned to be included under a new pilot to be rolled out under the BSC NMP in selected areas. These data important to implement HCRs based on fishing effort within the UoA.
					According to Fisheries Administrative Order (FAO) No. 263 – 2019 each FMA management body shall submit an annual report outlining the policies and measures and status of the fisheries within the FMA, inclusive of BSC. The indicators to be reported are not stated, however since 2017 there have been annual stock assessments which have reported the following biological indicators: CPUE and LB-SPR. This indicates that at least one indicator is available and monitored with sufficient frequency to support the harvest control rule. Overall the BSC fishery is likely to meet SG60- 79 .

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
		1.2.4	Assessment of stock status	<60	60-79	Silvestre et al. (2020) outlines a number of data limited stock assessment methods that were reviewed to determine the status of the stock. Surplus production models (Schaefer, 1957 and Fox, 1970) were applied to BSC catch and effort data for the years 1991-1995, 2011 and 2012 (Mesa et al., 2018). The approach assumes that the catch rates from monitoring activities conducted in Region 6 is representative and reflects the abundance of the stock impacted by the combined fishing effort from Regions 5, 6, and 7 (during the years 1991-1995, 2011, and 2012). Further to this, the relative yield per recruit (Y/R)' analysis was done using parameters derived from 2018 NSAP Region 6 length frequency data for the Visayan Sea BSC stock. This was used to calculate an exploitation reference point (E _{0.5}). These methods, however, estimate stock status relative to generic reference points appropriate to BSC (SG60) . More recently, annual length-frequency data from Region 6 combined from several gears for the period 2014-2018 inclusive were used in a length-based Bayesian (LBB) model (Froese et al., 2016). This method only requires representative length frequency data as an input and requires no information on age, maturity, selectivity, recruitment, growth, effort, or mortality. Results used annual length-frequency

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					data combined from several gears for the period 2014-2018 inclusive from Region 6 only. This method provides an estimate of current stock biomass relative to reference points appropriate to the stock (SG80) - virgin stock biomass (B/B ₀) and current biomass relative to biomass producing MSY (B/B _{MSY}). However, it is noted estimation of biomass in relation to these biological reference points are not used in the HCR, and cannot therefore be deemed 'appropriate'. This Bayesian method is capable of taking uncertainty into account (SG80), although the available evidence does not explicitly demonstrate this nor does it evaluate stock status relative to reference points in a probabilistic way. The LBB results are considered preliminary and the assessment of stock status does not appear to have been subject to peer review (SG80) .
					While the methods presented are sufficient to meet SG60, the preliminary nature of the results generated from newer analytical methods such as LBB do not yet provide sufficient evidence to meet SG80. Overall the fishery is likely to meet SG60-79 . While stock assessment methods continue to advance, it is recommended that approved method(s) used to assess the status of the stock are (i) appropriate to the HCR, (ii)

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						clearly demonstrate how uncertainty is taken into account and (iii) subject to peer review.
						Primary species are those species in the catch that are (i) not covered under Principle 1, (ii) species that are within scope of the MSC and (iii) where management tools and measures are in place, intended to achieve stock management objectives reflected in either limit or target reference points (MSC FCR SA3.1.3).
2	Primary species	2.1.1	Outcome	Gillnet: <60	Gillnet: <60 Crab trap: <60	To date, primary and secondary species have not been identified. Available catch composition data provides some indication on which species are likely to classified as major (i.e. >5% or more by weight of the total catch) or minor.
				Crab trap: <60	Crab pot: <60	Based on available information, the target species <i>P. pelagicus</i> makes up the majority of the catch in both the entangling gillnet and crab trap fishery. For example, data from the Western Visayan Sea between 2011-2012 show high proportions of 51.11% and 87.37% for BSC in catches from gillnets and traps, respectively (Mesa <i>et al.</i> , 2018). All remaining catches are considered bycatch species. This is broadly in line with previous estimate of around 58% by Ingles and Flores (2000) reporting in the original pre-assessment.

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					To facilitate determination of main and minor species, it is not clear if reported species proportions (% of total) are calculated based on weight or number (MSC FCR SA3.4.2). All other species that contribute to the catch composition are <10% in gillnets and <7% for crab traps (Mesa <i>et al.</i> , 2018).
					According to the reported catch composition by Mesa <i>et al.</i> (2018), in the gillnet fishery , three species could be classified as major: <i>Rastrelliger</i> <i>kanagurta</i> (Indian mackerel) (9.52%), <i>R.</i> <i>brachysoma</i> (short mackerel) (8.01%) and <i>Encrasicholina heteroloba</i> (shorthead anchovy) (6.13%). All three are listed as key LTL species according to the MSC Box SA1. For the crab trap catch composition, only <i>Charybdis feriata</i> (crucifix crab) contributes to >5% of the catch composition and would be considered a main species. All of these species are of commercial value and are likely to be retained.
					Further to this, Mainye <i>et al.</i> , (2018) carried out an assessment of bycatch in BSC crab trap and gillnet fisheries in Northwest Bantayan Island, Cebu between April and August 2017. The results of this research are reported to a high taxonomic level giving little inference of the volume or proportion of species caught by gear.

