

**Marine Stewardship Council (MSC) 2nd Surveillance Report  
Netherlands Blue Shell Mussel (Bottom and Suspended Culture)  
Fishery**

**On behalf of the Vereniging Producentenorganisatie van de  
Nederlandse mosselcultuur (Dutch PO mussel culture) and the  
Zeeuwse Hangcultuurkwekers**

**Prepared by  
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## Contents

<b>CONTENTS.....</b>	<b>1</b>
<b>GLOSSARY .....</b>	<b>2</b>
<b>1 GENERAL SUMMARY .....</b>	<b>3</b>
<b>2 BACKGROUND .....</b>	<b>5</b>
2.1 Principle 1.....	5
2.2 Principle 2.....	8
2.3 Principle 3.....	8
2.4 Traceability.....	9
2.5 Harmonisation .....	9
<b>3 ASSESSMENT PROCESS .....</b>	<b>10</b>
<b>4 RESULTS .....</b>	<b>11</b>
<b>5 CONCLUSION.....</b>	<b>11</b>
<b>6 EVALUATION RESULTS .....</b>	<b>12</b>
6.1 Principle Level Scores.....	12
6.2 Summary of PI Level Scores .....	12
<b>7 REFERENCES.....</b>	<b>14</b>

## Glossary

Acronym	Definition
CAB	Conformity Assessment Body
CFP	Common Fisheries Policy
CU Pesca	Control Union Pesca Ltd.
EEZ	Exclusive Economic Zone
EMFF	European Maritime and Fisheries Fund
EU	European Union
IMARES	Institute for Marine Resources & Ecosystem Studies
LNv	Ministry of Agriculture, Nature, and Food Quality
MEC	ME Certification Ltd
MEP	MacAlister, Elliott & Partners Ltd
NVWA	Netherlands Food and Consumer Product Safety Authority
MZI	Mosselzaadinstallaties (seed mussel collectors: SMC)
PCR	Public Certification Report
PO	Producer Organisation
PRODUS	Project Duurzame Schelpdiercultuur (Project Sustainable Shellfish Culture)
SASI	Schelpdier Afhankelijke Soorten Inventarisatie (Shellfish Dependant Species Inventory)
SMC	Seed mussel collectors
UoA	Unit of Assessment
UoC	Unit of Certification
VMS	Vessel Monitoring System
VZHK	Vereniging Zeeuwse Hangcultuurkwekers
WMR	Wageningen Marine Research (formerly IMARES)

# 1 General summary

<b>Fishery name</b>	Netherlands Blue Shell Mussel (Bottom and Suspended Culture) Fishery		
<b>Unit(s) of assessment</b>	<p>Species: Blue shell mussel (<i>Mytilus edulis</i>)</p> <p>Geographical range of fishery operations: The Waddenzee and Zeeuwse delta of the Dutch coastal region.</p> <p>Method of capture:</p> <p><u>UoC1</u>: Seed mussel collection by suspended ropes and nets (<i>mosselzaad-invanginstallaties</i>, MZIs, in Dutch) in the Oosterschelde, Wadden Sea and Voordelta;</p> <p><u>UoC2</u>: Seed mussel collection by mussel dredge (<i>'mosselkor'</i>) in the Wadden Sea and Oosterschelde;</p> <p><u>UoC3</u>: On-growing of mussels grown using suspended ropes, collection of harvest size mussels from suspended ropes by Zeeuwse Hangcultuurkwekers in Zeeland (Oosterschelde, Voordelta, Veerse Meer and Grevelingenmeer);</p> <p><u>UoC4</u>: Seeding mussel seed and half grown mussels on culture plots, collection of harvest size mussels from culture plots by dredging in the Wadden Sea and Oosterschelde.</p> <p>Client group: Vereniging Producentenorganisatie van de Nederlandse mosselcultuur (Dutch PO Mussel Culture); Vereniging Zeeuwse Hangcultuurkwekers.</p>		
<b>Date certified</b>	27 <sup>th</sup> October 2016	<b>Date of expiry</b>	26 <sup>th</sup> October 2021
<b>Surveillance level and type</b>	Surveillance level 4, on-site surveillance		
<b>Date of surveillance audit</b>	20 February 2019  Note: the timing of this audit was delayed so that the site visit could coincide with the on-site Year 3 surveillance audit for the Mussel translocation in the Oosterschelde fishery. Both audits took place at the offices of the Mussel Auction in Yerseke.		
<b>Surveillance stage (tick one)</b>	1st Surveillance		
	2nd Surveillance	x	
	3rd Surveillance		
	4th Surveillance		
	Other (expedited etc)		
<b>Surveillance team</b>	Lead assessor: Chrissie Sieben		
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	Contact name(s)	(1) Mr. Addy Risseeuw (2) Mr. Jaap Geleijnse

