

PRE-ASSESSMENT OF THE

# Southern Adriatic Sea (GSA 18) European anchovy purse seine fishery, Assopesca (Associazione Armatori da Pesca di Molfetta), Molfetta BA

MARINE STEWARDSHIP COUNCIL

**Report No.:** Anchovy\_PS\_GSA18\_P1\_P2\_P3, Rev. 0

**Authors:** Giuseppe Scarcella, Antonello Sala, Alessandro Ligas

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Preassessmen of the Southern Adriatic Sea (GSA 18) European anchovy purse seine fishery , against MSC Fisheries Standards v2.0.

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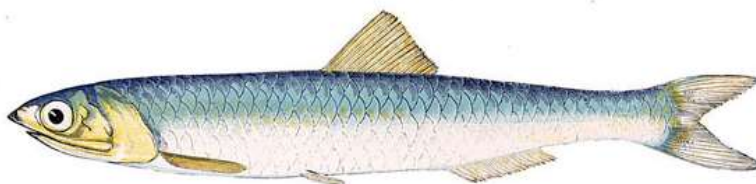
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# Southern Adriatic Sea (GSA 18) European anchovy purse seine fishery



## Pre-Assessment Report

Conformity Assessment Body (CAB)	DNV GL
Fishery client	MARINE STEWARDSHIP COUNCIL
Assessment Type	Pre-assessment

## Pre-Assessment Report

September 2019

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**Certification Body:**  
DNV GL Italy

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# 1 Introduction

The purpose of this pre-assessment is to assess whether the fishery would meet version 2 MSC Certification Requirements.

This report is a pre-assessment which provides details of the MSC assessment process for the Purse seine fishery targeting European anchovy in the South Adriatic Sea (GSA 18). The process begins with the draft of the pre-assessment on 6<sup>th</sup> May 2019 and was concluded in 5<sup>th</sup> August 2019, after an internal review.

A review of information presented by the client has been scored by the assessment team also after a site visit in Molfetta and Manfredonia where most of the vessels targeting European anchovy with purse seine are located. Please note this report does not represent a final scoring outcome or a certification decision.

The scoring presented in this report has not been reviewed by stakeholders, peer reviewers or the client – these steps will all take place from here onwards in the case the client will decide to start a full assessment. The site visit was conducted the 4<sup>th</sup> of June 2019 in Molfetta and Manfredonia.

Stakeholders are encouraged to review the scoring presented in this pre-assessment and use the Stakeholder Input Form to provide evidence to the team of where changes to scoring are necessary. DNV GL welcomes stakeholder submissions on the pre-assessment from 15<sup>th</sup> July 2019 for a period of 60 days.

The assessment team for this fishery assessment comprised of Giuseppe Scarcella, who acted as team leader and primary Principle 3 specialist; Alessandro Ligas, who was primarily responsible for evaluation of Principle 1 and Antonello Sala, who was primarily responsible for evaluation of Principle 2. Giuseppe Scarcella was also the traceability expert advisors.

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## 2 Glossary

AIS Automatic identification system  
CA Consequence Analysis (RBF)  
CFP Common Fisheries Policy  
CPU Catch per Unit of Effort  
CSA Consequence Spatial Analysis (RBF)  
EEZ Exclusive Economic Zone  
EFCA European Fisheries Control Agency  
ETP Endangered, threatened and protected species  
EU European Union  
FCR Fisheries Certification Requirements  
GES Good Environmental Status  
GFCM General Fisheries Commission for the Mediterranean  
GSA Geographical Sub-Area  
LTL Low Trophic Level  
MCRS Minimum Conservation Reference Size  
MEDAC Mediterranean Advisory Council  
MIPAAF Italian Ministry of Agriculture and Forestry  
MLS Minimum Landing Size  
MSC Marine Stewardship Council  
PI Performance indicator  
PISG Performance Indicator Scoring Guidepost  
PRI Point of Recruitment Impairment  
PSA Productivity-Susceptibility Analysis (RBF)  
RBF Risk-Based Framework  
SG Scoring Guidepost  
SI Scoring Issue  
SIC Sites of Important Communities  
SPZ Special Protection Zone  
STECF Scientific, Technical and Economic Committee for Fisheries  
TAC Total allowable catch  
UoA Unit of Assessment  
VME Vulnerable marine ecosystems



### 3 Executive summary

All team members listed below have completed all requisite training and signed all relevant forms for assessment team membership on this fishery.

Assessment team leader: Dr Giuseppe Scarcella  
Primarily responsible for assessment under Principle 3

Giuseppe Scarcella is an experienced fishery scientist and population analyst and modeller, with wide knowledge and experience in the assessment of demersal stocks. He holds a first degree in Marine Biology and Oceanography (110/110) from the Università Politecnica delle Marche, and a PhD in Marine Ecology and Biology from the same university, based on a thesis 'Age and growth of two rockfish in the Adriatic Sea'. After his degree he was offered a job as project scientist in several research programs about the structure and composition of fish assemblage in artificial reefs, off-shore platform and other artificial habitats in the Italian Research Council – Institute of Marine Science of Ancona (CNR-ISMAR). During the years of employment at CNR-ISMAR he has gained experience in benthic ecology, statistical analyses of fish assemblage evolution in artificial habitats, fisheries ecology and impacts of fishing activities, stock assessment, otolith analysis, population dynamic and fisheries management. During the same years he attended courses of uni- multivariate statistics and stock assessment. He is also actively participating in the scientific advice process of FAO GFCM in the Mediterranean Sea. At the moment he is member of the Scientific, Technical and Economic Committee for Fisheries for the European Commission (STECF). Dr Scarcella is author and co-author of more than 30 scientific paper peer reviewed journals and more than 150 national and international technical reports, most of them focused on the evolution of fish assemblages in artificial habitats and stock assessment of demersal species. For some years now, he has been working in fisheries certification applying the Marine Stewardship Council standard for sustainable fisheries, currently concentrating on Principle 1 of the Standard. Furthermore, Dr Scarcella holds the credential as Fishery team leader (MSC v2.0). Giuseppe has passed MSC training and has no Conflict of Interest in relation to this fishery. Full CV available on request.

Expert team member: Dr Alessandro Ligas  
Primarily responsible for assessment under Principle 1

Alessandro Ligas holds a Master Degree in Biological Sciences and a PhD in Marine Ecology (University of Pisa, Italy). He has 15 years of experience in fisheries science and international and national projects. Since 2002, he is involved in the activities carried out under the EU DCF. His research focuses on the biology and population dynamics of marine fish and shellfish stocks to provide scientific advice on stocks and fisheries of commercial and ecological importance. From 2012 to 2014, he has worked as project leader (Senior Scientific Officer) at the Agri-Food and Biosciences Institute (AFBI), Belfast, UK, responsible for the design and implementation of appropriate data collection programmes in support of the assessment and management of fisheries in the Irish Sea. Currently, he holds the position of researcher at CIBM. He is the chairman of the GFCM Working Group on Stock Assessment of Demersal species (WGSAD) in the Mediterranean Sea, and has a decadal experience in participating to ICES and STECF expert working groups. His experience has allowed him to acquire thorough knowledge in the fisheries sector in both the Mediterranean and north-eastern Atlantic waters, and familiarity with European fishery legislation (e.g. CFP, MSFD).

Expert team member: Dr Antonello Sala  
Primarily responsible for assessment under Principle 2

Antonello Sala is scientific researcher at the Fishing Technology Unit at the National Research Council (CNR) in Ancona, Italy. Expert in efficiency and selectivity research; fishing gear technology and fuel saving; measurements of the engineering performance of the fishing gears at sea using underwater instrumentation; fishing gear design; netting material properties; modelling and performance; physical and biological impacts produced in the marine environment by human activities. He is responsible of the Fishing Technology Unit and has over 24 years of experience of studying the wider ecosystem effects of fishing on the marine environment. Since 2010 he is member of the European "Scientific, Technical and Economic Committee for Fisheries (STECF)". Since 2014 he has been contracted by the European Fisheries Control Agency (EFCA) as external expert for the "Assistance with the development of a methodology for the statistical and technical analysis of fisheries data". His research interests are fishing gear technology and fuel saving, measurements of the engineering performance of the fishing gears at sea using underwater instrumentation and fishing gear design. Dr. Sala has been responsible scientist in several EU and national research projects and has worked numerous times as a scientific consultant and served on several national and international evaluation committees. He has published over 70 peer reviewed scientific papers and is on the editorial board of various scientific journals.

Using data collected during the previous stage of Blufish project Italy, the selected fishery have been pre-assessed with regards to the MSC Standards by the independent certification bodies. The objective is to identify the area where improvements are needed to achieve the MSC sustainability level. During a MSC pre-assessment, certifiers and local experts evaluate, at a provisional level, a fishery's performance against the MSC fisheries standard. This allows any potential issues in a fishery's performance to be identified, and enables potential fishery clients to improve and prepare accordingly for a full assessment.

In the present pre-assessment the team used recent, publicly available information on stock status, bycatch species, and management to describe and evaluate potential MSC scoring ranges for the fishery. Main strengths and weakness of the of the fishery are summarized below. The weakness will need to be considered in Fishery Improvement Project (FIP) or full assessment.

The team did not have a specific fishery client to consult for this analysis and relied on publicly posted information to develop this assessment. However, a site visit was conducted to discuss with major stakeholder interested in the certification as Assopesca (Associazione Armatori da Pesca di Molfetta) in Molfetta where around 10 purse seine are active with tonnage comprised between 25-100 GT.

#### Client strengths

The fishery associations based in Molfetta and Mafredonia are a well-established fishery actor in the Southern Adriatic Sea. It is well integrated in the management process in Italy.

European anchovy is a joint Adriatic stock, managed by the GFCM, which is generally considered to be a very effective management body.

There is a well-established data collection system providing feedback to the decision making process.

The fishery largely takes place in the Italian waters (inside 12 nm), where the Italian Coast Guard carries out monitoring and inspections. The Italian enforcement system is generally considered to be very effective.

#### Client weaknesses

The harvest strategy has not limited exploitation effectively, taking into account that catches have been higher than the sustainable levels.

There is no quantitative information available on ETP presence in the catch from all vessels involved in the fishery, nor a regular review of the measures to avoid or reduce unwanted catch, including ETPs.

The status of European anchovy is not in a healthy condition. The Management plan is still not well structured.

#### Determination

On completion of the initial review of information and scoring, the assessment team conclude that one PI is likely to score below 60 in Principle 1 and weighted average score for principle 2 and 3 to score above 80.

## 4 Report details

### 4.1 Aims and constraints of the pre-assessment

The present report is a pre-assessment does not attempt to duplicate a full assessment against the MSC Fisheries Standard. A full assessment involves a group of assessment team members and public consultation stages that are not included in a pre-assessment. A pre-assessment provides a provisional assessment based on a limited set of information provided by the client.

The CAB outlines that limitations placed on this pre-assessment are inaccessibility of the fishery key data as the statics on the inspection and infractions in the area.

### 4.2 Version details

The report shall include a statement on the versions of the fisheries program documents used for this assessment.

**Table 1 – Fisheries program documents versions**

Document	Version number
MSC Fisheries Certification Process	<b>Version 2.1</b>
MSC Fisheries Standard	<b>Version 2.01</b>
MSC General Certification Requirements	<b>Version 2.3</b>
MSC Pre-Assessment Reporting Template	<b>Version 3.1</b>

## 5 Unit(s) of Assessment

### 5.1 Unit(s) of Assessment

**Table 2 – Unit of Assessment (UoA)**

UoA 1	Description
Species	European anchovy ( <i>Engraulis encrasicolous</i> )
Stock	European anchovy in GSA 17-18
Geographical area	GSA 17-18
Gear	Purse seine
Client group	Associazione Armatori da Pesca di Molfetta
Other eligible fishers	None
Justification for choosing the Unit of Assessment	The European anchovy is assessed and managed considering both GSA 17 and 18.

## 6 Traceability

### 6.1 Traceability within the fishery

Italian fishery law requires that all vessels keep detailed logbooks with real time information on the species and quantities on board. Round weight is recorded after each haul, and conversion factors for each product are applied. When the catch is brought on board, the different species are immediately separated into different boxes. Each species is stored separately in the holds. 'Fish masters' are responsible for ensuring species are marked and stored appropriately and that certified and non-certified fish are not mixed. All crew members involved in the processing of the fish are also trained to ensure segregation of species throughout the process.

The Italian Coast Guard inspects all landings by Italian vessels

The European Union regulation (EC 1224/2009), is designed to ensure full traceability of all marine fishery products traded with the European Community. This is achieved by means of a catch certification scheme in cooperation with third countries. Fishery products can now only be imported into the European Community when accompanied by a catch certificate, issued by the competent authorities of the flag State certifying that the catches concerned have been made in accordance with applicable laws, regulations and international conservation and management measures.

The internal procedures on board the vessels as well as a high level of enforcement activities by authorities in Italy are considered sufficient to ensure fish and fish products are clearly identified and their origin is known

**Table 3 – Traceability within the fishery**

Factor	Description
<p>Will the fishery use gears that are not part of the Unit of Certification (UoC)?</p> <p>If Yes, please describe:</p> <ul style="list-style-type: none"> <li>- If this may occur on the same trip, on the same vessels, or during the same season;</li> <li>- How any risks are mitigated.</li> </ul>	<p><i>No, regulations related to fishing gear (e.g. mesh size and length) are the same for all small pelagic species in the Adriatic Sea.</i></p>
<p>Will vessels in the UoC also fish outside the UoC geographic area?</p> <p>If Yes, please describe:</p> <ul style="list-style-type: none"> <li>- If this may occur on the same trip;</li> <li>- How any risks are mitigated.</li> </ul>	<p><i>No, the UoC vessels only fish in the Adriatic Sea (see also Principle 3 – Effective management)</i></p>
<p>Do the fishery client members ever handle certified and non-certified products during any of the activities covered by the fishery certificate? This refers to both at-sea activities and on-land activities.</p> <ul style="list-style-type: none"> <li>- Transport</li> <li>- Storage</li> <li>- Processing</li> <li>- Landing</li> <li>- Auction</li> </ul> <p>If Yes, please describe how any risks are mitigated.</p>	<p><i>No. There is not any other certified fishery.</i></p>
<p>Does transshipment occur within the fishery?</p> <p>If Yes, please describe:</p> <ul style="list-style-type: none"> <li>- If transshipment takes place at-sea, in port, or both;</li> <li>- If the transshipment vessel may handle product from outside the UoC;</li> <li>- How any risks are mitigated.</li> </ul>	<p><i>No.</i></p>
<p>Are there any other risks of mixing or substitution between certified and non-certified fish?</p> <p>If Yes, please describe how any risks are mitigated.</p>	<p><i>No.</i></p>

## 7 Pre-assessment results

### 7.1 Pre-assessment results overview

#### 7.1.1 Overview

The scoring of the fishery is rather good for principles 2 and 3, while the fishery fails in principle 1 because the harvest strategy in place for the exploitation of anchovy in the Adriatic Sea is not going to achieve stock management objectives reflected in PI 1.1.1 SG80, as demonstrated by the evidences available in GFCM reports (see P 1.2.1 for more clarification).

#### 7.1.2 Recommendations

The CAB strongly recommends potential clients to implement a communications that may need to take place with management agencies (MIPAAFT and GFCM) to explain the MSC assessment process and the implications (including costs and benefits) of certification.

### 7.2 Summary of potential conditions by Principle

Principle of the Fisheries Standard	Number of PIs with draft scoring ranges <60
<b>Principle 1 – Stock status</b>	<b>1</b>
<b>Principle 2 – Minimising environmental impacts</b>	<b>0</b>
<b>Principle 3 – Effective management</b>	<b>0</b>

### 7.3 Summary of Performance Indicator level scores

Performance Indicator	Draft scoring range	Data deficient?
<b>1.1.1 – Stock status</b>	<b>60 – 79</b>	<b>No</b>
Rationale or key points		
In the latest assessment, the SSB is estimated at around 57,500 t in 2016 t, which is above the limit reference point Blim (45,936 t), i.e. biomass under which serious ecosystem impacts could occur. Stock biomass has been above Blim since the begin of the series (1975), though it is presently at historical low levels (GFCM, 2017). Therefore there is a high degree of certainty that the stock is above the point where serious ecosystem impacts could occur (SG100 is met).		
<b>1.1.2 – Stock rebuilding</b>	<b>60 – 79</b>	<b>No</b>
Rationale or key points		
The anchovy fishery in the Adriatic has no formal rebuilding plan. The 2016 GFCM recommendation is not considered sufficient as a rebuilding plan. The new CFP (Council Regulation 1328/2013) sets MSY as the main target for all fisheries. By 2020 at the latest, fishing mortality will be set at FMSY (the level of catches of a given stock that produces the MSY). According to the simulations presented in section 2.3.8 (GFCM, 2016a), it can be argued that the rebuilding timeframe for anchovy stock under assessment is 5 years. Taking into consideration the approximation for generation		

time (Box GSA4) the anchovy GT is equal to about 2 years. Therefore scoring guidance at SG60 is met, but not at SG100.

<b>1.2.1 – Harvest Strategy</b>	<b>&lt;60</b>	<b>No</b>
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Rationale or key points

The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points set in the recommendation GFCM/37/2013/1. However the emergency measures foreseen in the recommendation GFCM/40/2016/3 establishing level of catches not higher than 2014 and effort reduction will not achieve stock management objectives reflected in PI 1.1.1 SG80, as evidenced by the simulation reported in GFCM (2016a). Therefore the first scoring guidance at SG60 is not met.

<b>1.2.2 – Harvest control rules and tools</b>	<b>60 – 79</b>	<b>No</b>
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Rationale or key points

A multiannual management plan was agreed by the GFCM in 2013 and implemented in 2014, with the objective of maintaining exploitation rates at levels that provide high long term yields. The plan also introduced an effort management control system (days at sea) with the aim of directly control fishing effort. The plan aims for keeping fishing mortality rates levels that provide stock biomass to be above a biomass reference levels above the point of recruitment impairment (PRI).

However, the emergency measures foreseen in recommendation GFCM/40/2016/3 both in term of catches and fishing effort are not going to keep the stock fluctuating around a target level consistent with ecosystem needs for LTL species as evidenced by the GFCM MSE workshop. Therefore the first SG is met at SG 60 but not at SG 80.

<b>1.2.3 – Information and monitoring</b>	<b>≥80</b>	<b>No</b>
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Rationale or key points

A comprehensive range of information, including some that may not be directly relevant to the current harvest strategy, is available. As well as data used directly in the stock assessment (catch-at-age, survey and LPUE data), additional information includes changing patterns of growth, the relative spatial distribution of juvenile and adult and removals from other fleets. This meets the requirements at SG100.

<b>1.2.4 – Assessment of stock status</b>	<b>≥80</b>	<b>No</b>
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Rationale or key points

The stock size, fishing mortality rates and recruitment levels are estimated on an annual basis. The fishing mortality rate is compared to the reference points used by management.

The assessment methodology and level of accuracy is sufficient to apply the harvest control rule effectively. The principal assessment model is the SAM. The model is suitable for the available data. SAM is an age structure assessment method which assesses the annual age-disaggregated F and abundance from catch at age data, together with indices of abundance. SAM is used by GFCM and STECF for a number of stocks, has been widely tested and is generally considered robust as long as the catch-at-age and survey data are reliable.

<b>2.1.1 – Primary Outcome</b>	<b>≥80</b>	<b>No</b>
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Rationale or key points

According to the last assessment the Biomass SSBCUR is 161,000 tons and the lower limit (5 % percentile) is 126,000 tons which is above the BLIM estimated as 125,000 tons. Therefore, there is high degree of certainty that the primary species is above PRI but is below BMSY (500,000 tons, which is 2-time BPA).

<b>2.1.2 – Primary Management</b>	<b>≥80</b>	<b>No</b>
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Rationale or key points

The only management strategy currently implemented in the Adriatic concerns the management of sardine, anchovy, tuna and swordfish stocks, and the process of adopting sub-regional management plans for other stocks by the relevant authorities has yet to be finalised. Since there are not other primary species without a management strategy SG 60 and SG 80 are met. As such there is no management strategy in place specifically to minimise the mortality of unwanted catches by the UoA – SG 100 is not met.