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					More recently, the Visayan Sea 2020 BSC stock assessment study reported 91.8% of the volume landed was for BSC with 8% bycatch, which included 3.7% finfish and 3.1% other crustacean. Comparatively, bycatch from the crab pot fishery was 83.8% BSC and 16.2% bycatch, including 1% finfish and 15.1% other crustacean.
					There is no information regarding the stock status for primary species other than <i>P. pelagicus</i> from the documents provided for this review.
					As a data-limited fishery, a PSA under the MSC RBF can be used to score primary species outcome status for all main species (MSC FCR Annex PF). An RBF assessment for primary species has been planned under the FIP workplan. Until such time the results of the RBF are available for review, the fishery is unlikely meets SG60 for entangling gillnet and crab traps/pots.
					It is recommended that all bycatch species are classified as either primary and secondary species and either main or minor. In addition, information on the total weight by species, as well as proportion of the total weight is given to determine if the catch of one or more species is considered exceptionally large to be considered a main species.

Principle	Component	Performance Indicator		Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						Primary species (managed bycatch) have not been identified at this time for both gear types under UoA, and prohibits development of appropriate measures or partial strategy to maintain the stocks of these species above the point of recruitment impairment (PRI).
		2.1.2	Management strategy	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pot: <60	It is noted however, a task given for the improvement of this performance indicator is not due to be completed until the end of 2024. As a result, there is a lack of evidence to determine whether (i) measures/partial strategy is in place for the UoA (ii) there is some objective basis for confidence that the measures/strategy will work and (iii) evidence that the measures/partial strategy is being implemented successfully.
						To date, based on the current available evidence, the fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots .
		2.1.3 Information	Information	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pot: <60	To date, there is a lack of qualitative, quantitative and up-to-date information to adequately assess the impact of the UoA on all of the primary species. There is no evidence of the measures taken to manage the primary species therefore information to support this is also absent.
						If the RBF is used to score PI 2.1.1 for the UoA, some quantitative information is available and adequate to assess productivity and

Principle	Component	Performance Indicator		Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						susceptibility attributes for main primary species . Further to this, following identification of all main species retained for each gear type, consideration must be taken to determine if information is adequate to support measures/partial strategy to manage main primary species.
						Without the results of the PSA available, the fishery currently fails to meet SG60 for both entangling gillnet and crab traps.
						Several bycatch studies have been reported under PI2.1.1. The results, however, do not explicitly identify main and minor secondary species and no information on the stock status of secondary species is available for review at this time.
	Secondary species	2.2.1	Outcome	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pot: <60	As a data-limited fishery, a PSA under the MSC RBF can be used to score secondary species outcome status for all main species (MSC FCR Annex PF). An RBF assessment for primary species has been planned under the FIP workplan. Until such time the results of the RBF are available for review, the fishery is unlikely meets SG60 for entangling gillnet and crab traps/pots.
						It is recommended that all bycatch species are classified as either primary and secondary species and either main or minor. In addition.

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						information on the total weight by species , as well as proportion of the total weight is given to determine if the catch of one or more species is considered exceptionally large to be considered a main species.
		2.2.2	Management strategy	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pots: <60	Secondary species have not been identified at this time that prohibits development of appropriate management strategies to maintain the stocks of these species above the point of recruitment impairment (PRI). The BSC-NMP 2020 rarely mentions bycatch and the measures taken to mitigate and minimize it. Similar to primary species, a task given for the improvement of this performance indicator is not due to be completed until the end of 2024. As a result, there is a lack of evidence to determine whether (i) measures/partial strategy is in place for the UoA (ii) there is some objective basis for confidence that the measures/strategy will work and (iii) evidence that the measures/partial strategy is being implemented successfully. To date, based on the current available evidence, the fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots .
		2.2.3	Information	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60	There is an absence of information provided that is adequate to estimate the impact of the UoA on the secondary species. The bycatch study that

Principle	Component	Performance Indicator		Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					Crab pot: <60	was carried out by Mainye et al. (2018) gives basic information on the abundance of different species caught by gillnets and crab traps in the dry and wet season. This information is not, however, related to the status of the species.
						If the RBF is used to score PI 2.2.1 for the UoA, some quantitative information is available and is adequate to assess productivity and susceptibility attributes for main secondary species. Further to this, following identification of all main species retained for each gear type, consideration must be taken to determine if information is adequate to support measures/partial strategy to manage main secondary species.
						Without the results of the PSA available, the fishery currently fails to meet SG60 for entangling gillnet and crab traps/pots.
	ETP species	2.3.1	Outcome	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pot: <60	Historical data collected from 2011-2012 showed that 2.14% of the annual catch composition consists of <i>Aetobatus narinari</i> (spotted eagle ray) in the BSC gillnet fishery of the Western Visayan Sea (Mesa <i>et al.</i> , 2018). Eagle rays are listed as endangered (Dulvy <i>et al.</i> , 2021) and are included in Appendix I of CITES, however there is a lack of information regarding the known direct and indirect effects of the UoA on the species. The original 2015 pre-assessment highlights a range

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						of other ETP species interactions with entangling gillnets targeting BSC (MRAG, 2015). As a data-limited fishery, a PSA under the MSC RBF can be used to score ETP species outcome (MSC FCR Annex PF). An RBF assessment for ETP species has been planned under the FIP workplan. Until such time the results of the RBF are available for review, the fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots.
		2.3.2	Management strategy	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pot: <60	The Philippine Fisheries Code of 1988 states that endangered, threatened and protected (ETP) species under national legislation are those that are listed in the Convention on International Trade in Endangered Species (CITES). It also prohibits the removal of all ETP species where violation shall be punished by imprisonment of twelve (12) years to twenty (20) years and/or a fine of One hundred and twenty thousand pesos (P120,000.00) and forfeiture of the catch, and the cancellation of fishing permit.
						The BSC-NMP 2020-2024 mentions the necessity for the modernization of the industry, including the adoption of gear types and technologies that minimize the catch of ETP species. There is, however, no explicit mention of any of the measures or a strategy that are currently in place or will be in place to avoid or