## 2 Background

This report outlines the process and outcome of the second annual surveillance audit for Netherlands Blue Shell Mussel (Bottom and Suspended Culture) fishery. This fishery is in its second certification cycle and is made up of two previously certified mussel fisheries: the Netherlands blue shell mussel fishery and Netherlands suspended culture mussel fishery. The PO Mussel acts as a contact for both fisheries.

The bottom culture fishery is conducted by members of the Producentenorganisatie van de Nederlandse mosselcultuur (Dutch PO mussel culture). This PO is based in Yerseke, NL. It has 89 members, with 63 vessels based in Yerseke, Bruinisse and Zierikzee. Since the reassessment, the number of members and the amount of vessels has remained the same. The activities carried out by the members includes:

- Seed mussel collection by suspended ropes and nets (*mosselzaad-levanginstallaties*, MZIs, in Dutch) in the Oosterschelde, Wadden Sea and Voordelta;
- Dredging for wild seed (currently in the Wadden Sea only although the process to apply for a license to dredge for seed in the Oosterschelde has commenced);
- Mussel culture on culture plots in the Waddenzee en Oosterschelde. This involves seeding mussel seed and half grown mussels on culture plots and collecting harvest size mussels from the culture plots by dredging.

The suspended culture fishery is carried out by five companies that are all members of the Vereniging Zeeuwse Hangcultuurkwekers (VZHK). This fishery involves the collection of mussel spat on either suspended ropes or nets. The collected spat is then transferred into socks at the on-growing sites. During the grow-out phase, the mussels transfer themselves to the outside of the sock, leaving the sock itself as a rope supporting the increasing weight of the mussel. The farms are mainly located in relatively sheltered areas, such as former harbours, in the Oosterschelde, Voordelta, Veerse Meer and Grevelingenmeer.

The fishery was recertified by ME Certification Ltd. (now CU Pesca) on the 27<sup>th</sup> October 2016 with no conditions or recommendations. This report therefore focuses on any changes that have occurred since the reassessment and Year 1 surveillance.

### 2.1 Principle 1

There is no Total Allowable Catch (TAC) for this fishery. The production data for the different UoAs are presented in Table 1. Note that in the Netherlands, mussel biomass is expressed in “mosseltonnen” (mussel tonne), with one mussel tonne equating 100 kg.

**Table 1. Production Data in the Netherlands Blue Mussel Fisheries (UoA 1-4). Data presented are in mussel tonnes (i.e. x 100kg)**

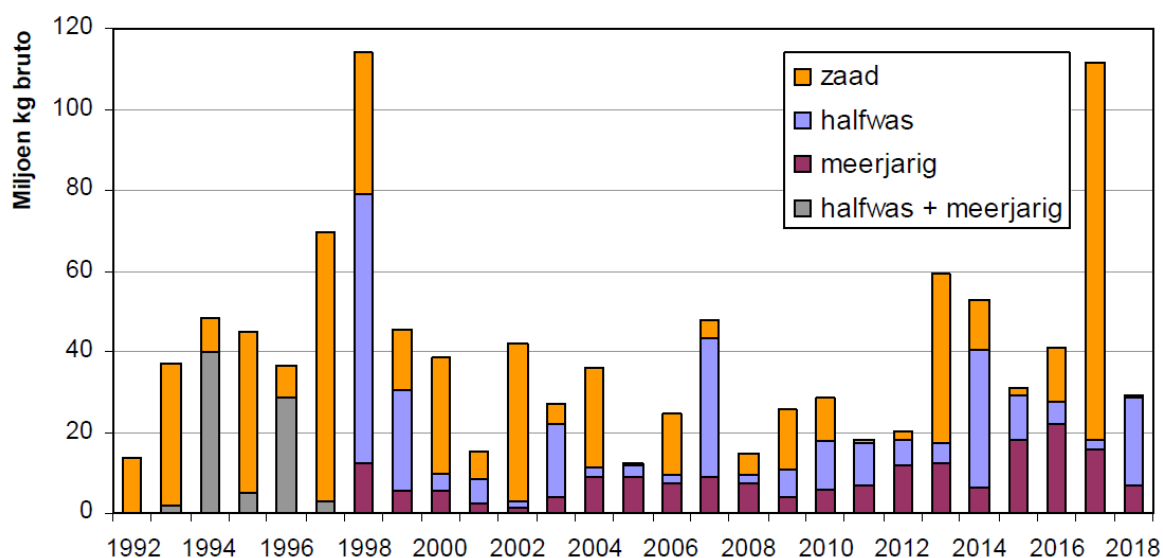
Period	UoA 1: MZIs	UoA2: wild seed fishery	UoA 3: suspended culture	UoA 4: bottom culture
2014/2015	174,600	200,000	19,438	579,320
2015/2016	181,000	241,160	24,295	402,941
2016/2017	160,000	673,032	16,000	526,726
2017/2018	Not yet available	234,211*	16,391	438.860