<b>2.1.3 – Primary Information</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
As is described in detail for scoring issue 2.1.3 (a) above, the UoA is subject to both EU and GFCM fisheries data collection requirements. Some quantitative information is available to assess the impact of the UoA on non-target species with respect to status as a result of the application of the EU DCF and GFCM DCRF in the Adriatic Sea – SG 100 is met.		
<b>2.2.1 – Secondary Outcome</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
Information on catches of purse seiners targeting small pelagics in the Adriatic Sea comes from a number of sources: (i) data collected under the EU fisheries Data Collection Framework (DCF) / data collected under the GFCM Data Collection Reference Framework (DCRF), (ii) data from on-board observations carried out in line with EC 812/2004, (iii) information from scientific studies.		
Official Italian DCF catch data for purse seiners operating in the Adriatic Sea (i.e. GSAs 17 and 18) shows that numerous other species are caught and landed besides anchovy and sardine, albeit in very small volumes.		
Based on the data available, the assessment team determined that there are no main secondary species being impacted by the UoA – SG 60, SG 80 and SG 100 are met.		
<b>2.2.2 – Secondary Management</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
The only management strategy currently implemented in the Adriatic concerns the management of sardine, anchovy, tuna and swordfish stocks, and the process of adopting sub-regional management plans for other stocks by the relevant authorities has yet to be finalised. There is no management strategy in place specifically to manage the identified minor secondary species – SG 100 is not met.		
<b>2.2.3 – Secondary Information</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
There are no main secondary species - SG 60, SG 80 and SG 100 are met by default.		
<b>2.3.1 – ETP Outcome</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
Scientific data indicates that the populations of all ETP species encountered in the Adriatic Sea - loggerhead turtle ( <i>Caretta caretta</i> ), green turtle ( <i>Chelonia mydas</i> ), bottlenose dolphin ( <i>Tursiops truncatus</i> ), and striped dolphin ( <i>Stenella coeruleoalba</i> ) - are part of Mediterranean populations, which are recognised as distinct regional management units (Wallace et al., 2010; IUCN, 2012). Similarly there is evidence for distinct twaite shad populations in the Atlantic and Mediterranean Seas (Faria et al., 2012).		
With regards to turtles, scientific advances have recently been made to estimate the impact of fisheries bycatch on Mediterranean populations of loggerhead and green sea turtles (Casale and Heppell, 2016), but there are no set bycatch limits for protection and rebuilding of these populations in force at present. Similarly there are no set limits for the capture of twaite shad in the Mediterranean Sea. Since there are currently no national or international set limits for catches of the Mediterranean populations of the relevant ETP species scoring issue (a) was not scored.		



<b>2.3.2 – ETP Management</b>	<b>60 – 79</b>	<b>No</b>
Rationale or key points		
<p>GFCM Recommendation 35/2011/4 on incidental bycatch of sea turtles in fisheries in the GFCM Competence Area states that ‘Upon receipt of advice from the SAC, the GFCM shall consider, if necessary, additional measures to mitigate sea turtle bycatch in those fisheries which have been considered most relevant’, but no additional GFCM Decisions on management of sea turtle by-catch have been published since 2011 – SG 80 is not met.</p>		
<b>2.3.3 – ETP Information</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
<p>Whilst quantitative literature information on UoA related impacts is available, data which would allow for an assessment of the magnitude of these impacts at population level with a high degree of certainty is lacking. Moreover, data on post-release impacts due to injuries is lacking – SG 100 is not met.</p>		
<b>2.4.1 – Habitats Outcome</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
<p>It is widely acknowledged that extensive areas of soft bottom habitats are present in the Adriatic Sea (Vatova (1949; Gamulin-Brinda, 1967; Scardi et al., 1999; Jenkins, 2008, Piras et al., 2016). These soft bottoms show a general pattern of changing from sand to muddy / detritic bottoms with increasing distance from the shore (Brambati et al., 1983).</p> <p>Purse seiners operate in the water column, and as such are generally not in contact with benthic habitats and/or species. The fishing net is configured not to interact with the seabed during the actual fishing operation, and damage to the gear is likely to occur before any substantial damage to benthic communities takes place. Since fishing operations take place over soft bottom habitats and any contact of the fishing gear with bottom habitats will be brief to avoid damage to the fishing gear, the assessment team considers that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm – SG 60 and SG 80 are met.</p> <p>The team also consider that there is also evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm – SG 100 is met.</p>		
<b>2.4.2 – Habitats Management</b>	<b>≥80</b>	<b>Yes / No</b>
Rationale or key points		
<p>Based on (i) the variety of measures in place to reduce the impact of fisheries in general, and purse-seine fisheries in particular on the benthic habitats (see scoring issue (a) above for details), and (ii) available studies assessing the habitat impacts of fishing (e.g. Lucchetti and Sala, 2012; Lucchetti et al., 2018), there is some objective basis for confidence that the measures / partial strategy will work – SG 60 and SG 80 are met.</p> <p>Testing to support high confidence that the strategy will work has yet to be carried out, so SG 100 is not met.</p>		
<b>2.4.3 – Habitats Information</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
<p>The UoA's area of operation is continuously monitored by the relevant authorities through the use of VMS data. EU Member States have obligations to monitor any increase in risk to benthic habitats in general and sensitive habitats in particular under the Marine Strategy Framework Directive (EC 2008/56) as well as the Habitats Directive (EEC 94/43). Furthermore, under the MSFD Member States are required to implement ‘programmes of measures for the protection and management of the marine environment’, and to present interim reports describing progress in the implementation of these programmes to the Commission. The effectiveness of the implemented management measures is thus also monitored. The assessment team thus considers that adequate information continues to be collected to detect any increase in risk to the main habitats – SG 80 is met.</p>		

Although Member States have an obligation to measure changes in habitat distributions over time under the MSFD and Habitats Directive, the assessment team considers that sufficiently detailed habitat maps are currently not available for all marine habitats in the Adriatic Sea – SG 100 is not met.

2.5.1 – Ecosystems Outcome	≥80	No
Rationale or key points		
<p>Coll et al. (2007) developed a trophic mass-balance model to characterise the food web of the Northern and Central Adriatic and described a total of forty functional groups, including target and non-target fish, invertebrate groups and detritus groups. The model highlighted that there is important coupling between benthic and pelagic production of detritus, benthic invertebrates and plankton. Organisms characterising mainly the low and medium trophic levels, but also the upper trophic levels were important in terms of keystone and total effects: phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins were all ranked highly.</p> <p>A subsequent review of functional groups acting as keystones in the Mediterranean Sea food webs confirmed this unique combination of suprabenthos, micro- and mesozooplankton, dolphins and small pelagic fish in structuring the Adriatic Sea ecosystem, and highlighted the importance of benthic organisms as key structuring species with a relatively high proportion of biomass (Coll and Libralato, 2012). These functional groups were thus interpreted as being the features giving the ecosystem its characteristic nature and dynamics. Species which have been considered separately in this assessment (the P1 target species anchovy and sardine; ETP species striped and bottlenose dolphins) were not considered again.</p> <p>Since purse seiners operate in the water column they are generally not in contact with benthic habitats and/or species and as such the assessment team considers that the UoA is highly unlikely to disrupt the functional groups 'subrabenthos' and 'benthic invertebrates' as defined by Coll et al. (2007) to a point where there would be serious or irreversible harm. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted – SG 60 and SG 80 are met.</p> <p>The assessment team considers that there is also evidence that the UoA is highly unlikely to disrupt suprabenthos and benthic invertebrates – SG 100 is thus met for these scoring elements.</p> <p>The modelling results obtained by Coll et al. (2007) highlight important coupling between the demersal and pelagic compartments due to links between detritus, benthic invertebrates and zooplankton. Such tight coupling may be due to the relatively shallow waters, as well as the general water exchange patterns which prevail in the Adriatic. A high proportion of zooplankton production appears to be directed to detritus, thus maintaining high levels of benthic production, which in turn generate detritus which maintains zooplankton populations (Coll et al., 2007). The important link between benthic invertebrates and detritus components of Adriatic Sea food webs may be affected directly or indirectly by fishing activities. Fishing may be enhancing the re-suspension of organic matter, and discards may be converted to benthic detritus (Coll et al., 2007; Libralato et al., 2010). Although the re-suspension of organic matter is likely to be limited since purse seines only briefly touch the bottom at the beginning or end of fishing operations, if at all, and overall discard volumes by the UoA are low (see section on secondary species for detailed data on discard volumes), the assessment team nevertheless considers that there is 'evidence' that the UoA is highly unlikely to disrupt plankton communities – SG 100 is thus met.</p> <p>The potential direct and indirect impacts of the UoA on micro- and mesozooplankton communities through the re-suspension of organic matter and / or the conversion of discards to benthic detritus will not affect primary productivity by phytoplankton communities, which are mainly influenced by fluctuations in salinity, nutrients and temperature (Giani et al., 2012). For this scoring element SG 100 is thus met.</p>		

2.5.2 – Ecosystems Management	≥80	No
Rationale or key points		
<p>The management strategy in place is comprehensive, based on a wide range of applicable management measures, takes into account all the potential impacts of the UoA on key elements of the ecosystem (see scoring issue a), and once implemented successfully can be expected to work.</p> <p>Purse seiners operate in the water column, and as such are generally not in contact with benthic habitats and/or species; purse seines are widely considered very low impact gears with respect to benthic habitats (Lucchetti and Sala,</p>		

2012; STECF 12-12). The fishing net is configured not to interact with the seabed during the actual fishing operation, and damage to the gear is likely to occur before any irreversible harm to benthic invertebrates or suprabenthos is likely to be done. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted.

In light of the comprehensive strategy in place and the low impacts of the UoA on key elements of the ecosystem the assessment team considers that there is some objective basis for confidence that the measures/partial strategy will work – SG 60 and SG 80 are met.

Testing to support high confidence that the strategy will work has yet to be carried out, so SG 100 is not met.

**2.5.3 – Ecosystems Information**

**≥80**

**No**

Rationale or key points

Purse seiners operate in the water column, and as such are generally not in contact with benthic habitats and/or species; purse seines are widely considered very low impact gears with respect to benthic habitats (Lucchetti and Sala, 2012; STECF 12-12). The fishing net is configured not to interact with the seabed during the actual fishing operation, and damage to the gear is likely to occur before any irreversible harm to benthic invertebrates or suprabenthos is likely to be done. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted. The main impacts of the UoA on key ecosystem elements can thus be inferred – SG 60 is met. The assessment team considers that some of the main impacts of the UoA on key ecosystem elements have been investigated in detail – SG 80 is met.

Whilst the main interactions between the UoA and ecosystem elements can to an extent be inferred from existing information, these interactions have not been investigated in detail – SG 100 is not met for micro- / mesozooplankton, benthic invertebrates and suprabenthos.

Since interactions between the UoA and phytoplankton are highly unlikely to be taking place the assessment team considers that detailed investigations are not relevant – SG 100 is met for this scoring element.

**3.1.1 – Legal and customary framework**

**≥80**

**No**

Rationale or key points

The Italian management system is required to observe, but does not formally commit to, the rights of those dependent on fisheries.

The team shall interpret “formally commit” in scoring issue (c) at SG100 to mean that the UoA involved in the fishery can demonstrate a mandated legal basis where rights are fully codified within the fishery management system and/or its policies and procedures for managing fisheries under a legal framework. Such evidence has not been provided and therefore SG100 is not met.

**3.1.2 – Consultation, roles and responsibilities**

**≥80**

**No**

Rationale or key points

MEDAC is the main regular consultation process that enables local knowledge from the sector to be considered in development of the management system. However, it is not always explained by the EC how that information is used or not used. Industry stakeholders suggest this is also the case at a national level with Ministry consultation exercises, which are ad hoc exercises associated with the development of new policies prior to the drafting of regulation. However, this is not enough to consider that the management system considers always the information and explains how it is used or not use. Therefore, SG 100 is not met.

**3.1.3 – Long term objectives**

**≥80**

**No**

Rationale or key points

CFP and GFCM have clear long-term objectives that explicitly require the precautionary approach to be followed. The CFP contains clear long-term objectives that guide decision-making and are consistent with MSC principles. These are presented in section 7.6.1 of the report.

The CFP is explicit in requiring the precautionary approach to guide all management policy, including the national management of vessels in the UoA.

GFCM General Agreement Article 5:  
 In giving effect to the objective of this Agreement, the Commission shall:  
 c) apply the precautionary approach in accordance with the 1995 Agreement and the Code of Conduct for Responsible Fisheries. Therefore SG 100 is met.

<b>3.2.1 – Fishery specific objectives</b>	<b>60 – 79</b>	<b>No</b>
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Rationale or key points

Well-defined and measurable long term objectives are defined in GFRM Rec 37/2013:  
 A multi-annual management plan for the fisheries exploiting the small pelagic stocks in GFCM-GSA 17-18 must be developed and be coherent with the precautionary approach and designed to provide high long-term yields consistent with the maximum sustainable yield and to guarantee a low risk of stocks collapse while maintaining sustainable and relatively stable fisheries.

Specific objectives of the multiannual management plan for small pelagic fishery in the Adriatic Sea are outlined by the EU.

Well-defined and measurable short term objectives are also defined in GFCM Rec 40/2016/3.

The GFCM recommendations forming the fishery-specific management plan are required to comply with the wider GFCM recommendations concerning P2 aspects (SG60 is met). However these are only implicit in the management plan and explicit objectives solely focus on the two target species and such well-defined and measurable objectives do not extend to MSC P2 aspects.  
 SG80 is met for P1 aspects, but not for P2 and SG80 is therefore only partially met.

<b>3.2.2 – Decision making processes</b>	<b>≥80</b>	<b>No</b>
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Rationale or key points

The SAC and General Council reports are published on the GFCM website. Work to date, such as the management strategy review (GFCM, 2016) and compliance reports, are examples of comprehensive information on fishery performance and management actions that are readily available.

<b>3.2.3 – Compliance and enforcement</b>	<b>≥80</b>	<b>Yes</b>
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Rationale or key points

MCS in the Adriatic is a combination of technical measures such as the requirement for Vessel Monitoring Systems (VMS) on vessels over 12m (all UoA vessels) and e-logbooks. This is supported by at sea inspection, aerial surveillance and port inspection. There is also corroboration of logbook data with sales notes.

Control authorities have a reasonable expectation and confidence that MCS measures are effective. The resources available to and used by those authorities have demonstrated an ability to enforce the regulations applying to the fishery.

The Italian Coastguard manages monitoring control and surveillance of Italian vessels along with joint operations with the Croatian control authority.

This is supported by the European Fisheries Control Authority (EFCA) under its Mediterranean Joint Deployment Plan (JDP). The JDP was adopted in May 2014 and has the active participation of Croatia, Cyprus, France, Greece, Italy, Malta, Portugal, Slovenia and Spain. Joint control and inspection activities conducted under the JDP are exhaustive and based on a risk assessment approach. They cover fishing and fishing-related activities including farming, weighing, processing, marketing, transport and storage of fisheries products and sport and recreational fisheries.

The JDP is implemented based on the decisions of the Mediterranean steering group which supervises its overall strategy and orientation. Day-to-day operational activities are implemented through a technical joint deployment group and coordination centres in the Member States concerned (EFCA, 2014).

Relevant statistics on sanctions and inspections are not available for the UoA but only for the whole Italian fleets on “Ecomafie” report 2018 (<https://www.legambiente.it/rapporto-ecomafia>).

<b>3.2.4 – Management performance evaluation</b>	<b>≥80</b>	<b>No</b>
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#### Rationale or key points

External review can be considered to result from the scrutiny applied by the EC as a GFCM contracting party, along with the opportunity for other parties and the multi-stakeholder group, MEDAC, to review and comment. This exemplifies the regular internal and external review that the small pelagics plan is subject to and so SG100 is met.

## 7.4 Principle 1

### 7.4.1 Principle 1 background

Many studies have been carried out regarding the presence of a unique stock or different sub-populations of anchovy in the Adriatic Sea (GSAs 17 and 18). This has several implications for the management, i.e. differences in the growth features between sub-populations imply the necessity of ad hoc strategies in the management. The hypothesis of two distinct populations claims the evidence of morphometric differences between northern and southern Adriatic anchovy, such as colour and length, and some variability in their genetic structure (Bembo et al., 1996). Nevertheless, many authors warn against the use of morphological data in studies on population structure (Tudela, 1999) and, a recent study from Magoulas et al. (2006), revealed the presence of two different clades in the Mediterranean, one of those is characterized by a high frequency in the Adriatic Sea (higher than 85%) with a low nucleotide diversity (around 1%). Also, outcomes of EU project STOCKMED indicated existence of one single stock of anchovy in GSA17 and western part of GSA18 (Fiorentino et al., 2014).

In the whole Adriatic Sea, anchovy is exploited by purse seiners and pelagic trawlers belonging to Italy, Croatia and, to a much smaller extent, Slovenia, Albania and Montenegro. The Italian fleet is composed of about 65 pairs of mid-water trawlers and about 20 purse seiners (with quite different tonnage), with the former being predominant on the latter ones. Most of the Italian boats whose port of registry is located in GSA 18 actually fish and land in GSA 17. Croatia has about 270 active purse seiners targeting small pelagics (mainly sardine) while in Slovenia only 3 purse seiners are currently active. In Montenegro most of the catches are originated from small-scale beach seine fisheries and from small purse seiners fisheries in coastal waters (< 70 m depth). Exploitation is based on all the age classes from 0 to 4+. The Italian catches of anchovy represent the majority of the catches, while the Croatian small pelagic fishery concentrates mainly on sardine.

In Figure 7.4.1.1, the trend in landings from 1975 to 2016 for the Eastern Adriatic (Croatia, Slovenia, Albania and Montenegro) and the western Adriatic (Italy GSA17-18) are shown. Slovenian, Albania and Montenegrin catches are low (around 320 tonnes in 2015). For Albania and Montenegro landings were assumed as a fixed percentage of Croatian catches before 2012 and 2007, respectively.

The catch of anchovy reached a maximum in the 1980s, whose main contribution was from the Italian fleet; in 1986-1987 the catch collapsed to the historical minimum, and then started to increase again reaching a new peak in 2007. The Croatian share started increasing in 2000 and rose constantly until 2011 (~15,000 tonnes); in 2012 dropped to lower levels (less than 10,000 tonnes) to increase again in 2015. The overall catch of anchovy for 2016 is 34,252 tonnes and shows increase compared to average of period 2013-2015 (32,955 tonnes), but a slight decrease compared to 2015 catches (39,737 tonnes).

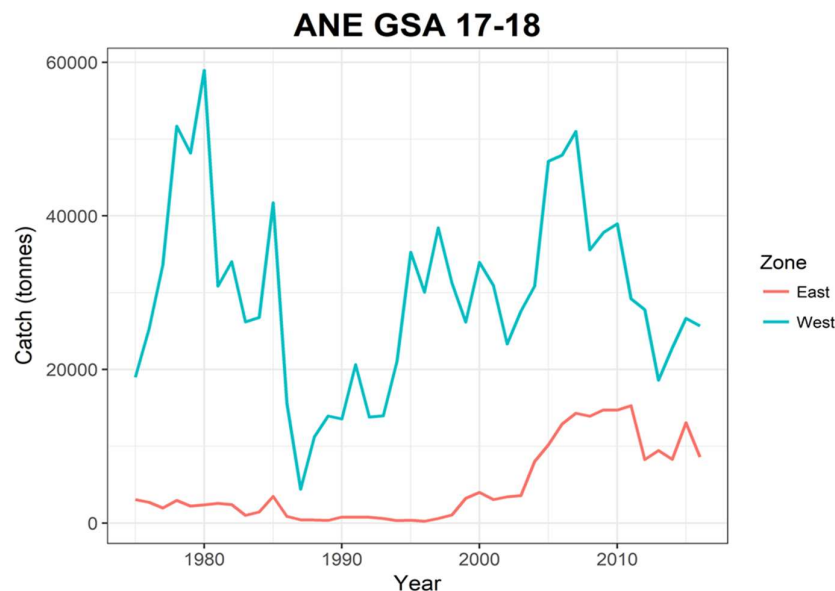


Figure 7.4.1.1: Adriatic catches for the whole period assessed (1975-2016) for the Eastern and Western side of GSA17-18.

The growth parameters used for the estimation of natural mortality are the same already used in past assessments and are shown in Table 2.2.1 and 2.2.3. Proportion of mature and natural mortality are also shown (Tab 6.7.2 and Tab 6.7.3).

Table 7.4.1.1: Maximum size, size at first maturity and size at recruitment.

	Females	Males
Maximum size	19 cm TL	19 cm TL
Size at first maturity	6-8 cm TL	6-8 cm TL
Recruitment size to fishery	7.5 cm TL	7.5 cm TL

Table 7.4.1.2: Natural mortality (*M*) vector and proportion of matures by age (Sex combined).

Age	Natural mortality	Proportion of matures
0	2.36	0.5
1	1.10	1.0
2	0.81	1.0
3	0.69	1.0
4+	0.62	1.0

Table 7.4.1.3: Growth and length-weight model parameters

	Sex combined		Sex combined
$L_{\infty}$	19.4	<b>a</b>	0.0032
<b>k</b>	0.57	<b>b</b>	3.2339
<b>t<sub>0</sub></b>	-0.5		

Fishery independent information is available on the stock of anchovy in the Adriatic Sea. The Italian acoustic survey has been carried out since 1976 in the Northern Adriatic Sea (half of the western area) and since 1987 also in the Mid and southern Adriatic Sea (the other half of the western area). Since 2007, Slovenia was included in the western acoustic survey estimations. Since 2009, the MEDIAS (MEDiterranean Acoustic Surveys) project entered in the EU Data Collection framework since 2009.