Principle	Component	Performance Indicator		Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						hinder the recovery of ETP species, and are designed to be highly likely to achieve national and international requirements. Furthermore, there is no objective basis for confidence that the partial strategy/strategy will work based on information directly about the UoA or that there is evidence to demonstrate the partial strategy/strategy is being implemented successfully. Finally, there is no evidence that there is a regular review of the potential effectiveness of alternative measures to minimize UoA-related mortality of ETP species. Based on the available evidence, fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots. It is recommended following the results of the RBF, to review what
		2.3.3	Information	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pot: <60	measures or strategy is required to manage ETP species within the UoA. There is quantitative information on bycatch species from both Mainye <i>et al.</i> (2018) and Mesa <i>et al.</i> (2018). The information reported by Mesa <i>et al.</i> 2018 gives the proportional catch composition by gear type for the top 10 species caught, however this is from data obtained between 2011 and 2012. Mainye <i>et al.</i> (2018) report the total abundance of all species caught by gear type and by season (wet vs dry) however the sample size is small. Both these

Principle	Component	Performance Indicator		Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						sources give limited information to assess the impact the UoA has on ETP species.
						If the RBF is used to score PI 2.3.1 for the UoA, some quantitative information is available and is adequate to assess productivity and susceptibility attributes for ETP species . Further to this, following identification of all ETP species retained for each gear type, consideration must be taken to determine if information is adequate to support measures/strategy to manage impacts on ETP species.
						Without the results of the PSA available, the fishery currently fails to meet SG60 for entangling gillnet and crab traps/pots.
	Habitats	2.4.1	Outcome	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60	There is little or no information relating to the benthic substrate of the fishing grounds within the UoA. BSC inhabit sandy, muddy, algal and seagrass habitats that are near to reefs and mangroves. The UoA is unlikely to have an impact on sandy or muddy habitats but seagrasses, mangroves and coral reefs are all vulnerable marine ecosystems (VME).
					Crab pot: <60	Crab traps are likely to have less of an impact than gillnets however, more information is needed to be able to assess the effect of the UoA on the structure and function of the commonly encountered habitats.

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						As a data-limited fishery, a Consequence Spatial Analysis (CSA) under the MSC RBF can be used to score the habitat component in relation to the effects of the UoA on the structure and function of the habitats impacts by the UoA (MSC FCR SA3.13.1). An RBF assessment for habitat impacts has been planned under the FIP workplan. Until such time the results of the RBF are available for review, the fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots.
						At a national level, the Chapter IV of Philippines Fisheries Code (Republic Act No. 8550) states that at least 25% but not more than 40% of bays, foreshore lands, continental shelf or any fishing ground should be set aside for mangrove cultivation to strengthen habitats and spawning grounds for fish.
		2.4.2	Management strategy	Gillnet: <60 Crab trap: <60	Crab trap: <60 Crab pot: <60	The Northern Iloilo Alliance for Development (NIAD), an alliance of ten Local Government Units (LGUs) in the province of Iloilo, namely Barotac Viejo, Ajuy, Concepcion, San Dionisio, Sara, San Enrique, Batad, Balasan, Estancia and Carles has adopted the MPA Network (MPAN) Design from September 15, 2022 in Iloilo City. The MPAN Design covers the mangrove, coral reef areas and particularly the seagrass areas that serves as habitat of BSC. It is unclear if this will be extended to other areas

Principle	Component	Performance Indicator		Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						in Visayan Sea to cover the entire Unit of Assessment. Whilst there are limited or no other management strategies currently in place, a number of planned tasks are due to be completed mid- 2024. These should provide evidence necessary to support development of a partial strategy , that will provide some objective basis for confidence that the partial strategy will work, and there is some quantitative evidence that the partial strategy is being implemented successfully. Until further evidence is available for review the fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots. It is recommended following the results of the RBF, to review what measures or strategy is required to manage habitats within the UoA.
		2.4.3	Information	Gillnet: 60-79 Crab trap: 60- 79	Gillnet: 60-79 Crab trap: 60- 79 Crab pot: 60-79	From the documents provided, there is little or no information related to the habitat types and distribution of them within the UoA. Without knowing the habitat types, it is not possible to assess the impact of the UoA for the crab trap/pots and gillnet fishery. The original MSC pre-assessment indicated that available information was available to give a broad understanding of habitat types and the impacts on these. However, detailed information

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						regarding the distribution of the main habitats (i.e. habitat mapping) and spatial attributes of habitat and fishing gear is lacking (MRAG, 2015). No further information has been presented for this review.
						While it appears little or no information has been collected to date, one of the BSC-NMP short term objectives is to conduct resource mapping and impact assessments of the UoA on the surrounding habitats and ecosystem. Further to this, if the RBF is used to score PI 2.4.1 for the UoA, some quantitative information must be available and is adequate to estimate the consequence and spatial attributes as well as assess the types and distribution of main habitat types. In addition to this, adequate information must continue to be collected to be collected to detect any increase in risk to the main habitat types. Without the results of the CSA available, the fishery is unlikely to meet SG80 for entangling gillnet and crab traps/pots .
	Ecosystem	2.5.1	Outcome	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pot: <60	As a data-limited fishery, a SICA can be performed under the MSC RBF to score Ecosystem outcome PI 2.5.1 (MSC FCR Annex PF). An RBF assessment for Ecosystem outcome has been planned under the FIP workplan. To date, a set of results from a SICA