\*spring + autumn 2018

The mussels stock of the Dutch coastal zone can be considered as one stock. The stock includes wild mussel beds (predominantly in the Wadden Sea), mussels on hard substrates like dykes, and mussels on mussel culture plots, both in the Wadden Sea and the Oosterschelde. A considerable part of the annual spatfall is harvested and transferred to the culture plots.

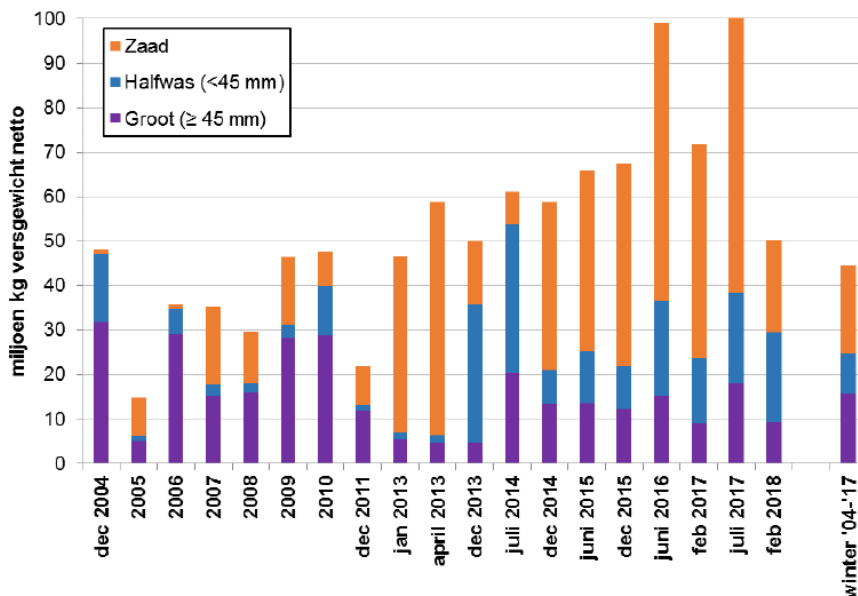
During the reassessment, Principle 1 was not assessed in line with clause CK2.1.3.1 of the MSC Certification Requirements v1.3 and for the reasons given in the reassessment report (Gascoigne et al., 2016). Nevertheless, wild stocks are surveyed on a scientific basis twice a year (in spring and in autumn). The stock on culture plots is known from a winter/spring biomass survey. The results of these surveys were discussed during the surveillance site visit.

In 2017, the spring survey on wild beds estimated the total wild stock in the Western Wadden Sea at 60.2 Mkg live weight, 46.6 Mkg of which were seed mussels and 13.6 Mkg were half-grown or adult mussels. The amount of mussel seed was deemed a record amount, not seen since the start of the surveys in 1992 (Sieben, 2018). However, according to the most recent spring survey (van Stralen and van den Ende, 2018), spatfall in 2018 was minimal, estimated at 0.8 Mkg (Figure 1). In late 2018, the total stock in the western Wadden Sea was estimated at 54Mkg live weight, 20Mkg of which were deemed exploitable by the mussel fishery (the remainder is situated in areas not accessible to the fishery, e.g. intertidal areas, closed areas or areas not part of the fishing plan). Note that in recent years, there has been no wild seed fishery in the Oosterschelde – the last time this happened was in 2010. However, ad hoc surveys have indicated the presence of wild seed beds and the fishery is now in the process of applying for a wild seed fishing license in this area.