Since 2008, and with exception of 2009, the Eastern GSA 18 (Montenegro and Albania waters) was monitored by Italian acoustic survey group in collaboration with local Institutes.

The eastern part of GSA 17 (except Slovenia) was covered by Croatian national pelagic monitoring program (i.e. acoustic survey) PELMON since 2004. Since 2013 this acoustic survey has been carried out within EU MEDIAS framework.

Abundance indices at age for the West and East acoustic surveys are shown in Table 7.4.1.4.

Table 7.4.1.4: Abundance at age from acoustic survey for the years 2004-2016.

Year	Age 0	Age 1	Age 2	Age 3	Age 4
2004	35560685	18764020	613692	5645	2540
2005	40787857	10033202	134557	4072	1832
2006	76696622	26700888	3988381	151803	61547
2007	73618538	28091728	2747682	70127	25026
2008	64356278	44561926	1557486	64161	13156
2009	73769477	21903651	429701	16421	17861

Year	Age 0	Age 1	Age 2	Age 3	Age 4
2010	45236308	26066281	566016	21460	23342
2011	49485704	23424898	305350	17105	13498
2012	86799211	18037774	62577	6364	6915
2013	43260113	18805485	480456	946	158
2014	28448153	18667773	273617	133	0
2015	18400911	14596893	621395	47936	22799
2016	11384028	4493347	21872	0	0

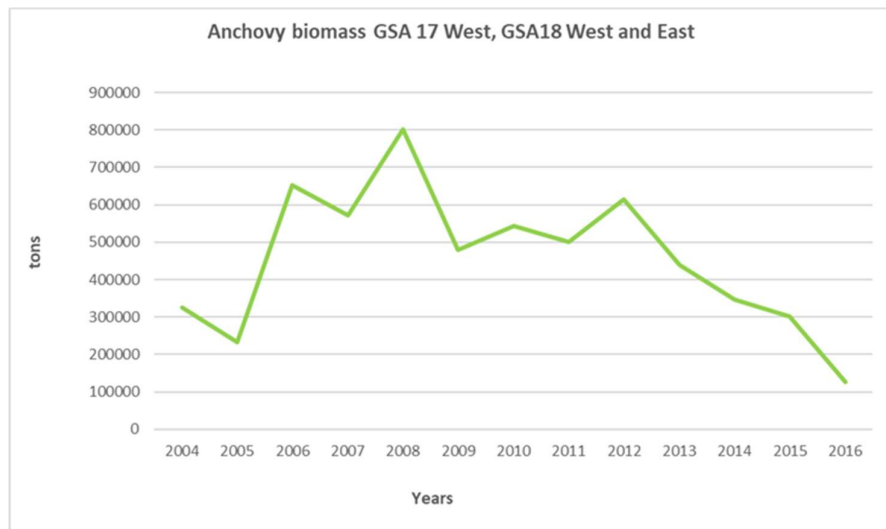


Figure 7.4.1.2. Biomass (tonnes) of anchovy in the Western GSA 17 and Western and Eastern GSA 18 from acoustic surveys carried out from 2004 to 2016.

State-Space Assessment Program (SAM) has been performed to assess the stock status of anchovy in GSA 17 from 1975 to 2016. Acoustic surveys data were available and used as tuning indices from 2004 to 2016.

The SAM environment is encapsulated into the Fisheries Library in R (FLR) (Kell *et al.*, 2007) in the form of the package “FLSAM”. The state-space assessment model (SAM) is an assessment model which is used for several assessments within ICES. The model allows selectivity to evolve gradually over time. It has fewer model parameters than full parametric statistical assessment models, with quantities such as recruitment and fishing mortality modelled as random effects. MEDIAS estimates were included in the assessment model considering three tuning indexes:

- 1) Acoustic survey West that includes the western side of GSA 17 and the entire GSA 18 in the form of numbers-at-age from 2004 to 2016, with data based on a preliminary agreement and the discussion inside AdriaMed Study Group on intercalibration of anchovy otolith reading and taking into account the ICES WKARA2 2016 Report;
- 2) Acoustic survey East, that includes the eastern side of GSA 17 in the form of numbers-at-age from 2013 to 2016, with data based on ICES WKARA2 age-reading protocol;
- 3) Acoustic survey East biomass that includes the eastern side of GSA 17 in the form of total biomass from 2003 to 2012.



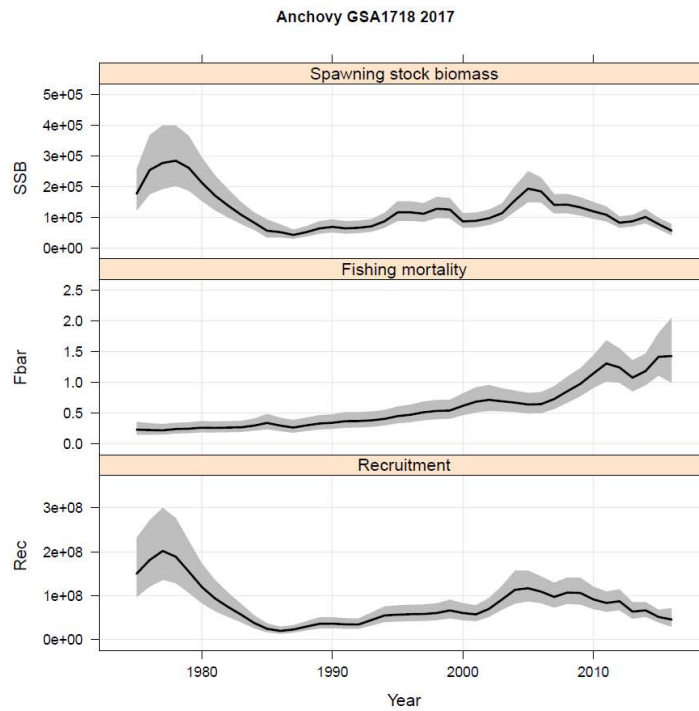


Figure 7.4.1.3. Anchovy results from SAM model: SSB, F and recruitment estimates.

Due to the very short time series of the tuning indexes (2013-2016 for the Echosurvey East), the retrospective analysis was run on 1 year only. The outputs are shown in Figure 7.4.1.4 and describe a rather consistent behavior of the assessment model, with the only exception of the slight variability and uncertainty in F estimate in the last year.

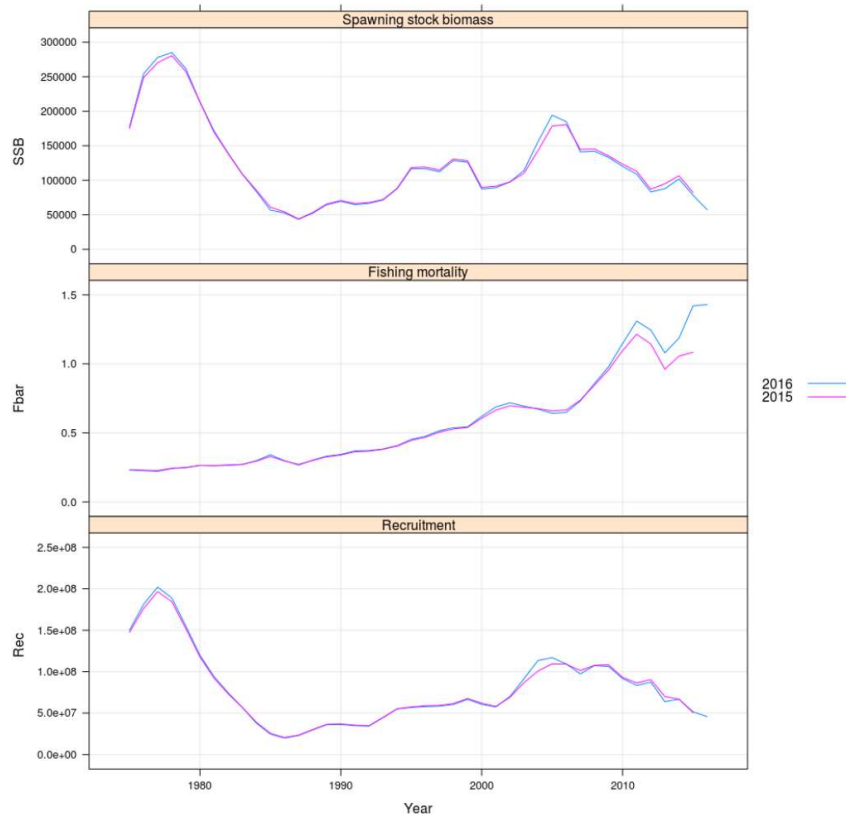


Figure 7.4.1.4. FLSAM retrospective patterns for currently accepted assessment.

Table 7.4.1.5: List of reference points and empirical reference values.

Indicator	Limit Reference point/empirical reference value	Value	Target Reference point/empirical reference value	Value	Comments
SSB	B <sub>lim</sub>	45,936	B <sub>pa</sub>	91,872	2015 GFCM benchmark assessment
F			F <sub>MSY</sub>	0.55	2015 GFCM benchmark assessment
			F <sub>MSY</sub>	0.64	2017 GFCM WGSASP

A multi-annual management plan for small pelagic fisheries in the Adriatic Sea has been established by the General Fisheries Commission for the Mediterranean in 2012 (GFCM/37/2013/1). In particular, the plan establishes “a temporal closure period of no less than 15 continuous days for each vessels fishing small pelagic stocks in GSA 17 in order to protect nursery and spawning areas. This closure shall be designated in waters under the jurisdiction and shall take place between 1 April and 31 August” (GFCM/38/2014/1). Moreover, for year 2015 it was decided that “each fishing vessel targeting anchovy shall not exceed 144 fishing days per year” (GFCM/38/2014/1). In addition, in 2016 the GFCM Recommendation (REC.CM-GFCM/40/2016/3) established further emergency measures for the small pelagic stocks in the Adriatic Sea. In particular, the plan establishes “a temporal closure period of no less than 15 continuous days and up to 30 continuous days for sardine from the 1st of October to 31st of March, and for anchovy from the 1st of April to the 30th of September. Also, additional closures for vessels over 12 m length overall for no less than 6 months, which shall cover at least 30 percent of the area which has been identified as nursery area or area important for the protection of early age classes of fish (in territorial and inner sea), are expected.

Regarding the closure period, Italy has been enforcing for years a general regulation concerning the fishing gears and since 1988 a suspension (about 42 days) of fishing activity of pelagic trawlers and purse seiners has implemented in summer.

In Croatia from 2013 management plan for purse seiners “srdelara” has been endorsed. A closure period is observed from the 1st December to the 31st January (except period 14th-24th December) and 1st-31st of May from the Croatian purse seiners. In 2011 and 2012 the closure season for the Italian fleet was extended to 60 days (August and September). Also, additional spatial closure for vessels over 12 m length overall has been applied in Croatian inner sea (GSA17-East) since 2015, which is bealived to be nursery area and/or area important for the protection of early age classes.

In Montenegro a closure period of 15 days was observed from the first to the 15th of April, whereas in Slovenia from 17th of March to 15th of April.

Based on the MSC criteria, anchovy can be considered as a key Low Trophic-Level species due to their life history: feeding on plankton, short lived, rapid growth, early maturing, high fecundity, small body size and formation of dense schools.

## 7.4.2 Catch profiles

Anchovy landings data are available starting from 1975, and refer to the whole Adriatic (GSAs 17 and 18) (table 7.4.2.1).

Table 7.4.2.1 European anchovy in GSAs 17 & 18. Landings for GSA 17 and 18.

Year	Landings (t)	Year	Landings (t)
1975	22049	1996	30304
1976	28001	1997	39040
1977	35565	1998	32294
1978	54624	1999	29383

Year	Landings (t)	Year	Landings (t)
1979	50378	2000	37952
1980	61323	2001	33984
1981	33422	2002	26721
1982	36425	2003	31172
1983	27201	2004	38859
1984	28211	2005	57301
1985	45198	2006	60803
1986	16446	2007	65317
1987	4848	2008	49486
1988	11624	2009	52578
1989	14287	2010	53689
1990	14363	2011	44487
1991	21371	2012	36045
1992	14557	2013	28043
1993	14562	2014	31085
1994	21424	2015	39737
1995	35665	2016	34252

### 7.4.3 Total Allowable Catch (TAC) and catch data

No Total Allowable Catch (TAC) are set for this fishery; the most recent catch data are shown in Table 7.4.3.1. Those data refer to the landings of anchovy in the whole Adriatic (GSAs 17 and 18).

	Year	2016	Amount	-
TAC	Year	<b>2016</b>	Amount	-
UoA share of TAC	Year	<b>2016</b>	Amount	-
UoA share of total TAC	Year	<b>2016</b>	Amount	-
Total green weight catch by UoC	Year (most recent)	<b>2016</b>	Amount	<b>34252 t</b>
Total green weight catch by UoC	Year (second most recent)	<b>2015</b>	Amount	<b>39737 t</b>

## 7.4.4 Principle 1 Performance Indicator scores and rationales – delete if not applicable

### PI 1.1.1A – key Low Trophic-Level – delete if not applicable

Based on the MSC criteria, anchovy can be considered as a key Low Trophic-Level species due to their life history: feeding on plankton, short lived, rapid growth, early maturing, high fecundity, small body size and formation of dense schools. Two main studies (i.e.: Libralato et al., 2010 and Coll et al., 2007) have described the most important features of the Adriatic Sea in terms ecosystem traits and are useful to define anchovy as a MSC LTL species.

Libralato et al. (2010) highlighted that the small pelagics are key functional groups in the Adriatic Sea food web. The high impact of small pelagics on the trophic webs was a feature previously identified in the Mediterranean Sea (Palomera et al., 2007). Due to their ecological importance, their overexploitation may produce deep changes in the structure and functioning of the marine ecosystem (as explored in marine ecosystems by means of modelling simulations; Coll et al., 2007).

PI 1.1.1A		The stock is at a level which has a low probability of serious ecosystem impacts		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Stock status relative to ecosystem impairment			
	Guide post	It is <b>likely</b> that the stock is above the point where serious ecosystem impacts could occur.	It is <b>highly likely</b> that the stock is above the point where serious ecosystem impacts could occur.	There is a <b>high degree of certainty</b> that the stock is above the point where serious ecosystem impacts could occur.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				
In the latest assessment, the SSB is estimated at around 57,500 t in 2016 t, which is above the limit reference point $B_{lim}$ (45,936 t), i.e. biomass under which serious ecosystem impacts could occur. Stock biomass has been above $B_{lim}$ since the begin of the series (1975), though it is presently at historical low levels (GFCM, 2017). There is no estimate of $B_0$ that could be used for this PI; however, current SSB is above 50% of the $B_{pa}$ (biomass level consistent with maximum sustainable yield). Therefore there is a high degree of certainty that the stock is above the point where serious ecosystem impacts could occur (SG100 is met).				
<b>b</b>	Stock status in relation to ecosystem needs			
	Guide post		The stock is at or fluctuating around a level consistent with ecosystem needs.	There is a <b>high degree of certainty</b> that the stock has been fluctuating around a level consistent with ecosystem needs or has been above this level over recent years.
	Met?		<b>No</b>	<b>No</b>
Rationale				
The SSB in 2016 is estimated at 57,469 t and is below the $B_{pa}$ (91,872 t) (GFCM, 2017), i.e. biomass level consistent with maximum sustainable yield. F current is almost two times higher than $F_{MSY}$ . This triggers PI 1.1.2 – stock rebuilding.				
References				
Coll, M., Santojanni, A., Palomera, I., Tudela, S. and Arneri, E. (2007) An ecological model of the Northern and Central Adriatic Sea: Analysis of ecosystem structure and fishing impacts. <i>Journal of Marine Systems</i> 67, 119–154.				
Coll, M., Libralato, S. (2012). Contributions of food web modelling to the ecosystem approach to marine resource management in the Mediterranean Sea. <i>Fish and fisheries</i> , 13(1), 60-88.				

GFCM (2017). Stock assessment form small pelagics. *Engraulis encrasicolus* in GSAs 17 and 18. Working group on stock assessment of small pelagics species. 41 p.

Libralato, S., Christensen, V. and Pauly, D. (2006). A method for identifying keystone species in food web models. *Ecological Modelling* 195, 153–171.

Libralato, S., Coll, M., Tempesta, M. et al. (2010) Foodweb traits of protected and exploited areas of the Adriatic Sea. *Biological Conservation* 143, 2182–2194.

Palomera, I., Olivar, M., Salat, J., Sabatés, a., Coll, M., García, a., and Morales-Nin, B. (2007). Small pelagic fish in the NW Mediterranean Sea: An ecological review. *Progress in Oceanography*, 74(2-3): 377–396.

**Stock status relative to reference points**

	Type of reference point	Value of reference point	Current stock status relative to reference point
Reference point used in scoring stock relative to ecosystem impairment (S <sub>ia</sub> )	$B_{lim}$	45,936 t	$57,469/B_{lim} = 1.25$
Reference point used in scoring stock relative to ecosystem needs (S <sub>ib</sub> )	$B_{pa}$	91,872 t	$57,469/B_{pa} = 0.63$

**Draft scoring range and information gap indicator added at Announcement Comment Draft Report**

Draft scoring range	<b>60-79</b>
Information gap indicator	<b>Information sufficient to score PI</b>
Data-deficient? (Risk-Based Framework needed)	<b>No</b>

**Overall Performance Indicator scores added from Client and Peer Review Draft Report**

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 1.1.2 – Stock rebuilding

PI 1.1.2		Where the stock is reduced, there is evidence of stock rebuilding within a specified timeframe		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Rebuilding timeframes			
	Guide post	A rebuilding timeframe is specified for the stock that is the <b>shorter of 20 years or 2 times its generation time</b> . For cases where 2 generations is less than 5 years, the rebuilding timeframe is up to 5 years.		The shortest practicable rebuilding timeframe is specified which does not exceed <b>one generation time</b> for the stock.
	Met?	<b>Yes</b>		<b>No</b>
Rationale				
<p>The anchovy fishery in the Adriatic has no formal rebuilding plan. The 2016 GFCM recommendation is not considered sufficient as a rebuilding plan. The new CFP (Council Regulation 1328/2013) sets MSY as the main target for all fisheries. By 2020 at the latest, fishing mortality will be set at <math>F_{MSY}</math> (the level of catches of a given stock that produces the MSY). Therefore scoring guidance at SG60 is met, but not at SG100.</p>				
<b>b</b>	Rebuilding evaluation			
	Guide post	Monitoring is in place to determine whether the rebuilding strategies are effective in rebuilding the stock within the specified timeframe.	There is <b>evidence</b> that the rebuilding strategies are rebuilding stocks, <b>or it is likely</b> based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the <b>specified timeframe</b> .	There is <b>strong evidence</b> that the rebuilding strategies are rebuilding stocks, <b>or it is highly likely</b> based on simulation modelling, exploitation rates or previous performance that they will be able to rebuild the stock within the <b>specified timeframe</b> .
	Met?	<b>Yes</b>	<b>No</b>	<b>No</b>
Rationale				
<p>The assessment of anchovy stock in GSA17-18 is carried out every year by both GFCM and STECF. However, at the moment there is no evidence that the rebuilding strategy foreseen in the recommendation GFCM/40/2016/3 will be able to rebuild the stock within the specified timeframe (by 2020). The modeling approach performed shows that the strategy proposed by GFCM recommendations (GFCM, 2017a) will not be able to rebuild the stock in the specified timeframe. Therefore second scoring guidance at SG60 is met but not at SG80.</p>				
References				
<p>GFCM (2017a). Report of the Workshop on the assessment of management measures (WKMSE). FAO headquarters, Rome, Italy, 20–23 February 2017. 87 p.</p>				

### Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>60-79</b>
Information gap indicator	<b>Information sufficient to score PI</b>

### Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 1.2.1 – Harvest strategy

PI 1.2.1		There is a robust and precautionary harvest strategy in place		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Harvest strategy design			
	Guide post	The harvest strategy is <b>expected</b> to achieve stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy <b>work together</b> towards achieving stock management objectives reflected in PI 1.1.1 SG80.	The harvest strategy is responsive to the state of the stock and is <b>designed</b> to achieve stock management objectives reflected in PI 1.1.1 SG80.
	Met?	<b>No</b>	<b>No</b>	<b>No</b>
Rationale				
<p>The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy work together towards achieving management objectives reflected in the target and limit reference points set in the recommendation GFCM/37/2013/1. However the emergency measures foreseen in the recommendation GFCM/40/2016/3 establishing level of catches not higher than 2014 and effort reduction will not achieve stock management objectives reflected in PI 1.1.1 SG80, as evidenced by the simulation reported in GFCM (2016a). Therefore the first scoring guidance at SG60 is not met.</p>				
<b>b</b>	Harvest strategy evaluation			
	Guide post	The harvest strategy is <b>likely</b> to work based on prior experience or plausible argument.	The harvest strategy may not have been fully <b>tested</b> but evidence exists that it is achieving its objectives.	The performance of the harvest strategy has been <b>fully evaluated</b> and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.
	Met?	<b>No</b>	<b>No</b>	<b>No</b>
Rationale				
<p>There is no evidence that the harvest strategy as reported in recommendation GFCM/40/2016/3 is going to work. Therefore second scoring guidance at SG60 is not met.</p>				
<b>c</b>	Harvest strategy monitoring			
	Guide post	Monitoring is in place that is expected to determine whether the harvest strategy is working.		
	Met?	<b>Yes</b>		
Rationale				
<p>GFCM (2017a) carried out a management strategy evaluation (MSE) of the multi-annual management for sardine and anchovy in the Adriatic Sea. Moreover also STECF carried out a revision of the small pelagics stocks in the Adriatic (STECF, 2015). Thus is possible to conclude that a monitoring is in place to determine whether the harvest strategy is working.</p>				
<b>d</b>	Harvest strategy review			

	Guide post			The harvest strategy is periodically reviewed and improved as necessary.
	Met?			<b>Yes</b>

#### Rationale

Part III of recommendation GFCM/40/2016/3 states that the Scientific Advisory Committee of GFCM shall assess in 2017 the relative merits of different management regimes for small pelagic fisheries in the Adriatic Sea. This shall include an assessment of the biological, economic, social and market impacts. In particular SAC shall assess in 2017 whether the impact of the measures adopted under recommendation GFCM/40/2016/3 will enable achievement of the objective of recommendation GFCM/37/2013/1. Thus it is possible to conclude that the harvest strategy is periodically reviewed.