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					has been presented as a table, concluding the results meet a consequence score of 80. While the full report and stakeholder analysis is not available for review the results showed all categories were high risk (score = 6):
					Under MSC FCR GPF8.7.4, it states that if the scale and intensity are scored as medium or high risk, additional information would need to be used to rationalise a low or medium risk score for consequence. This information is not yet available for review.
					Further to this, stakeholder perception should be combined with additional qualitative and quantitative information to support the consequence score . Without such information, the consequence score should be scored as high risk, and the fishery would fail in such instances.
					GPF8.7.4.1: Where attributes have been defaulted to "high risk" because of a lack of information, these risk scores could be reduced if additional studies revealed the risk level was actually lower. For example, if the SICA results in a consequence score of 80 but additional information is available and presented that justifies raising this score, a final MSC score of 85 may be given. To date, no further information is available for review until the end of 2023.

Principle	Component	Performance Indicator		Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						Until such time all the results of the RBF are available, the fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots.
	2	2.5.2 Management strategy			During the initial stages of the BSC FIP action plan, a gear swap of bottom set gillnet to crab pot has been initiated by BFAR6.It is not clear however, how successful this has been or whether it is likely to be extended to other regions.	
			Management strategy	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60	To date there are few or no measures or partial strategy is in place. Within the workplan, there is an action to be completed by 2023 to investigate the impacts of the fishery to the ecosystem and identify appropriate measures to prevent irreversible risks.
					Crab pot: <60	The results of the action are not available for review at this time but to meet SG80 must provide evidence necessary to support development of a partial strategy , that will take into account available information and is expected to restrain impacts of the UoA on the ecosystem . The analysis should also provide some objective basis for confidence that the partial strategy will work, and there is tested and evaluated artificial production strategy with sufficient monitoring in place and

Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					evidence is available to reasonably ensure with high likelihood that the strategy is effective.
					As part of the kick-off activities under the BSC FIP includes an initiative of BFAR6 on gear swap of bottom set gillnet to crab pot.
					Until further evidence is available for review the fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots. It is recommended following the results of the RBF, to review what measures or strategy is required to manage ecosystem impacts within the UoA.
					One of the short-term goals within BSC-NMP 2020-2024 requires resource mapping and impact assessments of the fishery on the ecosystem as well as promoting the use of 'eco-friendly' gear types.
	2.5.3	Information	Gillnet: <60 Crab trap: <60	Gillnet: <60 Crab trap: <60 Crab pot: <60	While the results of the workplan action to 'investigate the impacts of the fishery to the ecosystem and identify appropriate measures to prevent irreversible risks' are not yet available for review, these will need to be assessed to ensure information is adequate to help broadly understand the key elements of the ecosystem. Further to this, the results will need to demonstrate the main impacts of the UoA and associated enhancement activities on these key
	Component	Component Perf	Component Performance Indicator Image: Component in the second	Component Performance Indicator Previous Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Image: Score [2015] Im	Component Performance Indicator Previous Score [2015] Current Score [2022] Image: Score [2015] Image: Scor

Principle	Component	Perfo	rmance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						existing information, and some have been investigated in detail.
						More specifically, the workplan task to 'study the trophic impact and the likelihood of cascades from the blue swimming crab fishery' is expected to help ensure the main functions of the components of the ecosystem are known . However, results will need to be assessed to ensure information is available on the impacts of the UoA and associated enhancement activities on these components to allow some of the main consequences or the ecosystem to be inferred and that adequate data continue to be collected to detect any increase in risk level.
						Overall, without the results of the workplan action at this time, the fishery is unlikely to meet SG60 for entangling gillnet and crab traps/pots .
3	Governance and Policy	3.1.1	Legal and customary framework	60-79	60-79	The BSC-NMP 2021-2025 exists within a national legal system and a framework for cooperation (SG60) with other parties that specifies the delivery of the development, management and conservation of the fishery (Yap <i>et al.</i> , 2020). This includes the Philippines Fisheries Code of 1998 (RA No. 8550), and Act to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated fishing 2015 (RA No. 10654), Fisheries Decree of 1975 (PD No.

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					704) and the Philippine Environmental Policy of 1977 (PD No. 1151). There are 12 different Fisheries Administrative Orders (FAOs) from the Bureau of Fisheries and Aquatic Resources (BFAR) which include the establishment of Fisheries Management Areas (FMAs), the ban of fishing with active gears and guidelines on the creation of Fisheries and Aquatic Resources management Councils (FARMCs). The Fisheries Code stipulations are consistent with MSC Principles 1 and 2.
					Within the management system, a technical working group exists which includes a coalition of stakeholder parties within the BSC industry responsible for the development and implementation of the BSC management plan. These parties can be considered organized (SG80) and have binding procedures including multiple Memorandums of Agreement such as those between the Philippine Association of Crab Processors, Inc (PACPI) and BFAR, the Provincial Government of Bohol, PACPI and United States Agency for International Development (USAID). However, due to the current status of the BSC stock, there is little or no evidence to show whether the cooperation is effective (SG80) to deliver management outcomes consistent with MSC Principles 1 and 2.