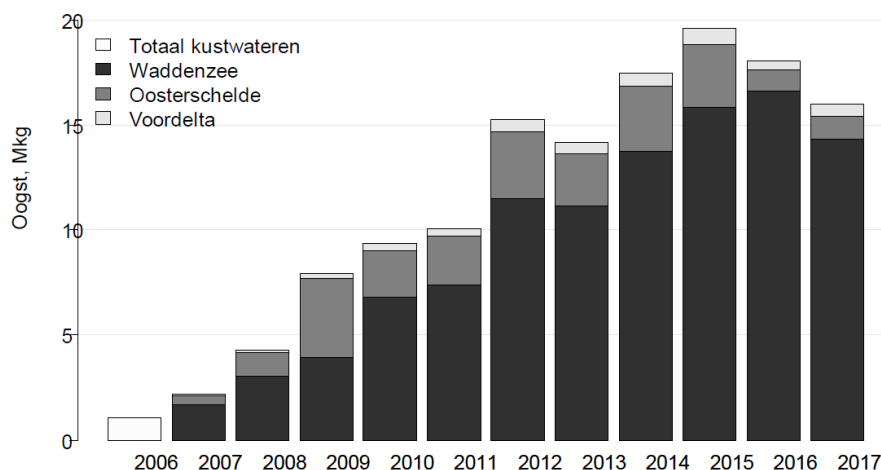
**Figure 1. The spring survey estimates of wild mussel stock in the Western Wadden Sea, 1992-2018; zaad=seed, halfwas=half-grown, meerjarig=adult (van Stralen and van den Ende, 2018).**

On culture plots in the Dutch Wadden Sea, the January/February 2018 survey (Capelle and van Stralen, 2018) estimated total biomass at 50.4 Mkg live weight. The aim of this survey is to monitor food availability for overwintering birds, taking into account overall stock status in the Dutch Wadden Sea, to support the fishing license for the wild seed fishery in the Wadden Sea. The minimum level of biomass on culture plots required at the end of 2017 was estimated at 48Mkg live weight. Based on the 2018 survey it could be concluded that a sufficient amount of mussels was available for birds in the Dutch Wadden sea area.



**Figure 2. The mussel stock on culture plots in the Dutch Wadden Sea in net fresh weight from 2004 to 2018, with the average December 2004- February 2017 plotted right (this is the minimum biomass required on the culture plots for birds) (Capelle and van Stralen, 2018).**

The quantity of mussel seed that is cultured on MZIs is annually estimated through a survey of production figures of companies that produce mussel spat through mussel seed collectors. Capelle et al. (2018) estimated that in 2017 160,000 mussetonnes of mussel seed were produced. This is 11% lower than in 2016 (which itself showed an 8% drop compared to the previous year - Figure 3). The lower production is caused by a lower harvest per unit of substrate of MZIs in the Wadden Sea. The harvest rate in the Oosterschelde was in contrast still at a high level. Furthermore, 2017 has seen a 7% and 11% decrease in MZIs being deployed compared to 2016 in the Wadden Sea and Oosterschelde respectively.



**Figure 3. Annual harvest of seed mussels in million kg (Mkg) live weight from MZIs in the Wadden Sea, Oosterschelde and Voordelta. (Capelle et al., 2018).**

There has been no change in the amount of plots leased in either the Oosterschelde or the Dutch Wadden Sea. The area used for the grow-out of mussels on ropes (suspended culture) has not changed either.



## 2.2 Principle 2

There have been no changes to the fishing gear used in either the seed fishery, the MZIs, the bottom culture or the suspended culture. Capelle and van Stralen (2018) reported a decrease in the abundance of starfish (*Asterias rubens*) on culture plots while that of crabs (*Carcinus maenas*) appeared constant. Van Stralen et al. (2018) also noted a shift in the distribution of starfish towards the more inland waters, which may be a consequence of the dry 2018 summer and reduced freshwater runoff.