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

#### Rationale

NA

	<b>Review of alternative measures</b>			
<b>f</b>	Guide post	There has been a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock, and they are implemented, as appropriate.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>

#### Rationale

According to Art. 15 of the new CFP (No 1380/2013) a progressive elimination of discards in all Union fisheries through the introduction of a landing obligations is foreseen, and in particular for small pelagic fishery in the Mediterranean at the begin of 2015. The Article 15(6) of Regulation (EU) No 1380/2013 empowers the Commission to adopt discard plans by means of a delegated act for a period of no more than three years on the basis of joint recommendations developed by Member States in consultation with the relevant Advisory Councils. In accordance with the joint recommendation provided by the MEDAC, the discard plan should cover all catches of species which are subject to minimum sizes as defined in Annex III to Regulation (EC) No 1967/2006 caught in small pelagic fisheries using pelagic mid-water trawl and/or purse seines in the Mediterranean Sea (i.e. fisheries for anchovy, sardine, mackerel and horse mackerel) from 1 January 2015. Thus it is possible to conclude that a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of the target stock is in place and reviewed every 3 years. Therefore this scoring guidance is met at SG80 but not at SG100.

#### References

EC (2013) EC Regulation 1380/2013 on the Common Fisheries Policy

GFCM (2017a). Report of the Workshop on the assessment of management measures (WKMSE). FAO headquarters, Rome, Italy, 20–23 February 2017. 87 p.

STECF (2015). Small pelagic stocks in the Adriatic Sea. Mediterranean assessments part 1 (STECF-15-14). Publications Office of the European Union, Luxembourg, EUR 27492 EN, JRC 97707, 52 pp.



Draft scoring range	<60
Information gap indicator	<b>Information sufficient to score PI</b>

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 1.2.2 – Harvest control rules and tools

PI 1.2.2		There are well defined and effective harvest control rules (HCRs) in place		
Scoring Issue		SG 60	SG 80	SG 100
<b>HCRs design and application</b>				
<b>a</b>	Guide post	Generally understood HCRs are in place <b>or available</b> that are <b>expected</b> to reduce the exploitation rate as the point of recruitment impairment (PRI) is approached.	<b>Well defined HCRs are in place</b> that <b>ensure</b> that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock <b>fluctuating around</b> a target level consistent with (or above) MSY, or for key LTL species a level consistent with ecosystem needs.	The HCRs are expected to keep the stock <b>fluctuating at or above</b> a target level consistent with MSY, or another more appropriate level taking into account the ecological role of the stock, <b>most</b> of the time.
	Met?	Yes	No	No
<b>Rationale</b>				
<p>A multiannual management plan was agreed by the GFCM in 2013 and implemented in 2014, with the objective of maintaining exploitation rates at levels that provide high long term yields. The plan also introduced an effort management control system (days at sea) with the aim of directly control fishing effort. The plan aims at keeping fishing mortality rates levels that provide stock biomass to be above a biomass reference levels above the point of recruitment impairment (PRI).</p> <p>However, the emergency measures foreseen in recommendation GFCM/40/2016/3 both in term of catches and fishing effort can reduce exploitation rate as the PRI is approached, but are not going to keep the stock fluctuating around a target level consistent with ecosystem needs for LTL species as evidenced by the GFCM MSE workshop. Therefore the first SG is met at SG 60 but not at SG 80.</p>				
<b>HCRs robustness to uncertainty</b>				
<b>b</b>	Guide post		The HCRs are likely to be robust to the main uncertainties.	The HCRs take account of a <b>wide</b> range of uncertainties including the ecological role of the stock, and there is <b>evidence</b> that the HCRs are robust to the main uncertainties.
	Met?		<b>Yes</b>	<b>No</b>
<b>Rationale</b>				
<p>The evaluation of the multiannual management plan carried out in the framework of GFCM (2016a), analysed the robustness of the plan to uncertainties mainly related to stock-recruitment relation. However is not possible to say that the evaluation take into account a wide range of uncertainty. Therefore Issue 2 SG 100 is not met.</p>				
<b>HCRs evaluation</b>				
<b>c</b>	Guide post	There is <b>some evidence</b> that tools used <b>or available</b> to implement HCRs are appropriate and effective in controlling exploitation.	<b>Available evidence indicates</b> that the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs.	<b>Evidence clearly shows</b> that the tools in use are effective in achieving the exploitation levels required under the HCRs.
	Met?	Yes	No	No
<b>Rationale</b>				
<p>The recommendation GFCM/38/2014/1 introduced emergency measures of total allowance effort for the year 2015 aiming for each fishing vessel targeting anchovy not more than 144 fishing days. Taking into consideration part VII of recommendation GFCM/37/2013/1, national control programmes for the implementation of the provisions of</p>				

GFCM recommendations are established by the concerned parties through specific plans. A proper and accurate monitoring and recording of the monthly catches and fishing effort deployed is in place so that a mechanism is set-up at national level to avoid fishing effort overshooting.

Available data on fishing effort exerted by Italian PTM in GSA17 in 2015 show that there is a reduction in effort in comparison to 2014 (from 16,000 days x vessel to 14,000 days x vessel) but an increase in landings. However, other gears are involved in this fishery and, due to the lack of 2015 data for the Croatian fleet exploiting small pelagics (not available during the drafting of the present report) is not possible to judge if the tools in use are appropriate and effective in achieving the exploitation levels required under the HCRs. Therefore SG 80 is not met.

**References**

GFCM (2017a). Report of the Workshop on the assessment of management measures (WKMSE). FAO headquarters, Rome, Italy, 20–23 February 2017. 87 p.

**Draft scoring range and information gap indicator added at Announcement Comment Draft Report**

Draft scoring range	<b>60-79</b>
Information gap indicator	<b>Information sufficient to score PI</b>

**Overall Performance Indicator scores added from Client and Peer Review Draft Report**

Overall Performance Indicator score	
Condition number (if relevant)	

### PI 1.2.3 – Information and monitoring

PI 1.2.3		Relevant information is collected to support the harvest strategy		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Range of information			
	Guide post	Some relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.	Sufficient relevant information related to stock structure, stock productivity, fleet composition and other data are available to support the harvest strategy.	A comprehensive range of information (on stock structure, stock productivity, fleet composition, stock abundance, UoA removals and other information such as environmental information), including some that may not be directly related to the current harvest strategy, is available.
	Met?	Yes	Yes	Yes
Rationale				
A comprehensive range of information, including some that may not be directly relevant to the current harvest strategy, is available. As well as data used directly in the stock assessment (catch-at-age, survey and LPUE data), additional information includes changing patterns of growth, the relative spatial distribution of juvenile and adult and removals from other fleets. This meets the requirements at SG100.				
<b>b</b>	Monitoring			
	Guide post	Stock abundance and UoA removals are monitored and <b>at least one indicator</b> is available and monitored with sufficient frequency to support the harvest control rule.	Stock abundance and UoA removals are <b>regularly monitored at a level of accuracy and coverage consistent with the harvest control rule, and one or more indicators</b> are available and monitored with sufficient frequency to support the harvest control rule.	<b>All information</b> required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of inherent <b>uncertainties</b> in the information [data] and the robustness of assessment and management to this uncertainty.
	Met?	Yes	Yes	No
Rationale				
The data required by the harvest control rule are monitored with high frequency and at a level of accuracy and coverage consistent with the HCR. The main information required to support the stock assessment are the total catches, age and weight composition of the catches, abundance surveys together with age and weight composition of the survey catch. However, the understanding of some of the uncertainties in the data is incomplete (e.g. Natural mortality considered as constant) and some of the data used to model the maturity ogive for example, is potentially out of date. Therefore SG 100 is not met.				
<b>c</b>	Comprehensiveness of information			
	Guide post		There is good information on all other fishery removals from the stock.	
	Met?		Yes	
Rationale				

Taking into consideration FAO AdriaMed regional project activities facilitating the cooperation among Adriatic countries is possible to conclude that information on all removal from all fleets and nations is well recorded and is appropriate for their use in the assessment

#### References

GFCM (2017). Stock assessment form small pelagics. *Engraulis encrasicolus* in GSAs 17 and 18. Working group on stock assessment of small pelagics species. 41 p.

#### Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>&gt;80</b>
Information gap indicator	<b>Information sufficient to score PI</b>
Data-deficient? (Risk-Based Framework needed)	<b>No</b>

#### Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 1.2.4 – Assessment of stock status

PI 1.2.4		There is an adequate assessment of the stock status		
Scoring Issue		SG 60	SG 80	SG 100
<b>Appropriateness of assessment to stock under consideration</b>				
<b>a</b>	Guide post		The assessment is appropriate for the stock and for the harvest control rule.	The assessment takes into account the major features relevant to the biology of the species and the nature of the UoA.
	Met?		<b>Yes</b>	<b>Yes</b>
<b>Rationale</b>				
<p>The stock size, fishing mortality rates and recruitment levels are estimated on an annual basis. The fishing mortality rate is compared to the reference points used by management.</p> <p>The assessment methodology and level of accuracy is sufficient to apply the harvest control rule effectively. The principal assessment model is the SAM. The model is suitable for the available data. SAM is an age structure assessment method which assesses the annual age-disaggregated F and abundance from catch at age data, together with indices of abundance. SAM is used by GFCM and STECF for a number of stocks, has been widely tested and is generally considered robust as long as the catch-at-age and survey data are reliable.</p>				
<b>Assessment approach</b>				
<b>b</b>	Guide post	The assessment estimates stock status relative to generic reference points appropriate to the species category.	The assessment estimates stock status relative to reference points that are appropriate to the stock and can be estimated.	
	Met?	<b>Yes</b>	<b>Yes</b>	
<b>Rationale</b>				
<p>The assessment estimates spawning stock biomass and fishing mortality on an annual basis and these estimates are directly comparable against the reference points.</p>				
<b>Uncertainty in the assessment</b>				
<b>c</b>	Guide post	The assessment <b>identifies major sources</b> of uncertainty.	The assessment <b>takes uncertainty into account</b> .	The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a <b>probabilistic</b> way.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Rationale</b>				
<p>The current assessment model (SAM) incorporates uncertainty in the input data derived from sampling. The stock assessment includes probabilistic outputs indicating uncertainties. Therefore SG 100 is met.</p>				
<b>Evaluation of assessment</b>				
<b>d</b>	Guide post			The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.
	Met?			<b>Yes</b>

### Rationale

The assessment is tested through a benchmark procedure where all input data and relevant assumptions are reviewed and some alternative assessment approaches such as the a4a model are tested. Such activities are carried out both in the framework of FAO Adriamed regional project and STECF.

### Peer review of assessment

<b>e</b>	Guide post		The assessment of stock status is subject to peer review.	The assessment has been <b>internally and externally</b> peer reviewed.
	Met?		<b>Yes</b>	<b>Yes</b>

### Rationale

The assessment is internally peer reviewed by an internal audit within the FAO Adriamed regional project group itself and is externally peer reviewed by the SAC of GFCM. It is also externally peer reviewed for the EU by the Scientific, Technical and Economic Committee (STECF). This meets SG 100.

### References

GFCM (2017a). Report of the Workshop on the assessment of management measures (WKMSE). FAO headquarters, Rome, Italy, 20–23 February 2017. 87 p.

### Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>&gt;80</b>
Information gap indicator	<b>Information sufficient to score PI</b>

### Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## 7.5 Principle 2

### 7.5.1 Principle 2 background

MSC puts **bycatch species** into two categories for the purposes of evaluation under Principle 2: 'primary' and 'secondary', and evaluates each category under a different set of PIs. CR v2.0 defines **primary bycatch species** in this context as those: *where management tools and measures are in place that aim to regulate fishing in relation to some biologically based limit and/or target reference levels*; **secondary species** are all the others.

MSC also makes a distinction between 'main' bycatch species and others. **Main bycatch species** are defined as those which exceed 5 % of the total catch (including discards), or 2 % if the species is considered to be vulnerable to fishing pressure (e.g. if the stock is known to be depleted or if the life history makes it vulnerable); assessment teams can also use their discretion to designate species as main if they feel it is necessary.

The fishery is a mixed fishery targeting anchovy but with other species of small pelagics taken as bycatch (sardine, mackerel and horse mackerel). In 2015-16, anchovy represented ~85 % of the catch of small pelagics, while sardine landings have fluctuated in the range of 8-10 % of the total (Table 2.1). Cumulative landings of other species of the small pelagic reached ~7 % of the total.

The dataset presented in Table 2.1 was provided by the BLUFISH PROJECT (Stage 1.b) and it gives a list of bycatch minor species as follows: European pilchard (*Sardina pilchardus*), Chub mackerel (*Scomber japonicas*), Atlantic chub mackerel (*Scomber colias*), Atlantic horse mackerel (*Trachurus trachurus*), Atlantic bonito (*Sarda sarda*), Mulletts nei (Mugilidae). In MSC terms, sardine would be considered a main primary bycatch species for this fishery. While the minor species Atlantic bluefin tuna (*Thunnus thynnus*) and Swordfish (*Xiphias gladius*) managed by multiannual recovery plan are the other two primary species. For the other species, since there is no direct management via reference points, they would be considered secondary species.

Studies of Mediterranean PS fisheries (Keller, 2005; Tsagarakis et al., 2014) suggest that the discard rate is fairly low (2–3%), because the gear is highly selective and targets small pelagic fish assemblages with limited species and size diversity; however, according to other views the discard fraction may be affected by several factors, including catch quantity and composition as well as market prices (Santojanni et al., 2005).

The electronic logbooks on purse seine vessels allow for recording of catch other than sardine and anchovy. However, the two horse mackerel species are difficult to distinguish and might have not been always separated in logbook or landings declarations.

#### 7.5.1.1. Primary species

##### Outcome

Scientific advice on stock status for a number of species caught as by-catch by purse seiners operating in the Southern Adriatic Sea is available from two sources:

- (i) European Commission Scientific, Technical and Economic Committee for Fisheries (STECF);
- (ii) General Fisheries Commission for the Mediterranean (GFCM) Scientific Advisory Council (SAC).

Expert working groups convened by ICCAT, STECF and GFCM in 2016/2017 carried out analytical stock assessments for the following stocks in the Adriatic Sea: European pilchard (*S. pilchardus*), Atlantic Bluefin tuna (*T. thynnus*) and swordfish (*X. gladius*) (Anonymous, 2017; STECF, 2016a; FAO, 2018). Scientific advices on stock status are available for these species, and these advices have been operationalized by the relevant management authorities.

A recent review of the state of Mediterranean fisheries describes ongoing efforts by the GFCM to apply multiannual management plans aimed at managing fish stocks in the Mediterranean Sea (FAO, 2018). The only management plan currently implemented specifically for Adriatic fisheries concerns the management of sardine and anchovy stocks.

Bluefin tuna (*Thunnus thynnus*) and swordfish are managed by a multiannual recovery plan which applies to the Eastern Atlantic and Mediterranean region (REC.ICCAT-GFCM/35/2011/7), these species were recorded as a by-catch species in the UoA (see section on secondary species outcome for a full list of by-catch species).

##### Management

There are a number of management measures in place to regulate fisheries in the Adriatic Sea, the Bluefin tuna and swordfish fisheries are managed under the auspices of ICCAT in the Eastern Atlantic and Mediterranean, and the small pelagic fisheries targeting anchovy and sardine under both GFCM and EU. In particular, to date management has been primarily based on technical measures, many of which have been implemented by Italy, Slovenia and Croatia in order to conform to the provisions outlined in the Mediterranean Fisheries Regulation EC 1967/2006 (as amended by EC 1343/2011), as well as the applicable GFCM Recommendations also by Montenegro and Albania. Such measures include for instance effort limitation, minimum conservation reference sizes for a number of species, time/area closures,



technical conditions for maximum fishing gear dimensions and characteristics, minimum mesh sizes, requirements for fishing licenses etc.

### **Information**

The UoA is subject to both EU/GFCM and ICCAT quantitative fisheries data collection requirements. In the EU Regulation EC 199/2008 concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy sets out the fisheries data collection requirements for EU Member States. The Regulation outlines requirements related to the:

- Collection, management and use of data in the framework of multi-national programmes;
- Data management process;
- Use of data collected in the framework of the Common Fisheries Policy;
- Use of data to support scientific advice.

Commission Regulation (EC) No 665/2008 establishes the detailed rules for the application of Council Regulation (EC) No 199/2008, concerning the establishment of a Community framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the Common Fisheries Policy. The subsequent Commission Decision 2010/93/EU sets out the data collection requirements for 2011-13, and Commission implementing Decision C(2013)5243 extended the application of this decision to 2014-2016.

Under the EU fisheries Data Collection Framework (DCF), Member States are required to compile a wide range of biological and economic data, including:

- Biological data, including stock-related data;
- Data on fleet size and fishing activity analysed by fishing season, fleet segment, areas fished and by stock;
- Economic data relating to the fishing, aquaculture and fish processing industries;
- Fisheries independent research surveys at sea;
- Data to evaluate the effects of the fisheries sector on the marine ecosystem.

This data is collected on the basis of National Programmes in which Member States indicate which data is collected, how data is collected, and what resources are allocated to the data collection process. Member States are required to report annually on the implementation of their National Programmes, and these annual reports are evaluated by the European Commission's Scientific, Technical and Economic Committee for Fisheries (STECF).

In addition to the requirements of the EU DCF outlined above, the UoA is also subject to the requirements of the GFCM Data Collection Reference Framework (DCRF), which is GFCM's framework for the collection and submission of the fisheries-related data (Table 2.2). A number of GFCM Recommendations request data from GFCM contracting parties, which is then used by the relevant GFCM subsidiary bodies to formulate scientific advice. The DCFR is based on seven different tasks:

- T1 – Global figures of national fisheries
- T2 – Catch (landing data, catch data per species)
- T3 – Incidental catch of vulnerable species
- T4 – Fleet
- T5 – Effort
- T6 – Socioeconomics
- T7 – Biological information (stock assessment, length data, other biological data, dolphin fish, red coral, European eel, ecosystem indicators)

Most research activities, as well as data collection, on Atlantic bluefin tuna, tuna-like species, and swordfish are carried out by scientists from national research institutes or universities of ICCAT Contracting Parties. Special Research Programs are used by ICCAT as a mechanism to help focus, coordinate and complement those national research activities. The programs usually center on improving biological knowledge and fishery data for a particular species, and usually last a few years.

Table 2.1. List of species detected for the UoA using purse seine (PS) for small pelagic fish (SPF) in GSA 18 and scoring elements. The species underlined are the species detected for the selected UoA. Mean landing refers to landed weights in 2015-2016.