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					Within the BSC-NMP, it states that one of the duties of the management system is to formulate guidelines that will facilitate resolution of legal disputes . A national law to a transparent mechanism (SG80) exists on the implementation of enforcement of fisheries laws, rules and regulations specifically on blue swimming crab which regulate the catching of under size and berried crabs, (JOINT BFAR -DA-DILG Admin Order 01-2014 approved on January 26, 2014). All cases involving catching berried crabs or undersize crabs are lodged within the Philippines if there are substantial evidence. With limited records available due to the level of compliance, it is difficult to determine if the mechanism in place is considered effective to resolve legal disputes (SG80). It is recommended to gather further evidence on how any fisheries legal disputes are resolved.
					The Philippines Fisheries Code of 1998 has a stipulation to observe the protection of the rights of fishers (SG80) and limiting access to the fishery resources of the country for the exclusive use and enjoyment of Filipinos. This demonstrates a formal commitment through a mandated legal basis where rights are fully codified within the fishery management system

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						consistent with the objectives of MSC Principles 1 and 2.
						Overall the fishery is likely to perform well against the MSC standard. However, due to the lack of clear evidence on a couple of scoring issues raised above, the fishery is currently likely to meet SG60-79 .
						At a national level, The Fisheries Code identifies clear roles and responsibilities for BFAR. Within the BSC-NMP the roles and responsibilities of each member of the council are explicitly defined and well understood for key areas , as well as the roles for each agency that is involved within the management plan.
		3.1.2	Consultation, roles and responsibilities	60-79	<u>≥</u> 80	The development of the BSC-NMP 2021-2025 included several national consultation processes. The consultations included the different stakeholders and enablers of the BSC supply chain in the Philippines to help identify the problems effecting the BSC industry in the country. They also transformed Problem Trees into Solution Trees to help inform the vision, goals and objectives of the industry for the next 5-years.
						A Technical Working Group has been established for the implementation of the JAO No.1,S of 2014. Available evidence demonstrates the TWG

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						continue to meet and regularly seek and accept relevant information, including a demonstration how the information obtained has been considered for management.
						There are Fisheries and Aquatic Resources Management Councils (FARMC) at the national, provincial and municipal levels providing the opportunity for stakeholders to be involved management of the fishery.
						Overall the fishery is likely to perform well against the MSC standard and meet >SG80 .
		3.1.3	Long term objectives	60-79	<u>≥</u> 80	The national long-term objectives of the fisheries industry are explicitly laid out in the Fisheries Code of 1988 and align with the MSC Fisheries Standard . They include the achievement of food security through the optimum management, development and conservation of the fishery resources; protecting the rights of local fisherfolk whilst supporting the fisheries sector; and adopting the precautionary approach to the management of fishery and aquatic resources in alignment with the ecosystem approach to guide decision making within fisheries management.
						In conclusion, the fishery is likely to meet SG80. However there is a lack of evidence to

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						demonstrate these are required by management policy to meet SG100.
	Fishery specific management svstem	3.2.1	Fishery specific objectives	<u>≥</u> 80	<u>≥</u> 80	The BSC-NMP explicitly mentions both long- term and short-term objectives . Both the long and short-term objectives are consistent with the outcomes expressed by MSC Principles 1 and 2 , these includes maintaining the sustainability of the resource, maintaining the catch and effort and to develop breeding and hatchery technology as well as implementing management measures to protect juvenile and gravid crabs. The long-term objective is to sustainably institutionalize sustainable fisheries management at all levels across the country. Overall the fishery is likely to meet SG80 or above, however for some objectives, there is a
						lack of evidence to demonstrate that the objectives are measurable .
		3.2.2	Decision making processes	<60	60-79	The BSC-NMP establishes the need for a decision-making process (SG80) and highlights that the BSC Council will act as the decision-making body for the establishment of new national policies. The plan itself is proposed to serve as a decision support platform for the crafting of plans specific to BSC for FMAs. The first cycle of the plan is to create a base map to improve the decision making processes for fishery sustainability.

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					The BSC-NMP and the BSC Council can respond to serious or other important issues through the National Fisheries and Aquatic Resource Management Council (NFARMC). Here issues can be considered and, where necessary, included within a Fisheries Administrative Order or RA 10654. In addition, BSC initiatives will be discussed and rolled out at the Fisheries Management Area (FMA) level specially with FMA 11 so that it could have a good foundational support prior to endorsement by the BSC Council.
					Although the use of a precautionary approach to management is mentioned as part of the NSAP there is a lack of clarity in its application within the BSC-NMP to meet SG80. Similarly, in FAO 263 it mentions that the scientific advisory group must maintain transparency in their studies although this is not explicit within the BSC-NMP.
					There is some information available related to the fishery's performance and management action , which operates at a grass roots (fishing village) level. Information could be scaled down through BFAR and to Municipal Agriculture Office through their Fishery Technicians and Barangay Fisheries and Aquatic Resource Management Council (BFARMCs). Use of social media technology can also be used to provide