In support of the PO's multi-year license application for 2018 – 2020, an appropriate assessment was carried out for the mussel fishery in the Western (Dutch) Wadden Sea (the activity assessed includes the wild seed fishery). Van Stralen (2018) concluded that, subject to the minimum required biomass of mussels remaining available as a food source for birds (also see Section 2.1), that the activity is unlikely to impact on the status of the following Natura 2000 qualifying features for the Wadden Sea area:

- Habitat type 1110-A (Sandbanks which are slightly covered by sea water all the time)
- Protected birds: Common eider (*Somateria mollissima*), greater scaup (*Aythya marila*), common goldeneye (*Bucephala clangula*), red-breasted merganser (*Mergus serrator*) and great cormorant (*Phalacrocorax carbo*)

Although the license application for the Oosterschelde seed fishery is ongoing, the appropriate assessment was not yet available for this surveillance.

The ban on transporting mussels from the Oosterschelde to the Wadden Sea remains in place due to the presence of the Japanese oyster drill (*Ocenebra inornate*) in the Oosterschelde. Note that this does not affect the MZIs of which the seed can still be imported into the Wadden Sea, since the oyster drill does not have a pelagic phase and cannot occur on rope-caught seed.

There have been no further changes in this fishery which are likely to affect Principle 2.

## 2.3 Principle 3

Since recertification and the Year 1 surveillance audit, there have been no relevant changes in the management system, which remains as described by Gascoigne et al. (2016). As reported in the Year 1 surveillance report (Sieben, 2018), the management plans for the Oosterschelde Natura 2000 area as part of the Deltawateren Beheerplan 2016-2022, and the Natura 2000 management plan for the Dutch Wadden Sea 2016-2022 have now been finalised. The plans set out *inter alia* the licensing requirements for activities taking place in both areas and removes the need for separate Natura 2000 licenses (licenses based on the Natura protection act) for some activities, including mussel culture in both the Oosterschelde and the DWS. The MZIs are currently covered by the 2015-2018 N2000 license which has been extended to 2019 by the Ministry van Landbouw, Natuur en Voedselkwaliteit. Consultations for a new multi-year license are currently ongoing.

The black box system is still a key factor in ensuring compliance in this fishery.

The Ministry of Economic Affairs was contacted to determine whether there have been any compliance issues in the fishery over the past year. Although the mussel sector is considered well organised and complies well with the rules, the following incidents were mentioned (Nico Laros, Min. Ez., Pers. Comm. 18 April 2019).

- Mussels that are moved from the Wadden Sea to Zeeland must be declared. This is not done consistently by every grower and should be improved on;

- During 2018, mussel fishing activity was suspected on several areas of dry mussel beds which ought to be closed to mussel fishing. A written warning was issued to the Mussel PO who as a result approached the fishers concerned and sanctioned three companies. No further action was taken by the Ministry.

As this is the first time these types of problems have been reported to the audit team, no rescoring was deemed necessary. However, this will be followed-up on at the next surveillance audit. Should there be an indication of systematic non-compliance this will need to be taken into consideration in the scoring of Performance Indicators 3.2.3.

## **2.4 Traceability**

There have been no changes to the traceability system in this fishery. No non-MSC mussels were imported in the last year.

In recent years, the Dutch mussel fishery has suffered from a drop in market prices (likely fuelled by increased involvement of supermarkets in the sector which are reportedly driving prices down). The 'Coöperatie De Mossel Compagnie B.A.' was thus set up as a cooperative effort to counter this trend and to ultimately protect the smaller companies that are involved in mussel culture. Coöperatie De Mossel Compagnie B.A. is not covered by the fishery certificate, and has its own Chain of Custody.

Note that translocation from other MSC certified fisheries into the Oosterschelde is covered under a separate certificate, MEC-F-039.

## **2.5 Harmonisation**

This fishery does not overlap with any other fishery in the MSC programme. No harmonisation is required. See Gascoigne et al. (2016) for details.

### 3 Assessment Process

The fishery entered re-assessment on the 10<sup>th</sup> September 2015. The site visit took place in Yerseke, Zeeland on the 12-15<sup>th</sup> October 2015 and the assessment team consisted of Dr. Jo Gascoigne (Team Leader), Ulf Löwenberg, Kat Collinson and Chrissie Sieben. The certificate was awarded on 27 Oct 2016.

The Year 1 Surveillance audit was carried out remotely by Chrissie Sieben, on the 30<sup>th</sup> October 2017. The same assessor carried out the site visit for the Year 2 surveillance on the 20<sup>th</sup> February 2019. Note that the timing of this audit was delayed so that the site visit could coincide with the on-site Year 3 surveillance audit for the Mussel translocation in the Oosterschelde fishery. Both audits took place at the offices of the Mussel Auction in Yerseke.