Italian name	English name	Mean landing [tons]	Percentage (%)	Component	Scoring elements	Designation	Data-deficient
<u>Alici</u>	<u>European anchovy</u>	<u>1600.611</u>	<u>84.724</u>	<u>P1</u>	<u><i>Engraulis encrasicolus</i></u>	-	-
Sardine	European pilchard (=Sardine)	150.661	7.975	Primary	<i>Sardina pilchardus</i>	Main	No
Lanzardo	Chub mackerel	83.492	4.419	Secondary	<i>Scomber japonicus</i>	Minor	Yes
Lanzardo atlantico	Atlantic chub mackerel	26.896	1.424	Secondary	<i>Scomber colias</i>	Minor	Yes
Sugarello o suro	Atlantic horse mackerel	23.635	1.251	Secondary	<i>Trachurus trachurus</i>	Minor	Yes
Tonno rosso	Atlantic bluefin tuna	1.391	0.074	Primary	<i>Thunnus thynnus</i>	Minor	No
Pesce spada	Swordfish	1.202	0.064	Primary	<i>Xiphias gladius</i>	Minor	No
Palamita	Atlantic bonito	1.198	0.063	Secondary	<i>Sarda sarda</i>	Minor	Yes
Cefali altri	Mullets nei	0.119	0.006	Secondary	Mugilidae	Minor	Yes

Source: estimates from MIPAAFT/National Fisheries Data Collection Programme and reported in the BLUFISH PROJECT Stage 1.b (Deeper mapping/Annex IV – GSA 18)

Table 2.2. GFCM-DCRF tasks: data and purposes. Source: GFCM (2016).

DCRF TASKS (I)			DATA	RELATED RECOMMENDATIONS
ID	TASK	SUBTASK		
T. I	GLOBAL FIGURES OF NATIONAL FISHERIES	-	Annual data on total landing, number of vessels, total capacity and total engine power by country.	-
T. II	CATCH	II.1) Landing data	Annual data on total national captures (i.e. landing) by country, area and fleet segment.	-Rec. GFCM/33/2009/3
		II.2) Catch data per species	Annual data on total catch (i.e. landing and discards) for the main commercial species reported by country, area and fleet segment.	-Rec. GFCM/33/2009/3
T. III	INCIDENTAL CATCH OF VULNERABLE SPECIES	-	Annual data (i.e. number of individuals) on incidental catch of vulnerable species (i.e. seabirds, turtles, marine mammals and shark species) by area, country and fishing gear.	-Rec. GFCM/35/2011/5 -Rec. GFCM/36/2012/3 -Rec. GFCM/35/2011/4 -Rec. GFCM/36/2012/2
T. IV	FLEET	-	Register of fishing vessels with identification features (i.e. vessel name, registration number, port, fishing gear, geographical subarea, etc.) and information on technical features (i.e. gross tonnage, kilowatt, overall length etc.) of fleets operating in the GFCM area.	-Res. GFCM/35/2011/1 -Rec. GFCM/33/2009/5 -Rec. GFCM/33/2009/6 -Rec. GFCM/33/2009/2 -Rec. GFCM/33/2009/1 -Rec. GFCM/33/2009/3 -Rec. GFCM/30/2006/3
T. V	EFFORT	-	Fishing effort data calculated as a combination of capacity and activity by country, area, fleet segment and fishing gear. Information on catch per unit effort (CPUE) for the main commercial species.	-Rec. GFCM/33/2009/3
T. VI	SOCIO-ECONOMICS	-	Data related to economic and social variables of fishery by country, area and fleet segment.	-Rec. GFCM/33/2009/3

DCRF TASKS (I)			DATA	RELATED RECOMMENDATIONS
ID	TASK	SUBTASK		
T. VII	BIOLOGICAL INFORMATION	VII.1) Stock assessment	Annual data on stock identification and stock biological information on priority species: growth parameters, length/weight relationships, recruitment, biomass. Information on environmental factors that may affect population dynamics.	- Rec. GFCM/33/2009/3
		VII.2) Length data	Data related to the observed size distribution, in the landing, of identified priority species per area and fleet segment.	- Rec. GFCM/33/2009/3
		VII.3) Other biological data	Information on some biological variables (i.e. sex and maturity) of identified priority species per area and fleet segment.	- Rec. GFCM/33/2009/3
		VII.4) Dolphin fish	Annual data on total landing, fishing period and the area of fishing operations regarding dolphin fish <i>Coryphaena hippurus</i> .	- Rec. GFCM/30/2006/2
		VII.5) Red coral	Information on red coral harvesting, weight, effort and average diameter	- Rec. GFCM/35/2011/2 - Rec. GFCM/36/2012/1
		VII.6) European eel	Annual data on total catch, gear types and fishing days, by country and for the different life stages.	-
		VII.7) Ecosystem indicators	The selected common indicators will refer to spawning stock biomass, total landings, fishing mortality, effort and incidental catch of vulnerable and non-target species	-

### 7.5.1.2. Secondary Species

Anchovy and sardine in the Adriatic Sea are targeted by both pelagic pair trawlers and purse seiners operating in GFCM Geographic Sub-Areas 17 and 18. However, according to catch data presented in the latest GFCM stock assessment forms for anchovy and sardine, only Italian fishers use pelagic pair trawlers (AdriaMed Working Group on Small Pelagics, 2015a; 2015b).

Official Italian catch data for pelagic purse seiners operating in the Adriatic Sea GSA 18 made available by the Italian ministry for the purpose of this assessment shows that numerous other species are landed besides anchovy and sardine, albeit in very small volumes (Table 2.1). None of these species are currently managed, and consequently all these species fall under the definition of secondary species.

Catches of the individual species by the UoA would thus not have comprised 5 % or more by weight of the total catch of all species by the UoA, so none of these species are considered to be 'main' species for the purpose of the Principle 2 assessment. STECF (2016b) note that discarding in this fishery is 'considered negligible'. The Landing Obligation is now in force for this fishery, so in principle there should be no discarding. STECF (2016b) considers that anchovy is over-exploited, with  $F$  estimated to be above all possible estimates of  $F_{MSY}$ . To obtain  $E=0.4$ , STECF estimates that catch in GSA 17 and 18 would have to be reduced from ~30,000 t to ~10,000 t. GFCM also estimates that  $F > F_{MSY}$ , and estimates biomass at below  $B_{pa}$  but above  $B_{lim}$  (GFCM, 2017).

STECF reviews stock status for *T. trachurus* (but not *T. mediterraneus*) and both species of mackerel, but is not able to assess stock status due to lack of data; since there is not a targeted fishery. GFCM WGSASP does not consider any of these stocks.

### 7.5.1.3. ETP species

Neither the Italian Ministry nor scientists reported any interactions between the purse seine fishery and any ETP species. It is reported that cetaceans (bottlenose dolphin), turtles (loggerhead) and birds (various) are present in the area, but do not interact particularly with the fishery or the fishing vessels. No seals are present in the area.

There are a variety of projects for monitoring populations of these species in the Southern Adriatic. It is reported that the populations of bottlenose dolphins are among the best-studied in the Mediterranean (see Cetacean Alliance information). In relation to bottlenose dolphins, there are concerns over the status of some populations according to the Cetacean Alliance, but this fishery is not mentioned as an issue; in fact, they note a diet switch towards small pelagics as sardine biomass has increased. Increased pleasure boating and development is the main concern.

The main interaction of the fishery with species other than small pelagics is with bluefin tuna, which was formerly depleted but is now present in the area in increasing numbers. Bluefin tuna is fished under quota, managed by ICCAT, and is not on this basis an ETP species.

Bluefin ranches provide a market for some of the catch of the fishery, but this would also not be considered under an MSC assessment, except in relation to traceability if relevant. Scientific data indicates that the populations of all five ETP species encountered in the Adriatic Sea are part of distinct Mediterranean populations (Wallace et al., 2010; Faria et al., 2012; IUCN, 2012), with both green and loggerhead turtles found in the Adriatic closely related to turtle populations nesting in the Eastern Mediterranean (Wallace et al., 2010).

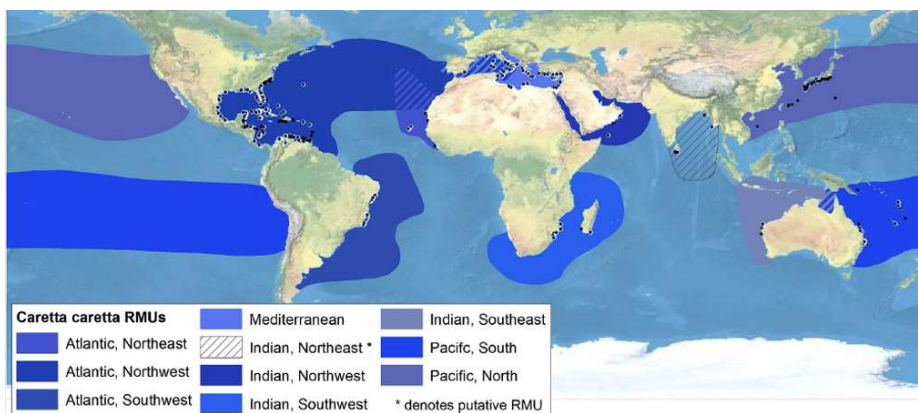


Figure 2.1 Regional management units for loggerhead turtles; nesting sites are represented by black squares. Source: Wallace et al. (2010).

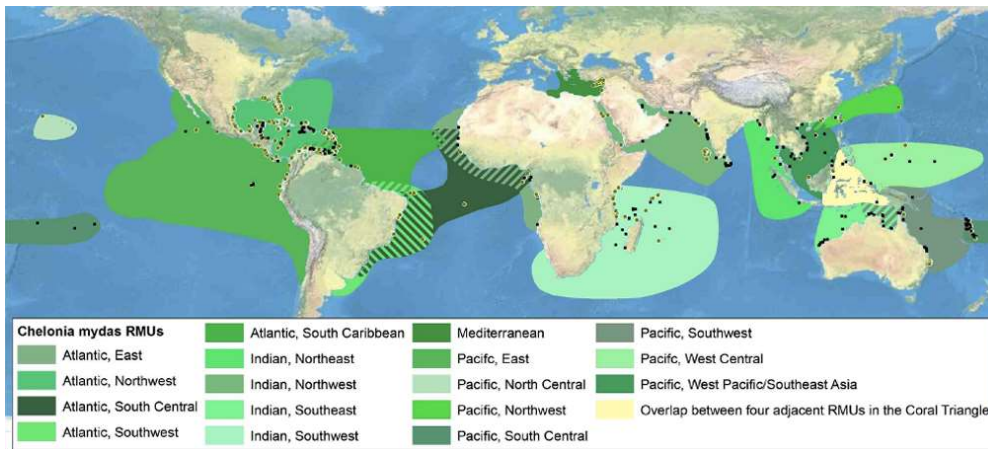


Figure 2.2 Regional management units for green turtles; nesting sites are represented by black squares. Source: Wallace et al. (2010).



Figure 2.3 Distribution of the Mediterranean bottlenose dolphin population in the Mediterranean Sea (hatched area on map). Source: IUCN (2012).



Figure 2.4 Distribution of the Mediterranean striped dolphin population in the Mediterranean Sea (hatched area on map). Source: IUCN (2012).

#### 7.5.1.4. Habitats

The Mediterranean Regulation specifies rules for the depth of purse seine nets: they should be no more than 120 m deep (measured when stretched and wet) and not deployed in water shallower than 70 % of the total stretched-mesh depth of the net. The nets should also not be deployed within 300 m of the shore or in depths of less than 50 m (Figure 2.5).

Among the various fishing gears used in the Mediterranean, purse seine fisheries are characterised by limited effects on ecosystem structure (Coll et al., 2007). The EC Reg. 1967/2006 provisions that concern the fishing nets used by a large proportion of such purse seiners are as follows:

- For surrounding nets, the minimum mesh size shall be 14 mm (Article 9);
- The length of netting shall be restricted to 800m and the height to 120 m, except in the case of tuna seines (Annex II);
- Fishing above seagrass beds of, in particular, *Posidonia oceanica* or other marine phanerogams shall be prohibited (Article 4);
- The use of purse seines shall be prohibited within 300m of the coast or within the 50m isobath where that depth is reached at a shorter distance from the coast and a purse seine shall not be deployed at depths less than 70% of the overall height of the purse seine itself (Article 13, paragraph 3).

Even though small pelagic PS have long been in use in the Adriatic, knowledge of the characteristics of these fisheries is in fact limited. The available information comes from studies and reports describing short spatial and temporal scales and addressing the topic in a marginal way (Santojanni et al., 2005; Falco et al., 2007). To fill this gap, and establish whether the gears used by purse seiners comply with the EC Reg. 1967/2006 provisions, updated information was collected by Lucchetti et al. (2018) on the technical properties, fishing practices, gear performance, area of activity, and the spatial structure of the fishing grounds exploited by Adriatic PS fisheries targeting small pelagics. Since no detailed information on the environmental impacts of PS was available, an ad hoc study was also performed Lucchetti et al. (2018) to examine the issue in the light of EC Reg. 1967/2006 provisions.

STECF (2016c) stated that in the North-Central and Southern Adriatic Sea, the measured headrope length for the Italian purse seines ranged from 400 to 500 m. For purse seines having such a headline length the theoretical net drop could range from 142 and 222 m (STECF, 2016c).

Data from sensors and video cameras by Lucchetti et al. (2018) documented that purse seines do not exert adverse impacts on critical habitats such as *Posidonia* meadows and that the groundrope impact on the seabed is so slight and short-lived as to be negligible.

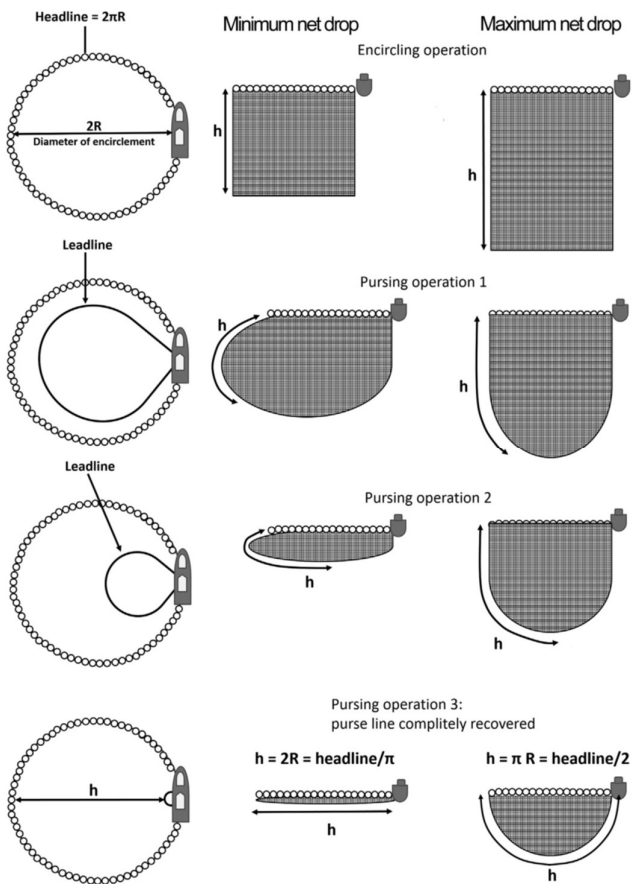


Figure 2.5. Theoretical approach for the definition of minimum and maximum purse seine net height. Source: Lucchetti et al. (2018).

#### 7.5.1.5. Ecosystem

As noted above, sardine and anchovy are likely to be considered key low trophic level (LTL) species according to the MSC definition – i.e. there is a strong possibility that they play an important role in the ecosystem as forage fish for higher trophic levels, including fish and other predators.

A modelling study of the Adriatic ecosystem (Coll et al., 2009) identifies anchovy as key prey species, and sardines as key intermediate-level predators. It broadly identifies two different trends over time (1975-2002): a decline of commercially-important species, including anchovy, as a result of heavy fishing pressure (although it identifies trawling as the main culprit) and a pattern of increase followed by decrease of species in intermediate trophic positions (such as sardines), or species which are not targeted by fisheries. The authors postulate that this second pattern could arise from the removal of top predators from the system by fishing, with a subsequent decline a result of 'progressive impoverishment of the ecosystem' as a result of overfishing, although warming and eutrophication are also possible causes.

Overall, Coll et al. (2009) note 'a low probability that the ecosystem was being sustainably fished during the study period'. There is no particular evidence that the situation has improved since then: sardine biomass has been more or less stable while anchovy has continued to decline; in relation to top predators, bluefin tuna biomass has increased substantially but hake and swordfish remain depleted (STECF, 2016b, ICCAT, 2018).

Hake biomass may be declining as a consequence of climate change; however, the species has seen a huge expansion in the northern-most part of its range (Lav Bavčević, pers. comm.). In general, it is hard to rule out climate change rather than (or as well as) fishing as a possible driver of some of the patterns observed or postulated above.



## 7.5.2 Principle 2 Performance Indicator scores and rationales – delete if not applicable

### PI 2.1.1 – Primary species outcome

PI 2.1.1		The UoA aims to maintain primary species above the point where recruitment would be impaired (PRI) and does not hinder recovery of primary species if they are below the PRI		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Main primary species stock status			
	Guide post	Main primary species are <b>likely</b> to be above the PRI.  OR  If the species is below the PRI, the UoA has measures in place that are <b>expected</b> to ensure that the UoA does not hinder recovery and rebuilding.	Main primary species are <b>highly likely</b> to be above the PRI.  OR  If the species is below the PRI, there is either <b>evidence of recovery</b> or a demonstrably effective strategy in place <b>between all MSC UoAs which categorise this species as main</b> , to ensure that they collectively do not hinder recovery and rebuilding.	There is a <b>high degree of certainty</b> that main primary species are above the PRI <b>and are</b> fluctuating around a level consistent with MSY.
	Met?	Yes	Yes	No
Rationale				
<p><i>The only primary main species is <i>Sardina pilchardus</i>. According to the last assessment the Biomass <math>SSB_{CUR}</math> is 161,000 tons and the lower limit (5 % percentile) is 126,000 tons which is above the <math>B_{LIM}</math> estimated as 125,000 tons. Therefore, there is high degree of certainty that the primary species is above PRI but is below <math>B_{MSY}</math> (500,000 tons, which is 2-time <math>B_{PA}</math>)</i></p>				
<b>b</b>	Minor primary species stock status			
	Guide post			Minor primary species are highly likely to be above the PRI.  OR  If below the PRI, there is evidence that the UoA does not hinder the recovery and rebuilding of minor primary species.
	Met?			<b>1 Y : 1 N</b>
Rationale				
<p><i>SSB of swordfish is below <math>B_{LIM}</math>, while SSB of Bluefin tuna is above</i></p>				
References				
<p><i>ICCAT, 2018. Swordfish Mediterranean: executive summary: <a href="http://iccat.int/Documents/SCRS/ExecSum/SWO_MED_ENG.pdf">http://iccat.int/Documents/SCRS/ExecSum/SWO_MED_ENG.pdf</a></i></p>				
Draft scoring range and information gap indicator added at Announcement Comment Draft Report				
Draft scoring range			<b>&gt;80</b>	

Information gap indicator	<b>Information sufficient to score PI</b>
Data-deficient? (Risk-Based Framework needed)	<b>No</b>

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.1.2 – Primary species management strategy

PI 2.1.2		There is a strategy in place that is designed to maintain or to not hinder rebuilding of primary species, and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Management strategy in place			
	Guide post	There are <b>measures</b> in place for the UoA, if necessary, that are expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are likely to be above the PRI.	There is a <b>partial strategy</b> in place for the UoA, if necessary, that is expected to maintain or to not hinder rebuilding of the main primary species at/to levels which are highly likely to be above the PRI.	There is a <b>strategy</b> in place for the UoA for managing main and minor primary species.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
Rationale				
<p><i>The only management strategy currently implemented in the Adriatic concerns the management of sardine, anchovy, tuna and swordfish stocks, and the process of adopting sub-regional management plans for other stocks by the relevant authorities has yet to be finalised. Since there are not other primary species without a management strategy SG 60 and SG 80 are met. As such there is no management strategy in place specifically to minimise the mortality of unwanted catches by the UoA – SG 100 is not met.</i></p>				
<b>b</b>	Management strategy evaluation			
	Guide post	The measures are considered <b>likely</b> to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).	There is some <b>objective basis for confidence</b> that the measures/partial strategy will work, based on some information directly about the fishery and/or species involved.	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on information directly about the fishery and/or species involved.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
Rationale				
<p><i>There are a number of management measures in place to regulate fisheries in the Adriatic Sea in general, and the small pelagic fishery targeting anchovy and sardine in particular. To date management has been primarily based on technical measures, many of which have been implemented by Italy, Slovenia and Croatia in order to conform to the provisions outlined in the Mediterranean Fisheries Regulation EC 1967/2006, amended by EC 1343/2011, as well as the applicable GFCM Recommendations. Such measures include for instance minimum landing sizes for a number of species, time/area closures, technical conditions for maximum fishing gear dimensions and characteristics, minimum mesh sizes, requirements for fishing licenses etc. Although the management plan for small pelagics being implemented in the Adriatic does not directly consider species caught as by-catch, several of the measures (e.g. area closures, reduction of fishing effort) will nevertheless also serve to manage and reduce catches of non-target species, and can be seen as a partial management strategy for such species. However no testing to support high confidence that the partial strategy will work has been carried out – SG 100 is not met.</i></p>				
<b>c</b>	Management strategy implementation			
	Guide post		There is <b>some evidence</b> that the measures/partial strategy is being <b>implemented successfully</b> .	There is <b>clear evidence</b> that the partial strategy/strategy is being <b>implemented successfully and is achieving its overall objective as set out in scoring issue (a)</b> .
	Met?		<b>Yes</b>	<b>No</b>

Rationale

Based on available effort data as well as enforcement and control information there is some objective basis for confidence that the measures are being implemented successfully in the UoA – SG 80 is met.  
 The only management strategy currently implemented in the Adriatic concerns the management of small pelagic fisheries for sardine and anchovy, and the process of adopting sub-regional management plans for other stocks by the relevant authorities has yet to be finalised. The small pelagic fisheries management plan does not specifically mention management of non-target species, and as it cannot be considered a partial management strategy in place that is designed to maintain / not hinder rebuilding of such species. In addition there is no clear evidence currently available that the measures are achieving their overall objectives – SG 100 is not met.