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					explanations for any actions or lack of actions taken to manage the fishery.
					At present the fisheries management agency (BFAR) is not known to be subject to any disputes or legal challenges (SG80).
					As a government agency, BFAR has performed well of its functions and responsibilities for several decades and it has not received any legal complaints. Should BFAR face any legal challenges or complaint, the Office of Solicitor General will stand as its lawyer. In terms of BSC legal matters, this will be dealt first at the local government level since the fishery is under their jurisdiction under Republic Act 7160 on the Local Government Code while BFAR extends technical services to support the Local Government Unit. Given the implementation of Fisheries Administrative Order (FAO) 263 on a Fisheries Management Area, any complaints will be dealt with by the FMA Management Board composed of bodies including LGU representatives
					Overall, the fishery is likely to meet SG60-79 . To ensure the fishery meets SG80, it is recommended to elaborate further and provide examples how the precautionary approach has been used. The specific action of refining the BSC management plan to include provisions on

Principle	Component	Perf	ormance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
						the decision-making process is not due to be completed until the end of 2024.
		3.2.3	Compliance and enforcement	<60	60-79	A monitoring, control and surveillance system has been implemented in the fishery. MCS activities are implemented in partnership with several agencies, including Regional Inter- Agency Taskforce for IUU fishing. This has demonstrated an ability to enforce relevant management measures, strategies and/or rules sufficient to meet SG80. For example, evidence from BFAR 6 Fisheries Protection and Law Enforcement Group (FPLEG) shows a total of seventy-one (71) landing denials and ninety-one (91) market denials conducted in 2018-2020. Reports of the FPLEG showed that no berried and undersized or juvenile Blue Swimming Crabs were observed. The Joint Administrative Order (JAO) 01 series of 2015 on the conservation of BSC is part of the legal framework of the BSC NMP. The JAO includes mechanisms, compliance, and sanctions in case of violations . There is limited evidence, however, to demonstrate that sanctions are consistently applied and thought to provide an effective deterrence to meet SG80 Some evidence exists to demonstrate that fishers comply with the management system.

Principle	Component	Performan	Performance Indicator		Current Score [2022]	Rationale or Key Points
						However, due to the overexploited status of the BSC stock, it is likely that the MSC mechanisms are not yet fully effective. Fishers are generally thought to comply with the management system by providing catch data and supporting rebuilding initiatives.
						Historically, there has been reported systematic non-compliance of fisheries management measures, including capture or undersized crabs and berried females. Whilst there is growing evidence on increased levels of compliance, it is recommended to provide further information on the annual number of inspections, infringements (by type) and number of prosecutions to help demonstrate trends in compliance. Overall, the fishery is likely to meet SG60-79. It must be noted that the specific action related to the refinement of the BSC management plan to include provisions of MCS is not due to be completed until the end of 2024.
		Mana 3.2.4 perfor evalu	igement rmance ation	<60	<60	Within the BSC-NMP, there is a monitoring and evaluation framework. This framework has not been implemented but this section of the management plan identifies the necessary roles that the framework will play. These include the development of indicator metrics and monitoring methods to evaluate parts of the fishery-

Principle	Component	Performance Indicator	Previous Score [2015]	Current Score [2022]	Rationale or Key Points
					specific management system . It also outlines the parties responsible for carrying out these reviews, as well as the development of an external peer review mechanism for specific programs and projects.
					Overall, the fishery is unlikely to meet SG60 because of the lack of implementation of the monitoring and evaluation framework. The specific action to refine the BSC-NMP for the provision of a monitoring and evaluation system is not due to be completed until the end of 2024. It should be noted here that a FIP review cannot form part of the evaluation, and external mechanisms should be in place to assess management performance.

4 Environmental Workplan Results

This section of the report provides details on the progress made towards specific MSC Performance Indicators based on various activities and milestones outlined in the FIP Action Plan. This review is based on updated information provided by the client in 2022. Limited remote stakeholder consultation was undertaken for this review. **Error! Reference source not found.** provides an overview of the progress of each milestone (see Annex 1), also referred to as Tasks within FIP Workplan.

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Status in 2023
1.1 Conduct stock assessment in Danajon Reef, Bohol using SPR assessment method towards sustainable blue swimming crab management in the Philippines (MS1)	Improve data collection and conduct of stock assessments	1.1.1 1.1.2 1.2.4	Milestone 1 is complete.
1.2 Collaborate with BFAR for stock assessment data obtained under its National Stock Assessment Program (MS2)	Improve data collection and conduct of stock assessments	1.1.1 1.1.2 1.2.4	Milestone 2 is ongoing. Completion date expected Q4 2024. Based on the available evidence, the status of the BSC stock in the Visayan Sea is likely to be above the point where recruitment would be impaired (PRI) to meet SG60. However, given lack of evidence of any increase in CPUE within the crab pot fishery, for example, further evidence is required to ensure it is highly likely that the stock is above the PRI. The results from recent SPR stock assessment and CPUE data do not provide sufficient evidence that the stock is fluctuating around a level consistent with MSY to meet SG80.
1.3 SPR assessment of blue swimming crab in	Improve data collection and conduct of stock assessments	1.1.1 1.1.2 1.2.4	Milestone 3 is complete.