Stakeholders were informed of the scheduled audit, its time and location and the proposed audit team on 17<sup>th</sup> January 2019. No comments or requests for interviews were received. The audit was attended by the following participants:

Name	Role/organisation
Paula Huissen-Scheurwater	Client Group - PO Mosselcultuur Representative
Jaap Geleijnse	Client Group – Ver. Zeeuwse Hangcultuurkwekers
Aart de Zeeuw	Client Group – Ver. Zeeuwse Hangcultuurkwekers
Leo Vorthoren	Beleidsadviseur mariene biologie – PO Mosselcultuur
Chrissie Sieben	CU Pesca assessor

This fishery remains in conformity with the MSC scope requirements (FCR 7.4):

- The fishery does not target amphibians, birds, reptiles or mammals;
- The fishery does not use poisons or explosives;
- The fishery does not operate under a controversial unilateral exemption to an international agreement;
- The client group does not include an entity that has been successfully prosecuted for a forced labour violation in the last 2 years;
- The fishery management framework includes a mechanism for resolving disputes and the fishery is not overwhelmed by disputes.
- No inseparable or practicably inseparable (IPI) stocks are caught in this fishery;
- The fishery is not an Introduced Species Based Fishery as per the MSC FCR 7.4.4;
- The fishery meets the scope criteria for an enhanced fishery, as explained detailed in Gascoigne et al. (2016).

There are no other eligible fishers in this assessment. The Unit of Certification (UoC) is therefore the same as the Unit of Assessment (UoA).

The fishery was assessed using the MSC Fisheries Certification Requirements Version 2.0 for procedure. The fishery was reassessed in line with Annex CB of the MSC Certification Requirements v1.3.

## **4 Results**

No conditions or recommendations were raised during the reassessment, Year 1 or Year 2 surveillances.

## **5 Conclusion**

On the basis of the information presented in the preceding sections, CU Pesca confirms that the Netherlands Blue Shell Mussel (Bottom and Suspended Culture) fishery continues to conform to the MSC Principles and Criteria for sustainable fishing.

There have been no significant changes to the fishery since the reassessment or Year 1 surveillance.

The surveillance level remains at level 4.

No new conditions or recommendations were put forward during the Year 2 surveillance audit. On that basis, CU Pesca concludes that the certificate should be maintained.

## 6 Evaluation Results

### 6.1 Principle Level Scores

The final Principle scores are provided in Table 2.

**Table 2. Final Principle Scores**

Principle	Score
Principle 1 – Target Species	Not scored
Principle 2 – Ecosystem	UoA 1,3,4 – 94.3 UoA 2 – 93.3
Principle 3 – Management System	90.9

### 6.2 Summary of PI Level Scores

Principle	Component	Weighting	PI number	Performance Indicator	Score
1	Outcome	0.5	1.1.1	Stock status	N/A
			1.1.2	Reference points	N/A
			1.1.3	Stock rebuilding	N/A
	Management	0.5	1.2.1	Harvest Strategy	N/A
			1.2.2	Harvest control rules and tools	N/A
			1.2.3	Information and monitoring	N/A
			1.2.4	Assessment of stock status	N/A
2	Retained species	0.2	2.1.1	Outcome	100
			2.1.2	Management	100
			2.1.3	Information	100
	Bycatch species	0.2	2.2.1	Outcome	80
			2.2.2	Management	80
			2.2.3	Information	80
	ETP species	0.2	2.3.1	Outcome	UoC 1,3,4 - 100
			2.3.2	Management	90
			2.3.3	Information	95
	Habitats	0.2	2.4.1	Outcome	100
			2.4.2	Management	100
			2.4.3	Information	95
	Ecosystem	0.2	2.5.1	Outcome	100
			2.5.2	Management	95
			2.5.3	Information	100

Principle	Component	Weighting	PI number	Performance Indicator	Score
3	Governance and Policy	0.5	3.1.1	Legal and customary framework	100
			3.1.2	Consultation, roles and responsibilities	85
			3.1.3	Long term objectives	100
			3.1.4	Incentives for sustainability	90
	Fishery-specific management system	0.5	3.2.1	Fishery specific objectives	90
			3.2.2	Decision making processes	85
			3.2.3	Compliance and enforcement	95
			3.2.4	Research plan	80
			3.2.5	Management performance evaluation	90

## 7 References

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