Shark finning				
<b>d</b>	Guide post	It is <b>likely</b> that shark finning is not taking place.	It is <b>highly likely</b> that shark finning is not taking place.	There is a <b>high degree of certainty</b> that shark finning is not taking place.
	Met?	<b>NA</b>	<b>NA</b>	<b>NA</b>

Rationale

SA3.5.2 of the MSC Fisheries Certification – Requirements v2.0 states: 'If the primary species is a shark, the team shall score scoring issue (d)'. Since there are no shark species caught by the UoA for which management tools and measures are in place, the team did not score issue (d). No primary species are sharks, and there are no unwanted catches of main species.

Review of alternative measures				
<b>e</b>	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of main primary species and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of unwanted catch of all primary species, and they are implemented, as appropriate.
	Met?	<b>NA</b>	<b>NA</b>	<b>NA</b>

Rationale

Scoring issue (e) was not scored in line with GSA 3.5.3 of the MSC Fisheries Certification – Requirements v2.0: 'If there is no unwanted catch of primary species, or no primary species at all, then the 'Review of alternative measures' scoring issue (e) is not scored.'

References

N/A

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>80</b>
Information gap indicator	<b>Information sufficient to score PI</b>

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

### PI 2.1.3 – Primary species information

PI 2.1.3		Information on the nature and extent of primary species is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage primary species		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Information adequacy for assessment of impact on main primary species</b>			
	Guide post	<p>Qualitative information is <b>adequate to estimate</b> the impact of the UoA on the main primary species with respect to status.</p> <p><b>OR</b></p> <p><b>If RBF is used to score PI 2.1.1 for the UoA:</b> Qualitative information is adequate to estimate productivity and susceptibility attributes for main primary species.</p>	<p>Some quantitative information is available and is <b>adequate to assess</b> the impact of the UoA on the main primary species with respect to status.</p> <p><b>OR</b></p> <p><b>If RBF is used to score PI 2.1.1 for the UoA:</b> Some quantitative information is adequate to assess productivity and susceptibility attributes for main primary species.</p>	<p>Quantitative information is available and is <b>adequate to assess with a high degree of certainty</b> the impact of the UoA on main primary species with respect to status.</p>
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>

#### Rationale

*The UoA is subject to both EU and GFCM fisheries data collection requirements.*

- *Under the EU fisheries Data Collection Framework (DCF) established by Council Regulation (EC) No 199/2008, Commission Regulation (EC) No 665/2008, and Commission Decision 2010/93/EU, Member States are required to compile a wide range of biological and economic data, including:*
- *Biological data, including stock-related data;*
- *Data on fleet size and fishing activity analysed by fishing season, fleet segment, areas fished and by stock;*
- *Economic data relating to the fishing, aquaculture and fish processing industries;*
- *Fisheries independent research surveys at sea;*
- *Data to evaluate the effects of the fisheries sector on the marine ecosystem.*

*Moreover, the UoA is also subject to the requirements of the GFCM Data Collection Reference Framework (DCRF), which is GFCM's framework for the collection and submission of the fisheries-related data. A number of GFCM Recommendations request data from GFCM contracting parties, which is then used by the relevant GFCM subsidiary bodies to formulate scientific advice. The DCFR is based on seven different tasks:*

- *T1 – Global figures of national fisheries*
- *T2 – Catch (landing data, catch data per species)*
- *T3 – Incidental catch of vulnerable species*
- *T4 – Fleet*
- *T5 – Effort*
- *T6 – Socioeconomics*
- *T7 – Biological information (stock assessment, length data, other biological data, dolphin fish, red coral, European eel, ecosystem indicators)*
- *Both qualitative and quantitative information is available to assess the impact of the UoA on non-target species as a result of the application of the EU DCF and GFCM DCRF in the Adriatic Sea. The available catch data indicates that there are in fact no main primary species caught by this fishery – SG 60 and 80 are met.*
- *The required quantitative information to assess the impact of the UoA on non-target species with a high degree of certainty is however not available. Data quality issues reported by the last STECF expert working*

group performing stock assessments for species caught as by-catch by the UoA in the Adriatic Sea (STECF 16-08, 2016) for instance included:

- Issues with the time series of landings data and size structure data for some species;
- A lack of length composition information in discards data;
- Problems with fisheries independent data coming from the MEDITS survey in GSA 17 and 18 due to changes in methodology and survey timing.

SG 100 is not met.

#### Information adequacy for assessment of impact on minor primary species

<b>b</b>	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor primary species with respect to status.
	Met?			<b>Yes</b>

#### Rationale

As is described in detail for scoring issue 2.1.3 (a) above, the UoA is subject to both EU and GFCM fisheries data collection requirements. Some quantitative information is available to assess the impact of the UoA on non-target species with respect to status as a result of the application of the EU DCF and GFCM DCRF in the Adriatic Sea – SG 100 is met.

#### Information adequacy for management strategy

<b>c</b>	Guide post	Information is adequate to support <b>measures</b> to manage <b>main</b> primary species.	Information is adequate to support a <b>partial strategy</b> to manage <b>main</b> primary species.	Information is adequate to support a <b>strategy</b> to manage <b>all</b> primary species, and evaluate with a <b>high degree of certainty</b> whether the strategy is achieving its objective.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>

#### Rationale

As is described in detail for scoring issue 2.1.3 (a) above, the UoA is subject to both EU and GFCM fisheries data collection requirements. The information collected as a result of the application of the EU DCF and GFCM DCRF in the Adriatic Sea would be adequate to support a partial strategy to manage main primary species. Moreover the management plan for anchovy and sardine fisheries in the Adriatic Sea constitutes a partial strategy to manage by-catch species since management measures (e.g. season and area closures) will also have an effect on by-catch species. In any case the available catch data actually indicates that there are in fact no main primary species caught by the UoA – SG 60 and SG 80 are met. There is currently no cohesive and strategic arrangement to manage species caught as by-catch by the UoA. Several data quality issues remain (STECF 16-08, 2016) and have yet to be addressed by the relevant authorities, so it would not be possible to evaluate with a high degree of certainty whether a potential future strategy is achieving its objective – SG 100 is not met.

#### References

STECF 16-08 (2016). Scientific, Technical and Economic Committee for Fisheries (STECF) – Mediterranean assessments part 2. Publications Office of the European Union, Luxembourg, EUR 27758 EN, 483 pp.

#### Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>&gt;80</b>
Information gap indicator	<b>Information sufficient to score PI</b>

#### Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
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Condition number (if relevant)

## PI 2.2.1 – Secondary species outcome

PI 2.2.1		The UoA aims to maintain secondary species above a biologically based limit and does not hinder recovery of secondary species if they are below a biological based limit		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Main secondary species stock status</b>			
	Guide post	<p>Main secondary species are <b>likely</b> to be above biologically based limits.</p> <p>OR</p> <p>If below biologically based limits, there are <b>measures</b> in place expected to ensure that the UoA does not hinder recovery and rebuilding.</p>	<p>Main secondary species are <b>highly likely</b> to be above biologically based limits.</p> <p>OR</p> <p>If below biologically based limits, there is either <b>evidence of recovery</b> or a <b>demonstrably effective partial strategy</b> in place such that the UoA does not hinder recovery and rebuilding.</p> <p>AND</p> <p>Where catches of a main secondary species outside of biological limits are <b>considerable</b>, there is either <b>evidence of recovery</b> or a, <b>demonstrably effective strategy in place between those MSC UoAs that have considerable catches of the species</b>, to ensure that they collectively do not hinder recovery and rebuilding.</p>	<p>There is a <b>high degree of certainty</b> that main secondary species are above biologically based limits.</p>
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Rationale</b>				
<p><i>Information on catches of purse seiners targeting small pelagics in the Adriatic Sea comes from a number of sources: (i) data collected under the EU fisheries Data Collection Framework (DCF) / data collected under the GFCM Data Collection Reference Framework (DCRF), (ii) data from on-board observations carried out in line with EC 812/2004, (iii) information from scientific studies.</i></p> <p><i>Official Italian DCF catch data for purse seiners operating in the Adriatic Sea (i.e. GSAs 17 and 18) shows that numerous other species are caught and landed besides anchovy and sardine, albeit in very small volumes.</i></p> <p><i>Based on the data available, the assessment team determined that there are no main secondary species being impacted by the UoA – SG 60, SG 80 and SG 100 are met.</i></p>				
<b>b</b>	<b>Minor secondary species stock status</b>			
	Guide post			<p>Minor secondary species are highly likely to be above biologically based limits.</p> <p>OR</p> <p>If below biologically based limits', there is evidence that the UoA does not hinder the recovery and rebuilding of secondary species</p>
	Met?			<b>Yes</b>



## Rationale

*There is evidence that the UoA does not hinder the recovery and rebuilding of the majority of minor secondary species. For these species SG 100 is met.*

## References

*AdriaMed Working Group on Small Pelagics (2015a). General Fisheries Commission for the Mediterranean (GFCM) stock assessment form small pelagics – Anchovy (*Engraulis encrasicolus*). Reference year 2014. Reporting year 2015. 40pp.*

*AdriaMed Working Group on Small Pelagics (2015b). General Fisheries Commission for the Mediterranean (GFCM) stock assessment form small pelagics – Sardine (*Sardina pilchardus*). Reference year 2014. Reporting year 2015. 40pp.*

## Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>&gt;80</b>
Information gap indicator	<b>More information sought:</b> Trends of abundance of secondary species from fishery independent datasets.
Data-deficient? (Risk-Based Framework needed)	<b>No</b>

## Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.2.2 – Secondary species management strategy

PI 2.2.2		There is a strategy in place for managing secondary species that is designed to maintain or to not hinder rebuilding of secondary species and the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of unwanted catch		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Management strategy in place</b>			
	Guide post	There are <b>measures</b> in place, if necessary, which are expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a <b>partial strategy</b> in place, if necessary, for the UoA that is expected to maintain or not hinder rebuilding of main secondary species at/to levels which are highly likely to be above biologically based limits or to ensure that the UoA does not hinder their recovery.	There is a <b>strategy</b> in place for the UoA for managing main and minor secondary species.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				
<p><i>The only management strategy currently implemented in the Adriatic concerns the management of sardine, anchovy, tuna and swordfish stocks, and the process of adopting sub-regional management plans for other stocks by the relevant authorities has yet to be finalised. The partial strategy for secondary species is related to the CFP and MSFD. There is no management strategy in place specifically to manage the identified minor secondary species – SG 100 is not met.</i></p>				
<b>b</b>	<b>Management strategy evaluation</b>			
	Guide post	The measures are considered <b>likely</b> to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/species).	There is <b>some objective basis for confidence</b> that the measures/partial strategy will work, based on some information directly about the UoA and/or species involved.	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/strategy will work, based on information directly about the UoA and/or species involved.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				
<p><i>In the absence of main retained species, management measures or a partial management strategy are not necessary (as per scoring issue a) so SG 60 and SG 80 are met by default. There are a number of management measures in place to regulate fisheries in the Adriatic Sea in general, and the small pelagic fishery targeting anchovy and sardine in particular. To date management has been primarily based on technical measures, many of which have been implemented by Italy, Slovenia and Croatia in order to conform to the provisions outlined in the Mediterranean Fisheries Regulation EC 1967/2006, amended by EC 1343/2011, as well as the applicable GFCM Recommendations. Such measures include for instance minimum landing sizes for a number of species, time/area closures, technical conditions for maximum fishing gear dimensions and characteristics, minimum mesh sizes, requirements for fishing licenses etc. Although the management plan for small pelagics being implemented in the Adriatic does not directly consider species caught as by-catch, several of the measures (e.g. area closures, reduction of fishing effort) will nevertheless also serve to manage and reduce by-catch of secondary species, and can be seen as a partial management strategy for such species – SG 100 is met.</i></p>				
<b>c</b>	<b>Management strategy implementation</b>			
	Guide post		There is <b>some evidence</b> that the measures/partial strategy is being <b>implemented successfully</b> .	There is <b>clear evidence</b> that the partial strategy/strategy is being <b>implemented successfully</b> and is <b>achieving its objective as set out in scoring issue (a)</b> .
	Met?		<b>Yes</b>	<b>No</b>

**Rationale**

*There are a number of management measures in place to regulate fisheries in the Adriatic Sea in general, and the small pelagic fishery targeting anchovy and sardine in particular. To date management has been primarily based on technical measures, many of which have been implemented by Italy, Slovenia and Croatia in order to conform to the provisions outlined in the Mediterranean Fisheries Regulation EC 1967/2006, amended by EC 1343/2011, as well as the applicable GFCM Recommendations. Such measures include for instance minimum landing sizes for a number of species, time/area closures, technical conditions for maximum fishing gear dimensions and characteristics, minimum mesh sizes, requirements for fishing licenses etc. Although the management plan for small pelagics being implemented in the Adriatic does not directly consider species caught as by-catch, several of the measures (e.g. area closures, reduction of fishing effort) will nevertheless also serve to manage and reduce by-catch of secondary species, and can be seen as a partial management strategy for such species. There are some evidences (e.g. abundance trends from surveys) that the partial strategy is implemented successfully. Therefore SG 80 is met. However, clear evidences as a analytical stock assessment in relation to reference points are lacking for the species. Therefore, SG 100 is not met.*

<b>d</b>				
Shark finning				
Guide post	It is <b>likely</b> that shark finning is not taking place.	It is <b>highly likely</b> that shark finning is not taking place.	There is a <b>high degree of certainty</b> that shark finning is not taking place.	
Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	

**Rationale**

*None of the identified minor secondary species are sharks, however shark finning is illegal throughout the Mediterranean Sea. SG 60, 80, and 100 is met.*

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

**Rationale**

*There are no main secondary species - SG 60 and SG 80 are met by default.*

**References**

*List any references here, including hyperlinks to publicly-available documents.*

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>&gt;80</b>
Information gap indicator	<b>Information sufficient to score PI</b>

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

### PI 2.2.3 – Secondary species information

PI 2.2.3		Information on the nature and amount of secondary species taken is adequate to determine the risk posed by the UoA and the effectiveness of the strategy to manage secondary species		
Scoring Issue		SG 60	SG 80	SG 100
<b>Information adequacy for assessment of impacts on main secondary species</b>				
<b>a</b>	Guide post	Qualitative information is <b>adequate to estimate</b> the impact of the UoA on the main secondary species with respect to status.	Some quantitative information is available and <b>adequate to assess</b> the impact of the UoA on main secondary species with respect to status.	Quantitative information is available and <b>adequate to assess with a high degree of certainty</b> the impact of the UoA on main secondary species with respect to status.
		OR	OR	
		<b>If RBF is used to score PI 2.2.1 for the UoA:</b>	<b>If RBF is used to score PI 2.2.1 for the UoA:</b>	
		Qualitative information is adequate to estimate productivity and susceptibility attributes for main secondary species.	Some quantitative information is adequate to assess productivity and susceptibility attributes for main secondary species.	
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Rationale</b>				
<i>There are no main secondary species - SG 60, SG 80 and SG 100 are met by default.</i>				
<b>Information adequacy for assessment of impacts on minor secondary species</b>				
<b>b</b>	Guide post			Some quantitative information is adequate to estimate the impact of the UoA on minor secondary species with respect to status.
	Met?			<b>No</b>
<b>Rationale</b>				
<i>Information on catch composition, biology (e.g. spawning grounds) and fleet distribution is adequate to support a partial strategy to manage minor secondary species. However, information on biology and stock status is not adequate to inform a strategy to manage all secondary species.</i>				
<b>Information adequacy for management strategy</b>				
<b>c</b>	Guide post	Information is adequate to support <b>measures</b> to manage <b>main</b> secondary species.	Information is adequate to support a <b>partial strategy</b> to manage <b>main</b> secondary species.	Information is adequate to support a <b>strategy</b> to manage <b>all</b> secondary species, and <b>evaluate</b> with a <b>high degree of certainty</b> whether the strategy is <b>achieving its objective</b> .
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				
<i>There are no main secondary species - SG 60 and SG 80 are met. For the other non-target species the assessment team considers that the available information is not adequate to evaluate with a high degree of certainty whether the strategy is achieving its objective – SG 100 is not met</i>				
<b>References</b>				

List any references here, including hyperlinks to publicly-available documents.

Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	>80
Information gap indicator	<b>Information sufficient to score PI</b>

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.3.1 – ETP species outcome

PI 2.3.1		The UoA meets national and international requirements for the protection of ETP species The UoA does not hinder recovery of ETP species		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Effects of the UoA on population/stock within national or international limits, where applicable			
	Guide post	Where national and/or international requirements set limits for ETP species, the <b>effects of the UoA</b> on the population/ stock are known and <b>likely</b> to be within these limits.	Where national and/or international requirements set limits for ETP species, the <b>combined effects of the MSC UoAs</b> on the population /stock are known and <b>highly likely</b> to be within these limits.	Where national and/or international requirements set limits for ETP species, there is a <b>high degree of certainty</b> that the <b>combined effects of the MSC UoAs</b> are within these limits.
	Met?	NA	NA	NA
Rationale				
<p><i>Scientific data indicates that the populations of all ETP species encountered in the Adriatic Sea - loggerhead turtle (<i>Caretta caretta</i>), green turtle (<i>Chelonia mydas</i>), bottlenose dolphin (<i>Tursiops truncatus</i>), and striped dolphin (<i>Stenella coeruleoalba</i>) - are part of Mediterranean populations, which are recognised as distinct regional management units (Wallace et al., 2010; IUCN, 2012). Similarly there is evidence for distinct twaite shad populations in the Atlantic and Mediterranean Seas (Faria et al., 2012).</i></p> <p><i>With regards to turtles, scientific advances have recently been made to estimate the impact of fisheries bycatch on Mediterranean populations of loggerhead and green sea turtles (Casale and Heppell, 2016), but there are no set bycatch limits for protection and rebuilding of these populations in force at present. Similarly there are no set limits for the capture of twaite shad in the Mediterranean Sea. Since there are currently no national or international set limits for catches of the Mediterranean populations of the relevant ETP species scoring issue (a) was not scored.</i></p>				
<b>b</b>	Direct effects			
	Guide post	Known direct effects of the UoA are likely to not <b>hinder recovery</b> of ETP species.	Known direct effects of the UoA are likely to not <b>hinder recovery</b> of ETP species.	There is a <b>high degree of confidence</b> that there are no <b>significant detrimental direct effects</b> of the UoA on ETP species.
	Met?	Yes	Yes	No
Rationale				
<p><i>The detrimental direct effects of the UoA on the ETP species are not known with a high degree of confidence – SG 100 is not met.</i></p>				
<b>c</b>	Indirect effects			
	Guide post		Indirect effects have been considered for the UoA and are thought to be <b>highly likely</b> to not create unacceptable impacts.	There is a <b>high degree of confidence</b> that there are no <b>significant detrimental indirect effects</b> of the UoA on ETP species.
	Met?		<b>Yes</b>	<b>No</b>
Rationale				
<p><i>The detrimental indirect effects of the UoA on the ETP species are not known with a high degree of confidence – SG 100 is not met.</i></p>				
References				
<p><i>Bearzi, G., Fortuna, C. &amp; Reeves, R. (2012). <i>Tursiops truncatus</i> (Mediterranean subpopulation). The IUCN Red List of Threatened Species 2012: e.T16369383A16369386. Available online at: <a href="http://dx.doi.org/10.2305/IUCN.UK.2012-1.RLTS.T16369383A16369386.en">http://dx.doi.org/10.2305/IUCN.UK.2012-1.RLTS.T16369383A16369386.en</a> (accessed 14/06/2016).</i></p>				

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#### Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>80</b>
Information gap indicator	<b>Information sufficient to score PI</b>
Data-deficient? (Risk-Based Framework needed)	<b>No</b>

#### Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.3.2 – ETP species management strategy

PI 2.3.2		<p>The UoA has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> <li>- meet national and international requirements;</li> <li>- ensure the UoA does not hinder recovery of ETP species.</li> </ul> <p>Also, the UoA regularly reviews and implements measures, as appropriate, to minimise the mortality of ETP species</p>		
Scoring Issue		SG 60	SG 80	SG 100
Management strategy in place (national and international requirements)				
a	Guide post	There are <b>measures</b> in place that minimise the UoA-related mortality of ETP species, and are expected to be <b>highly likely to achieve</b> national and international requirements for the protection of ETP species.	There is a <b>strategy</b> in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to be <b>highly likely to achieve</b> national and international requirements for the protection of ETP species.	There is a <b>comprehensive strategy</b> in place for managing the UoA's impact on ETP species, including measures to minimise mortality, which is designed to <b>achieve above</b> national and international requirements for the protection of ETP species.
	Met?	<b>NA</b>	<b>NA</b>	<b>No</b>
Rationale				
<p><i>The assessment team considers that there is currently comprehensive strategy in place for managing the UoA's impact on ETP species, including measures to minimise mortality designed to achieve above national and international requirements for the protection of these species – SG 100 is not met.</i></p>				
Management strategy in place (alternative)				
b	Guide post	There are <b>measures</b> in place that are expected to ensure the UoA does not hinder the recovery of ETP species.	There is a <b>strategy</b> in place that is expected to ensure the UoA does not hinder the recovery of ETP species.	There is a <b>comprehensive strategy</b> in place for managing ETP species, to ensure the UoA does not hinder the recovery of ETP species.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
Rationale				
<p><i>Not relevant - there are requirements for protection or rebuilding provided through national ETP legislation or international agreements.</i></p>				
Management strategy evaluation				
c	Guide post	The measures are <b>considered likely</b> to work, based on <b>plausible argument</b> (e.g., general experience, theory or comparison with similar fisheries/species).	There is an <b>objective basis for confidence</b> that the measures/strategy will work, based on <b>information</b> directly about the fishery and/or the species involved.	The strategy/comprehensive strategy is mainly based on information directly about the fishery and/or species involved, and a <b>quantitative analysis</b> supports <b>high confidence</b> that the strategy will work.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
Rationale				
<p><i>To date no detailed quantitative analysis has been carried out to assess the impact of fishery-related mortality on turtles and cetaceans (FAO, 2016). SG60 and 80 are met. The most comprehensive review of the impact of incidental catches on Mediterranean Sea turtle populations is that carried out by Casale (2011), but this review does not include information on purse seiners. A quantitative analysis of the effectiveness of the strategy has thus yet to be carried out – SG 100 is not met.</i></p>				



Management strategy implementation				
d	Guide post		There is some <b>evidence</b> that the measures/strategy is being implemented successfully.	There is <b>clear evidence</b> that the strategy/comprehensive strategy is being implemented successfully and <b>is achieving its objective as set out in scoring issue (a) or (b).</b>
	Met?		<b>Yes</b>	<b>No</b>

#### Rationale

Given that ETP mortalities are low, SG 80 is met. There is no clear evidence that the strategies are being implemented successfully – SG 100 is not met.

#### Review of alternative measures to minimize mortality of ETP species

e	Guide post	There is a review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species.	There is a <b>regular</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality of ETP species and they are implemented as appropriate.	There is a <b>biennial</b> review of the potential effectiveness and practicality of alternative measures to minimise UoA-related mortality ETP species, and they are implemented, as appropriate.
	Met?	<b>Yes</b>	<b>No</b>	<b>No</b>

#### Rationale

GFCM Recommendation 35/2011/4 on incidental bycatch of sea turtles in fisheries in the GFCM Competence Area states that 'Upon receipt of advice from the SAC, the GFCM shall consider, if necessary, additional measures to mitigate sea turtle bycatch in those fisheries which have been considered most relevant', but no additional GFCM Decisions on management of sea turtle by-catch have been published since 2011 – SG 80 is not met.

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#### Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>60-79</b>
Information gap indicator	<b>Information sufficient to score PI</b>

#### Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

### PI 2.3.3 – ETP species information

<b>PI 2.3.3</b>		<b>Relevant information is collected to support the management of UoA impacts on ETP species, including:</b> <ul style="list-style-type: none"> <li>- Information for the development of the management strategy;</li> <li>- Information to assess the effectiveness of the management strategy; and</li> <li>- Information to determine the outcome status of ETP species</li> </ul>		
<b>Scoring Issue</b>		<b>SG 60</b>	<b>SG 80</b>	<b>SG 100</b>
<b>Information adequacy for assessment of impacts</b>				
<b>a</b>	<b>Guide post</b>	Qualitative information is <b>adequate to estimate</b> the UoA related mortality on ETP species.  <b>OR</b> <b>If RBF is used to score PI 2.3.1 for the UoA:</b> Qualitative information is <b>adequate to estimate productivity and susceptibility</b> attributes for ETP species.	Some quantitative information is <b>adequate to assess</b> the UoA related mortality and impact and to determine whether the UoA may be a threat to protection and recovery of the ETP species.  <b>OR</b> <b>If RBF is used to score PI 2.3.1 for the UoA:</b> Some quantitative information is <b>adequate to assess productivity and susceptibility</b> attributes for ETP species.	Quantitative information is available to assess with a high degree of certainty the <b>magnitude of UoA-related impacts, mortalities and injuries and the consequences for the status</b> of ETP species.
	<b>Met?</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				
<i>Whilst quantitative literature information on UoA related impacts is available (SG 80 is met), data which would allow for an assessment of the magnitude of these impacts at population level with a high degree of certainty is lacking. Moreover data on post-release impacts due to injuries is lacking – SG 100 is not met.</i>				
<b>Information adequacy for management strategy</b>				
<b>b</b>	<b>Guide post</b>	Information is adequate to support <b>measures</b> to manage the impacts on ETP species.	Information is adequate to measure trends and support a <b>strategy</b> to manage impacts on ETP species.	Information is adequate to support a <b>comprehensive strategy</b> to manage impacts, minimize mortality and injury of ETP species, and evaluate with a <b>high degree of certainty</b> whether a strategy is achieving its objectives.
	<b>Met?</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				
<i>Overall the information is adequate to support a comprehensive strategy to manage impacts, minimize mortality and injury of ETP species (SG 80 is met), while the evaluation with a high degree of certainty whether a strategy is achieving its objectives is lacking – SG 100 is not met.</i>				
<b>References</b>				
<i>ICES. 2015. Report of the Working Group on Bycatch of Protected Species (WGBYC), 2-6 February 2015, ICES Headquarters, Copenhagen, Denmark. ICES CM 2015\ACOM: 26. 82 pp.</i>				
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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>80</b>
Information gap indicator	<b>Information sufficient to score PI</b>

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.4.1 – Habitats outcome

PI 2.4.1		The UoA does not cause serious or irreversible harm to habitat structure and function, considered on the basis of the area covered by the governance body(s) responsible for fisheries management in the area(s) where the UoA operates		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Commonly encountered habitat status			
	Guide post	The UoA is <b>unlikely</b> to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	The UoA is <b>highly unlikely</b> to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				
<p><i>It is widely acknowledged that extensive areas of soft bottom habitats are present in the Adriatic Sea (Vatova (1949; Gamulin-Brinda, 1967; Scardi et al., 1999; Jenkins, 2008, Piras et al., 2016). These soft bottoms show a general pattern of changing from sand to muddy / detritic bottoms with increasing distance from the shore (Brambati et al., 1983).</i></p> <p><i>Purse seiners operate in the water column, and as such are generally not in contact with benthic habitats and/or species. The fishing net is configured not to interact with the seabed during the actual fishing operation, and damage to the gear is likely to occur before any substantial damage to benthic communities takes place. Since fishing operations take place over soft bottom habitats and any contact of the fishing gear with bottom habitats will be brief to avoid damage to the fishing gear, the assessment team considers that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm – SG 60 and SG 80 are met.</i></p> <p><i>The team also consider that there is also evidence that the UoA is highly unlikely to reduce structure and function of the commonly encountered habitats to a point where there would be serious or irreversible harm – SG 100 is met.</i></p>				
<b>b</b>	VME habitat status			
	Guide post	The UoA is <b>unlikely</b> to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	The UoA is <b>highly unlikely</b> to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
Rationale				
<p><i>Information on the distribution of VME habitats in the Adriatic Sea is available from a number of sources (e.g. Casellato and Stefanon, 2008; Martin et al., 2014; Telesca et al., 2015), and publically available online through the MAREA-MEDISEH project online map viewer (<a href="http://mareaproject.net/medviewer/">http://mareaproject.net/medviewer/</a>). Sensitive habitats in general and VMEs in particular are protected from the impact of fishing gears by a number of EU Directives, including the Habitat's Directive (EEC 92/43), the Marine Strategy Framework Directive (EC 2008/56), and the Mediterranean fisheries Regulation (EC 1967/2006 as amended by EC 1343/2011).</i></p> <p><i>In addition to these legislative instruments there are at present 25 Marine Protected Areas (MPAs) in the Adriatic Sea (including coastal MPAs which partly cover marine areas); 21 of these MPAs are in the eastern Adriatic including 17 in Croatia (Bastari et al., 2016). 4 additional MPAs are currently in the planning phases: 2 in Albania and 2 in Central Italy (Randone, 2016). These protected areas are strictly enforced by the Italian coastguard, who monitor the location of fishing vessels through VMS. Indeed fishing vessels of the UoC are aware of the location of protected areas, which are highlighted on their on-board navigation system.</i></p>				

Since the location of VMEs is well known, a number of effective management measures are in place to protect VMEs from fishing in the area where the UoA operates, and these measures are being adequately implemented by the local authorities and appear to be respected by fishers, the assessment team considers that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm – SG 60 and SG 80 are met.

Precise information on the location of fishing grounds based on data from satellite-based Vessel Monitoring System (VMS) was not available to the assessment team. There is thus no evidence that the UoA is highly unlikely to reduce structure and function of the VME habitats to a point where there would be serious or irreversible harm – SG 100 is not met.

Minor habitat status			
<b>C</b>	Guide post		There is <b>evidence</b> that the UoA is highly unlikely to reduce structure and function of the minor habitats to a point where there would be serious or irreversible harm.
	Met?		<b>No</b>

#### Rationale

Hard bottom rocky substrata were identified to be minor habitats since they are not common in the Adriatic Sea in general, and thus not commonly encountered by the UoA. Although there is some evidence that rocky areas / reefs are in some cases included in Marine Protected Areas or temporal closure areas (a map of MPAs is available in Bastari et al., 2016), precise information on the location of fishing grounds based on data from satellite-based Vessel Monitoring System (VMS) was not available to the assessment team. There is thus no evidence that the UoA is highly unlikely to reduce structure and function of minor habitats to a point where there would be serious or irreversible harm – SG 100 is not met.

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#### Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>&gt;80</b>
Information gap indicator	<b>Information sufficient to score PI</b>
Data-deficient? (Risk-Based Framework needed)	<b>No</b>

#### Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.4.2 – Habitats management strategy

PI 2.4.2		There is a strategy in place that is designed to ensure the UoA does not pose a risk of serious or irreversible harm to the habitats		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Management strategy in place</b>			
	<b>Guide post</b>	There are <b>measures</b> in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.	There is a <b>partial strategy</b> in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.	There is a <b>strategy</b> in place for managing the impact of all MSC UoAs/non-MSC fisheries on habitats.
	<b>Met?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Rationale</b>				
<p><i>Benthic habitats in general, and sensitive habitats in particular are protected from the impact of fishing gears by EU legislation:</i></p> <ul style="list-style-type: none"> <li>- <i>Directive (EC) 2008/56 on establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive). The over-arching goal of the Directive is to achieve ‘Good Environmental Status’ by 2020 across Europe’s marine environment. Good environmental status shall be determined at the level of the marine regions or sub-regions, and on the basis of a series of qualitative descriptors. Descriptor 6 requires that: ‘Sea-floor integrity is at a level that ensures that the structure and functions of the ecosystems are safeguarded and benthic ecosystems, in particular, are not adversely affected’.</i></li> <li>- <i>Council Directive (EEC) 92/43 of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (often referred to as the ‘Habitats Directive’): the main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring EU Member States to take measures to maintain or restore natural habitats as well as the populations of wild species listed in the Directive’s Annexes, and to maintain habitats and species at a favourable conservation status.</i></li> <li>- <i>Council Regulation (EC) No 1967/2006 (as amended by EC 1343/2011) concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea.</i></li> </ul> <p><i>Besides the coastal areas which are protected from fishing, there are at present 25 Marine Protected Areas (MPAs) as well as numerous temporal closure areas designed to reduce the impact of fishing activities on the marine environment in general (Bastari et al. 2016). These protected / temporal closure areas as well as fishing gear restrictions are enforced by the Italian coastguard, who monitor the location and movement of fishing vessels through satellite-based Vessel Monitoring System, which is compulsory on fishing vessels of 12 metres’ length overall or more (EC 1224/2009). Fishing vessels of the UoC are aware of the location of protected areas, which are highlighted on their on-board navigation system.</i></p> <p><i>Ongoing monitoring is required under the Marine Strategy Framework Directive, which requires that EU Member States establish environmental targets and monitoring programmes for ongoing assessment, enabling the state of the marine waters concerned to be evaluated on a regular basis.</i></p> <p><i>Since there is active management which reduces the impacts of fishing on benthic habitats, includes special provisions for the protection of critical habitats such as nursery areas as well as VMEs, as well as for continuous monitoring and enforcement, the assessment team considers that SG 100 is met.</i></p>				
<b>b</b>	<b>Management strategy evaluation</b>			
	<b>Guide post</b>	The measures are <b>considered likely</b> to work, based on plausible argument (e.g. general experience, theory or comparison with similar UoAs/habitats).	There is some <b>objective basis for confidence</b> that the measures/partial strategy will work, based on <b>information directly about the UoA and/or habitats</b> involved.	<b>Testing supports high confidence</b> that the partial strategy/strategy will work, based on <b>information directly about the UoA and/or habitats</b> involved.
	<b>Met?</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				



Based on (i) the variety of measures in place to reduce the impact of fisheries in general, and purse-seine fisheries in particular on the benthic habitats (see scoring issue (a) above for details), and (ii) available studies assessing the habitat impacts of fishing (e.g. Lucchetti and Sala, 2012; Lucchetti et al., 2018), there is some objective basis for confidence that the measures / partial strategy will work – SG 60 and SG 80 are met.

Testing to support high confidence that the strategy will work has yet to be carried out, so SG 100 is not met.

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

**Rationale**

There is some quantitative evidence that the measures/partial strategy is being implemented successfully, for example:

- Several coastal / marine Natura 2000 sites have been established in the Adriatic Sea in line with the EEC 92/43;
- Protected areas, temporal closures and fishing gear restrictions are being enforced by the Italian coastguard, who monitor the location and movement of fishing vessels through satellite-based Vessel Monitoring System, which is compulsory on fishing vessels of 12 metres' length overall or more (EC 1224/2009). The UoA has a good compliance record, in particular with regards to respecting areas and seasons closed to fishing.

The assessment team thus considers that SG 80 is met.

Clear quantitative evidence that the strategy is being implemented successfully and is achieving its objective is lacking – SG 100 is not met.

<b>Compliance with management requirements and other MSC UoAs'/non-MSC fisheries' measures to protect VMEs</b>				
<b>d</b>	Guide post	There is <b>qualitative evidence</b> that the UoA complies with its management requirements to protect VMEs.	There is <b>some quantitative evidence</b> that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.	There is <b>clear quantitative evidence</b> that the UoA complies with both its management requirements and with protection measures afforded to VMEs by other MSC UoAs/non-MSC fisheries, where relevant.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>

**Rationale**

Some quantitative evidence that the UoA complies with its management requirements to protect VMEs is available:

- Satellite-based Vessel Monitoring System (VMS) data are routinely used by the authorities in charge of enforcement;
- Information on the number of infringements issued by the Italian authorities against vessels of the UoA as part of monitoring and enforcement inspections is routinely compiled and shows that fishing in closed / protected areas is not a concern.

The assessment team thus considers that SG 60 and SG 80 are met.

**References**

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	>80
Information gap indicator	<b>Information sufficient to score PI</b>

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.4.3 – Habitats information

PI 2.4.3		Information is adequate to determine the risk posed to the habitat by the UoA and the effectiveness of the strategy to manage impacts on the habitat		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Information quality</b>			
	<b>Guide post</b>	<p>The types and distribution of the main habitats are <b>broadly understood</b>.</p> <p><b>OR</b></p> <p><b>If CSA is used to score PI 2.4.1 for the UoA:</b> Qualitative information is adequate to estimate the types and distribution of the main habitats.</p>	<p>The nature, distribution and <b>vulnerability</b> of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA.</p> <p><b>OR</b></p> <p><b>If CSA is used to score PI 2.4.1 for the UoA:</b> Some quantitative information is available and is adequate to estimate the types and distribution of the main habitats.</p>	<p>The distribution of all habitats is known over their range, with particular attention to the occurrence of vulnerable habitats.</p>
	<b>Met?</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				
<p><i>The Adriatic Sea supports a wide diversity of habitats, including coralligenous communities, maerl bottoms, seagrass meadows, rocky reef areas, and extensive areas of soft bottoms (Jenkins, 2008; MEDISEH, 2013; Bastari et al., 2016). Based on the available information the assessment team identified the following European Nature Information System (EUNIS) habitat categories to be relevant for the assessment:</i></p> <p><i>Minor habitats</i></p> <ul style="list-style-type: none"> <li>- A3: Infralittoral rock and other hard substrata</li> <li>- A4: Circalittoral rock and other hard substrata</li> </ul> <p><i>Main habitats:</i></p> <ul style="list-style-type: none"> <li>- A5.1: Sublittoral coarse sediment</li> <li>- A5.2: Sublittoral sand</li> <li>- A5.3: Sublittoral mud</li> <li>- A5.4: Sublittoral mixed sediments</li> <li>- A5.5: Sublittoral macrophyte-dominated sediment =&gt; A5.51: Maerl beds</li> <li>- A5.5: Sublittoral macrophyte-dominated sediment =&gt; A5.53: Sublittoral seagrass beds (Posidonia, Cymodocea, Zostera etc.)</li> <li>- A5.5: Sublittoral macrophyte-dominated sediment =&gt; A5.54: Angiosperm communities in reduced salinity (vegetation in brackish water, Zostera in reduced salinity etc.)</li> <li>- A5.6: Sublittoral biogenic reefs (mussel beds, Lophelia reefs, polychaete reefs)</li> </ul> <p><i>A map of soft bottom habitats in the Adriatic Sea is available from Jenkins (2008); data on the benthic assemblages found in these soft bottom habitats was first compiled by Vatova (1949), and subsequently studied by a number of authors (e.g. Gamulin-Brinda, 1967; Scardi et al., 1999; Piras et al., 2016). A thorough review of existing spatial datasets showing the distribution of coralligenous, maerl and seagrass habitats across the entire Mediterranean, including the Adriatic Sea, was undertaken by the MEDISEH (Mediterranean Sensitive Habitats) project (MEDISEH, 2013), whose results are available online on the MAREA (Mediterranean hAlieutic Resources Evaluation and Advice) online map viewer (<a href="http://mareaproject.net/medviewer/">http://mareaproject.net/medviewer/</a>), and have been published in scientific journals (e.g. Martin et al., 2014; Telesca et al., 2015). The assessment team thus considers that the nature, types and distribution of the main habitats are broadly understood – SG 60 is met.</i></p> <p><i>Purse seiners operate in the water column, and as such are generally not in contact with benthic habitats and/or species. The fishing net is configured not to interact with the seabed during the actual fishing operation, and damage to the gear is likely to occur before any substantial damage to benthic communities takes place. The</i></p>				

assessment team is of the opinion that the vulnerability of the main habitats in the UoA area are known at a level of detail relevant to the scale and intensity of the UoA – SG 80 is met.

Although the distribution of both main and minor habitats are known at a level of detail relevant to the scale and intensity of the UoA, the distribution of all habitats is not well known over their range since several of the available habitat maps are lacking in detail and / or are outdated – SG 100 is not met.

Information adequacy for assessment of impacts				
<b>b</b>	Guide post	Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear.	Information is adequate to allow for identification of the main impacts of the UoA on the main habitats, and there is reliable information on the spatial extent of interaction and on the timing and location of use of the fishing gear.	The physical impacts of the gear on all habitats have been quantified fully.
		OR <b>If CSA is used to score PI 2.4.1 for the UoA:</b> Qualitative information is adequate to estimate the consequence and spatial attributes of the main habitats.	OR <b>If CSA is used to score PI 2.4.1 for the UoA:</b> Some quantitative information is available and is adequate to estimate the consequence and spatial attributes of the main habitats.	
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>

#### Rationale

Information on the impacts of purse seiners on benthic habitats is available from both scientific and grey literature (STECF 12-12), and the distribution of main habitats is known (for details refer to scoring issue a).