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Status in 2023
Bantayan Island, Cebu (MS3)			
1.4 Collaborate with BFAR for the stock assessment for blue swimming crab (MS4)	Improve data collection and conduct of stock assessments	1.1.1 1.1.2 1.2.4	Milestone 4 is ongoing. Completion date expected Q4 2023.
1.5 Population genetics of Philippine blue swimming crab (MS5)	Improve data collection and conduct of stock assessments	1.1.1 1.1.2 1.2.4	Milestone 5 complete. Preliminary results only, full report not available for review.
1.6 Installation of holding cages (MS6)	Implement rebuilding strategies	1.1.3	Milestone 6 is ongoing. Completion date expected Q4 2023.
1.7 Stock enhancement using hatchery-bred crab juveniles (MS7)	Implement rebuilding strategies	1.1.3	Milestone 7 is ongoing. Completion date expected Q4 2024.
1.8 Monitoring and impact assessment of stock enhancement (MS8)	Implement rebuilding strategies	1.1.3	Milestone 8 is incomplete. Progress report showing monitoring sheet and release schedule. Information available does not yet fully determine the effectiveness of cages or hatcheries. Report conclusions recommend "to continue the BSC stock enhancement activity to be partnered with catch monitoring program in order to complete a full year or more observation in order to assess extensively the current status of BSC fishery in Danajon Bank."
1.9 Pilot-testing of Thai- style hatchery technology (MS9)	Implement rebuilding strategies	1.1.3	Milestone 9 incomplete. Originally due Q1 2022 Description of project only, no final report or results presented for review.

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Status in 2023
1.10 Determine the effectiveness of holding cages and Thai- style hatchery in contributing PI1.1.1 to rebuilding BSC stocks through a simulation model (MS10)	Implement rebuilding strategies	1.1.3	Milestone 10 incomplete. Originally due Q4 2021 No simulation model results available.
1.12 Establishment of fishery management units (MS11)	Determine and implement harvest control rules and strategies for blue swimming crab stocks	1.2.1 1.2.2 1.2.3	Milestone 11 complete.
1.13 Assessment/ Evaluation of harvest strategies and harvest control rules (MS12)	Determine and implement harvest control rules and strategies for blue swimming crab stocks	1.2.1 1.2.2 1.2.3	Milestone 12 complete but limited information only. Summary document only outlining biological reference points, harvest strategy and harvest control rules. No evidence of assessment or evaluation of harvest strategies and HCRs.
1.14 Implementation of harvest strategies and harvest control rules (MS13)	Determine and implement harvest control rules and strategies for blue swimming crab stocks	1.2.1 1.2.2 1.2.3	Milestone 13 is ongoing. Completion date expected Q4 2024.
1.15 Development and implementation of MCS systems (MS14)	Determine and implement harvest control rules and	1.2.1 1.2.2 1.2.3	Milestone 14 is ongoing. Completion date expected Q4 2024.

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Status in 2023
	strategies for blue swimming crab stocks		
2.1 RBF Assessment for primary, secondary and ETP species, habitats and key ecosystem elements (MS15)	Assessment and management of by-catch species (primary, secondary and ETP species)	2.1.1 2.1.2 2.1.3	Milestone 15 complete. Full report not available for review methods or information sources for result presented.
2.2 By-catch composition and identification of gillnet, pot, and trap blue swimming crab fishery (MS16)	Assessment and management of by-catch species (primary, secondary and ETP species)	2.2.1 2.2.2 2.2.3	Milestone 16 is ongoing. Completion date expected Q4 2024.
2.3 By-catch composition, identification and classification into primary, secondary or ETP species of blue swimming crab fishery (MS17)	Assessment and management of by-catch species (primary, secondary and ETP species)	2.3.1 2.3.2 2.3.3	Milestone 17 is ongoing. Completion date expected Q4 2024.
2.4 Gear identification and specificity to be included in stock assessment programs of LGU and BFAR (MS18)	Assessment and management of by-catch species (primary, secondary and ETP species)	2.3.1 2.3.2 2.3.3	Milestone 18 is ongoing. Completion date expected Q4 2024.

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Status in 2023
2.5 Management measures, i.e. fishing gear and practices, and their effectiveness at reducing bycatch and mortality of unwanted catch (MS19)	Assessment and management of by-catch species (primary, secondary and ETP species)	2.3.1 2.3.2 2.3.3	Milestone 19 is ongoing. Completion date expected Q4 2023.
2.6 Impacts of blue swimming crab fishery to different habitats (i.e. seagrass beds, mangrove areas, coral reef areas) in the Visayan Sea including spatial attributes and mapping (MS20)	Investigate the impact of the fishery on habitat structure and function, and develop a strategy to ensure habitat integrity	2.4.1	Milestone 20 is ongoing. Completion date expected Q4 2023.
2.7 Identification of appropriate management strategy to ensure integrity of habitats, including but not limited to fishing gear management and zonation (MS21)	Investigate the impact of the fishery on habitat structure and function, and develop a strategy to ensure habitat integrity	2.4.2	Milestone 21 is ongoing. Completion date expected Q4 2024.
2.8 Study on the trophic impact and the likelihood of cascades	Investigate the impacts of the fishery to the ecosystem and identify	2.5.1	Milestone 22 is ongoing. Completion date expected Q4 2023.

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Status in 2023
from the blue swimming crab fishery (MS22)	appropriate measures to prevent irreversible risks		
3.1 Review and assessment of the BSC management plan and JAO implementation at the local level (MS23)	Support the implementation of BSC management plan and the JAO; and continue IEC campaigns	3.1.1 3.1.2 3.1.3	Milestone 23 complete. The revision of BSC-NMP has been approved and implemented for roll- out in pilot areas to ensure strategies of voluntary compliance before making it mandatory.
3.2 Mapping of governance or policies, institutional arrangements relevant to blue swimming crab (MS24)	Support the implementation of BSC management plan and the JAO; and continue IEC campaigns	3.1.4	Milestone 24 is complete. Governance mapped within report available for review.
3.3 Implementation of the JAO (MS25)	Support the implementation of BSC management plan and the JAO; and continue IEC campaigns	3.1.4	Milestone 25 is ongoing. Completion date expected Q4 2024.
3.4 Refinement of the BSC Management Plan and the JAO to include provisions on decision making process, MCS, and monitoring and evaluation system (MS26)	Support the implementation of BSC management plan and the JAO; and continue IEC campaigns	3.1.4	Milestone 26 is ongoing. Completion date expected Q4 2024.

Result	Related Action on FisheryProgress	Related MSC Performance Indicator	Status in 2023
3.5 Information, Education and Communication campaigns and capacity-building for stakeholders (translation of the JAO to local policy) (MS27)	Support the implementation of BSC management plan and the JAO; and continue IEC campaigns	3.2.3	Milestone 27 is ongoing. Completion date expected Q4 2024.
3.6 Encourage industry to adhere to the minimum legal size policy and device a scheme to encourage crab fishers not to catch or trade juvenile crabs (MS28)	Support the implementation of BSC management plan and the JAO; and continue IEC campaigns	3.2.3	Milestone 28 is ongoing. Completion date expected Q4 2024.

Human Rights and Social Responsibility Policy

Under FisheryProgress, FIPs are now having to address social performance in their fisheries and comply with the Human Rights and Social Responsibility Policy². The implementation of this policy will follow a phased approach according to a timeline, which was updated to reflect a six-month delay in some requirements. The policy covers all vessels, fisheries and fisheries observers within the FIP as well as all fishing activities whether conducted from shore, a vessel or elsewhere. The FIP lead is responsible for reporting to FisheryProgress that FIP participants are doing their part to uphold human rights. All FIPs reporting on FisheryProgress must:

1.1 Sign the FisheryProgress Human Rights Code of Conduct.

1.2 Provide information about the vessels or fishers included in the FIP.

1.3 Undertake best efforts to make fishers aware of their rights.

1.4 Demonstrate there is a grievance mechanism available to all fishers in the FIP.

1.5 Complete a self-evaluation against the FisheryProgress criteria for increased risk of forced labour and human trafficking.

There are additional requirements if the FIP meets one or more FisheryProgress criteria for increased risk of forced labour and human trafficking (see Requirement 1.5). In this case, the FIP must:

2.1 Complete a risk assessment using the Social Responsibility Assessment Tool (SRA).

2.2 Create a social workplan to address all red indicators in the risk assessment.

2.3 Report publicly on action progress and update indicator scores.

Any FIP may also voluntarily report on their performance and progress on one or more social issues.

² <u>https://fisheryprogress.org/sites/default/files/FP_SocialPolicy_English_5.7.21.pdf</u>

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Annex 1: List of Milestones within FIP Workplan

Milestone	Title
1	Conduct stock assessment in Danajon Reef, Bohol using SPR assessment method towards sustainable blue swimming crab management in the Philippines.
2	Collaborate with BFAR for stock assessment data obtained under its National Stock Assessment Program.
3	SPR assessment of blue swimming crab in Bantayan Island, Cebu.
4	Collaborate with BFAR for the stock assessment for blue swimming crab.
5	Population genetics of Philippine blue swimming crab.
6	Installation of holding cages.
7	Stock enhancement using hatchery-bred crab juveniles.
8	Monitoring and impact assessment of stock enhancement.
9	Pilot-testing of Thai-style hatchery technology.
10	Determine the effectiveness of holding cages and Thai-style hatchery in contributing to rebuilding BSC stocks through a simulation model.
11	Establishment of fishery management units.
12	Assessment/Evaluation of harvest strategies and harvest control rules.
13	Implementation of harvest strategies and harvest control rules.
14	Development and implementation of MCS systems.
15	RBF Assessment for primary, secondary and ETP species, habitats and key ecosystem elements.
16	By-catch composition and identification of gillnet, pot, and trap blue swimming crab fishery.
17	By-catch composition, identification and classification into primary, secondary or ETP species of blue swimming crab fishery.
18	Gear identification and specificity to be included in stock assessment programs of LGU and BFAR.
19	Management measures, i.e. fishing gear and practices, and their effectiveness at reducing bycatch and mortality of unwanted catch.

20	Impacts of blue swimming crab fishery to different habitats (i.e. seagrass beds, mangrove areas, coral reef areas) in the Visayan Sea including spatial attributes and mapping.
21	Identification of appropriate management strategy to ensure integrity of habitats, including but not limited to fishing gear management and zonation.
22	Study on the trophic impact and the likelihood of cascades from the blue swimming crab fishery.
23	Review and assessment of the BSC management plan and JAO implementation at the local level.
24	Mapping of governance or policies, institutional arrangements relevant to blue swimming crab.
25	Implementation of the JAO.
26	Refinement of the BSC Management Plan and the JAO to include provisions on decision making process, MCS, and monitoring and evaluation system.
27	Information, Education and Communication campaigns and capacity-building for stakeholders (translation of the JAO to local policy).
28	Encourage industry to adhere to the minimum legal size policy and device a scheme to encourage crab fishers not to catch or trade juvenile crabs.