The available information is thus adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear – SG 60 is met.

Although the information was not available to the assessment team, the Italian coastguard monitors the location and movement of fishing vessels through satellite-based Vessel Monitoring System, which is compulsory on fishing vessels of 12 metres' length overall or more (EC 1224/2009). The UoA has a good compliance record, in particular with regards to respecting areas and seasons closed to fishing. Information to allow for an adequate identification of the main impacts of the UoA on the main habitats, and information on the spatial extent of interaction and on the timing and location of use of the fishing gear is thus adequate – SG 80 is met.

Monitoring				
<b>c</b>	Guide post		Adequate information continues to be collected to detect any increase in risk to the main habitats.	Changes in all habitat distributions over time are measured.
			<b>Yes</b>	<b>No</b>

#### Rationale

The UoA's area of operation is continuously monitored by the relevant authorities through the use of VMS data. EU Member States have obligations to monitor any increase in risk to benthic habitats in general and sensitive habitats in particular under the Marine Strategy Framework Directive (EC 2008/56) as well as the Habitats Directive (EEC 94/43). Furthermore, under the MSFD Member States are required to implement 'programmes of measures for the protection and management of the marine environment', and to present interim reports describing progress in the implementation of these programmes to the Commission. The effectiveness of the implemented management measures is thus also monitored. The assessment team thus considers that adequate information continues to be collected to detect any increase in risk to the main habitats – SG 80 is met.

Although Member States have an obligation to measure changes in habitat distributions over time under the MSFD and Habitats Directive, the assessment team considers that sufficiently detailed habitat maps are currently not available for all marine habitats in the Adriatic Sea – SG 100 is not met.

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	80
Information gap indicator	<b>Information sufficient to score PI</b>

Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.5.1 – Ecosystem outcome

PI 2.5.1		The UoA does not cause serious or irreversible harm to the key elements of ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Ecosystem status</b>			
	<b>Guide post</b>	The UoA is <b>unlikely</b> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	The UoA is <b>highly unlikely</b> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.	There is <b>evidence</b> that the UoA is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.
	<b>Met?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Rationale</b>				
<p><i>Coll et al. (2007) developed a trophic mass-balance model to characterise the food web of the Northern and Central Adriatic and described a total of forty functional groups, including target and non-target fish, invertebrate groups and detritus groups. The model highlighted that there is important coupling between benthic and pelagic production of detritus, benthic invertebrates and plankton. Organisms characterising mainly the low and medium trophic levels, but also the upper trophic levels were important in terms of keystone and total effects: phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins were all ranked highly.</i></p> <p><i>A subsequent review of functional groups acting as keystones in the Mediterranean Sea food webs confirmed this unique combination of suprabenthos, micro- and mesozooplankton, dolphins and small pelagic fish in structuring the Adriatic Sea ecosystem, and highlighted the importance of benthic organisms as key structuring species with a relatively high proportion of biomass (Coll and Libralato, 2012). These functional groups were thus interpreted as being the features giving the ecosystem its characteristic nature and dynamics. Species which have been considered separately in this assessment (the P1 target species anchovy and sardine; ETP species striped and bottlenose dolphins) were not considered again.</i></p> <p><i>Since purse seiners operate in the water column they are generally not in contact with benthic habitats and/or species and as such the assessment team considers that the UoA is highly unlikely to disrupt the functional groups 'subrabenthos' and 'benthic invertebrates' as defined by Coll et al. (2007) to a point where there would be serious or irreversible harm. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted – SG 60 and SG 80 are met.</i></p> <p><i>The assessment team considers that there is also evidence that the UoA is highly unlikely to disrupt suprabenthos and benthic invertebrates – SG 100 is thus met for these scoring elements.</i></p> <p><i>The modelling results obtained by Coll et al. (2007) highlight important coupling between the demersal and pelagic compartments due to links between detritus, benthic invertebrates and zooplankton. Such tight coupling may be due to the relatively shallow waters, as well as the general water exchange patterns which prevail in the Adriatic. A high proportion of zooplankton production appears to be directed to detritus, thus maintaining high levels of benthic production, which in turn generate detritus which maintains zooplankton populations (Coll et al., 2007). The important link between benthic invertebrates and detritus components of Adriatic Sea food webs may be affected directly or indirectly by fishing activities. Fishing may be enhancing the re-suspension of organic matter, and discards may be converted to benthic detritus (Coll et al., 2007; Libralato et al., 2010). Although the re-suspension of organic matter is likely to be limited since purse seines only briefly touch the bottom at the beginning or end of fishing operations, if at all, and overall discard volumes by the UoA are low (see section on secondary species for detailed data on discard volumes), the assessment team nevertheless considers that there is 'evidence' that the UoA is highly unlikely to disrupt plankton communities – SG 100 is thus met.</i></p> <p><i>The potential direct and indirect impacts of the UoA on micro- and mesozooplankton communities through the re-suspension of organic matter and / or the conversion of discards to benthic detritus will not affect primary productivity by phytoplankton communities, which are mainly influenced by fluctuations in salinity, nutrients and temperature (Giani et al., 2012). For this scoring element SG 100 is thus met.</i></p>				

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### Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>&gt;80</b>
Information gap indicator	<b>Information sufficient to score PI</b>
Data-deficient? (Risk-Based Framework needed)	<b>No</b>

### Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	



## PI 2.5.2 – Ecosystem management strategy

PI 2.5.2		There are measures in place to ensure the UoA does not pose a risk of serious or irreversible harm to ecosystem structure and function		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Management strategy in place			
	Guide post	There are <b>measures</b> in place, if necessary which take into account the <b>potential impacts</b> of the UoA on key elements of the ecosystem.	There is a <b>partial strategy</b> in place, if necessary, which takes into account <b>available information and is expected to restrain impacts</b> of the UoA on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.	There is a <b>strategy</b> that consists of a <b>plan</b> , in place which contains measures to <b>address all main impacts of the UoA</b> on the ecosystem, and at least some of these measures are in place.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				
<p>The potential impacts of the UoA on the key elements of the ecosystem are constrained by a number of relevant measures, including:</p> <ul style="list-style-type: none"> <li>- Regulation (EU) No 1380/2013 on the Common Fisheries Policy (CFP) outlining a set of rules for managing European fishing fleets and for conserving fish stocks. Under the CFP an ecosystem-based approach to fisheries management needs to be implemented, and environmental impacts of fishing activities should be limited.</li> <li>- Commission Delegated Regulation (EU) No 1392/2014 of 20 October 2014 establishing a discard plan for certain small pelagic fisheries in the Mediterranean Sea, which specifies the details for implementing the landing obligation specified in the new Common Fisheries Policy (CFP).</li> <li>- Regulation (EC) No 1967/2006 (as amended by EC 1343/2011) concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea. This regulation outlines a number of measures to protect Mediterranean marine ecosystems from the effects of fishing, including requirements to ban fishing in coastal waters, to protect sensitive habitats and to establish fishing protected areas.</li> <li>- Directive 2008/56/EC on establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive - MSFD). The MSFD outlines a legislative framework for an ecosystem-based approach to the management of human activities which supports the sustainable use of marine goods and services. The overarching goal of the Directive is to achieve 'Good Environmental Status' (GES) by 2020 across Europe's marine environment. Descriptors 1 and 4 of the MSFD include requirements that "the distribution and abundance of species are in line with prevailing physiographic, geographic and climatic conditions" and that "all elements of the marine food webs, to the extent that they are known, occur at normal abundance and diversity and levels capable of ensuring the long-term abundance of the species and the retention of their full reproductive capacity".</li> </ul> <p>Achieving GES under the MSFD requires Member States to follow a plan of action stipulated by the Directive as follows:</p> <ul style="list-style-type: none"> <li>- Preparation of an 'initial assessment' of the environmental status of marine waters by July 2012;</li> <li>- Determination of GES, and establishment of associated environmental targets and indicators by July 2012;</li> <li>- Implementation of a monitoring programme for the ongoing assessment of GES and targets by July 2014;</li> <li>- Development of a programme of measures designed to achieve GES by 2015, which will be made operational by 2016.</li> <li>- A review process to reassess the effectiveness of national action plans every six years.</li> </ul> <p>The assessment team considers that there is thus a strategy that consists of a plan in place, and that this strategy contains measures to address all main impacts of the UoA on the ecosystem. There is evidence that at least some of these measures are in place – SG 100 is met.</p>				
<b>b</b>	Management strategy evaluation			
	Guide post	The <b>measures</b> are considered likely to work, based on plausible argument (e.g., general experience,	There is <b>some objective basis for confidence</b> that the measures/ partial strategy will work, based on some information directly about the	<b>Testing</b> supports <b>high confidence</b> that the partial strategy/ strategy will work, based on information directly

		theory or comparison with similar UoAs/ ecosystems).	UoA and/or the ecosystem involved.	about the UoA and/or ecosystem involved.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

#### Rationale

*The management strategy in place is comprehensive, based on a wide range of applicable management measures, takes into account all the potential impacts of the UoA on key elements of the ecosystem (see scoring issue a), and once implemented successfully can be expected to work.*

*Purse seiners operate in the water column, and as such are generally not in contact with benthic habitats and/or species; purse seines are widely considered very low impact gears with respect to benthic habitats (Lucchetti and Sala, 2012; STECF 12-12). The fishing net is configured not to interact with the seabed during the actual fishing operation, and damage to the gear is likely to occur before any irreversible harm to benthic invertebrates or suprabenthos is likely to be done. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted.*

*In light of the comprehensive strategy in place and the low impacts of the UoA on key elements of the ecosystem the assessment team considers that there is some objective basis for confidence that the measures/partial strategy will work – SG 60 and SG 80 are met.*

*Testing to support high confidence that the strategy will work has yet to be carried out, so SG 100 is not met.*

	Management strategy implementation			
<b>C</b>	Guide post		There is <b>some evidence</b> that the measures/partial strategy is being <b>implemented successfully</b> .	There is <b>clear evidence</b> that the partial strategy/strategy is being <b>implemented successfully and is achieving its objective as set out in scoring issue (a).</b>
	Met?		<b>Yes</b>	<b>No</b>

#### Rationale

*Evidence that the strategy is being implemented successfully comes from a number of sources, such as for example:*

- *Records of control and enforcement activities carried out by the relevant authorities, e.g. records of infringements issued by the Italian coast guard.*
- *Information on fishing vessel activities from satellite-based VMS and / or AIS data, which although not available to the assessment team is routinely used for law enforcement purposes.*
- *The information collected and processed by the Italian authorities to comply with the MSFD implementation requirements is publically available through the European Environment Information and Observation Network (EIONET) Reporting Obligations Database (<http://rod.eionet.europa.eu/obligations/608>), and further information specifically for Italy is provided on the website of the Istituto Superiore per la Protezione e la Ricerca Ambientale (<http://www.sintai.sinanet.apat.it/msfd/>). The available reports provide a detailed analysis of the ecological characteristics and status of the marine environment in the Adriatic Sea, the influence of anthropogenic influences such as commercial fishing activities, and provide details on the implementation of the MSFD in the Adriatic.*

*The assessment team thus considers that there is some evidence that the management strategy is being implemented successfully – SG 80 is met. Evidence that the strategy is achieving its objectives is however not yet available for the Adriatic Sea – SG 100 is not met.*

#### References

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*Le Fur, F. 2010. Référentiel pour la gestion dans les sites Natura 2000 en mer - Tome 1 Pêche professionnelle. Activités - Interactions - Dispositifs d'encadrement. Report by Agence des Aires Marines Protégées. 152 pp. Available online at: <http://www.airesmarines.fr/Documentation/Referentiels-pour-la-gestion-des-sites-Natura-2000-en-mer> (accessed 16/10/2015).*

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Lucchetti, A., Notti, E., Sala, A., Virgili M., 2018. *Multi-purpose use of side-scan sonar technology for fisheries science. Canadian journal of fisheries and aquatic sciences*, 75: 1652-1662.

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Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	>80
Information gap indicator	Information sufficient to score PI

Overall Performance Indicator scores added from Client and Peer Review Draft Report

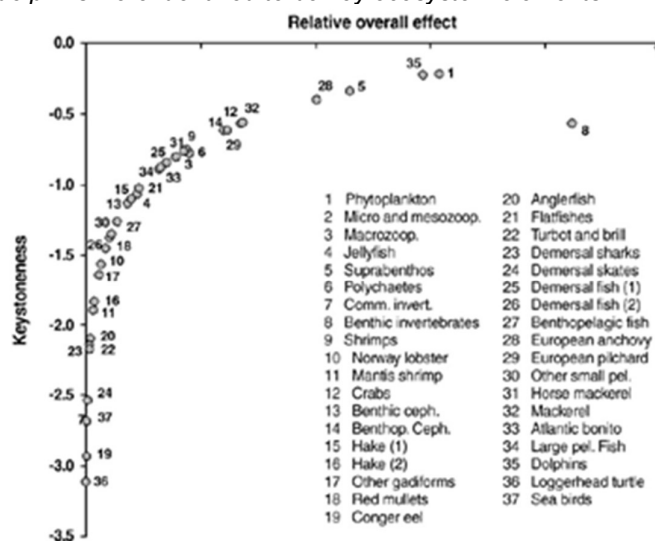
Overall Performance Indicator score	
Condition number (if relevant)	

## PI 2.5.3 – Ecosystem information

PI 2.5.3		There is adequate knowledge of the impacts of the UoA on the ecosystem		
Scoring Issue	SG 60	SG 80	SG 100	
<b>a</b>	Information quality			
	Guide post	Information is adequate to <b>identify</b> the key elements of the ecosystem.	Information is adequate to <b>broadly understand</b> the key elements of the ecosystem.	
	Met?	<b>Yes</b>	<b>Yes</b>	

### Rationale

Coll et al. (2007) developed a trophic mass-balance model to characterise the food web of the Northern and Central Adriatic and described a total of forty functional groups, including target and non-target fish, invertebrate groups and detritus groups. Key elements of the ecosystem were identified by ranking functional groups according to (1) relative overall effect and (2) a keystone index. Phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins were identified to be key ecosystem elements.



Relative overall effect ( $\epsilon_i$ ) and keystone index ( $KS_i$ ) of functional groups in the Adriatic Sea ecosystem. Keystone groups are those with higher  $\epsilon_i$  and higher  $KS_i$  (Coll et al., 2007).

This result was substantiated by subsequent work (Coll et al., 2008d; Coll et al., 2009c); a review of functional groups acting as keystones in the Mediterranean Sea food webs compiled by Coll and Libralato (2012) confirmed that suprabenthos, micro- and mesozooplankton, dolphins and small pelagic fish are the most important functional groups in structuring the Adriatic Sea ecosystem.

Besides identifying these functional groups as key elements, these studies also describe their role in the Adriatic ecosystem. The assessment team thus considers that information is adequate to broadly understand the key elements of the ecosystem – SG 80 is met.

<b>b</b>	Investigation of UoA impacts			
	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but <b>have not been investigated</b> in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and <b>some have been investigated in detail.</b>	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and <b>have been investigated in detail.</b>
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

### Rationale

Purse seiners operate in the water column, and as such are generally not in contact with benthic habitats and/or species; purse seines are widely considered very low impact gears with respect to benthic habitats (Lucchetti and Sala, 2012; STECF 12-12). The fishing net is configured not to interact with the seabed during the actual fishing operation, and damage to the gear is likely to occur before any irreversible harm to benthic invertebrates or suprabenthos is likely to be done. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted. The main impacts of the UoA on key ecosystem elements can thus be inferred – SG 60 is met.

The assessment team considers that some of the main impacts of the UoA on key ecosystem elements have been investigated in detail – SG 80 is met.

Whilst the main interactions between the UoA and ecosystem elements can to an extent be inferred from existing information, these interactions have not been investigated in detail – SG 100 is not met for micro- / mesozooplankton, benthic invertebrates and suprabenthos.

Since interactions between the UoA and phytoplankton are highly unlikely to be taking place the assessment team considers that detailed investigations are not relevant – SG 100 is met for this scoring element.

### Understanding of component functions

<b>c</b>	Guide post		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are <b>known</b> .	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are <b>understood</b> .
	Met?		<b>Yes</b>	<b>Yes</b>

### Rationale

Impacts of the fishery on ecosystem components have been identified. Numerous ongoing / past research projects have contributed to our understanding of the Adriatic ecosystem in general, and on the main functions of ecosystem components in particular. A substantial body of scientific literature exists on the topic – the reference list provided with this assessment list gives an overview of some of the most relevant scientific and grey literature. The assessment team is of the opinion that the Adriatic Sea is one of the most studied areas of the Mediterranean Sea, and that as such SG 80 and SG 100 are met.

### Information relevance

<b>d</b>	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components <b>and elements</b> to allow the main consequences for the ecosystem to be inferred.
	Met?		<b>Yes</b>	<b>Yes</b>

### Rationale

Adequate information is available on the impacts of the UoA on the main components (i.e., P1 target species, secondary and ETP species and Habitats) to allow some of the main consequences for the ecosystem to be inferred – SG 80 is met.

Adequate information is also available on the impacts of the UoA on key ecosystem elements (i.e. phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins (Coll et al., 2007)) to allow the main consequences for the ecosystem to be inferred – SG 100 is met.

### Monitoring

<b>e</b>	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		<b>Yes</b>	<b>Yes</b>

## Rationale

Monitoring data which would allow to detect any increase in risk level comes from a number of sources:

- The fisheries Data Collection Framework (DCF) implemented by European Member States / the Data Collection Reference Framework (DCRF) implemented through the GFCM: Data on fishing effort, catches and discards are routinely collected for the UoA. Fisheries independent data is collected through the scientific surveys MEDITS (Mediterranean International Trawl Survey), MEDIAS (Mediterranean International Acoustic Survey) and SOLEMON (survey for the study of flatfish stocks in the central and northern Adriatic Sea).
- The activity of the UoA is continuously monitored by the relevant authorities, including through the use of satellite-based VMS data.
- Monitoring strategies and programmes being implemented by EU Member States as part of obligations arising from the implementation of the Marine Strategy Framework Directive. Member States are obliged to implement the monitoring activities for ongoing assessment and regular updating of environmental targets, including on the maintenance of biological diversity, marine food-webs and sea-floor integrity.
- Scientific research activities in the Adriatic Sea is ongoing, and will complement information coming from fisheries and environmental monitoring activities by providing further information on best practices to manage impacts.

The assessment team thus considers that adequate data continue to be collected to detect any increase in risk level, and that the available information is adequate to support the development of strategies to manage ecosystem impacts – SG 80 and SG 100 are met.

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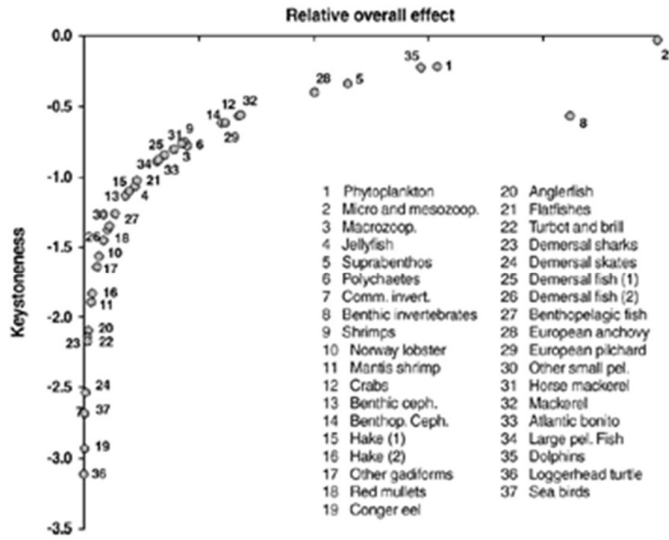
Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range

>80

Coll et al. (2007) developed a trophic mass-balance model to characterise the food web of the Northern and Central Adriatic and described a total of forty functional groups, including target and non-target fish, invertebrate groups

and detritus groups. Key elements of the ecosystem were identified by ranking functional groups according to (1) relative overall effect) and (2) a keystone index. Phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins were identified to be key ecosystem elements.



Relative overall effect ( $\epsilon_i$ ) and keystone index (KSi) of functional groups in the Adriatic Sea ecosystem. Keystone groups are those with higher  $\epsilon_i$  and higher KSi (Coll et al., 2007).

This result was substantiated by subsequent work (Coll et al., 2008d; Coll et al., 2009c); a review of functional groups acting as keystones in the Mediterranean Sea food webs compiled by Coll and Libralato (2012) confirmed that suprabenthos, micro- and mesozooplankton, dolphins and small pelagic fish are the most important functional groups in structuring the Adriatic Sea ecosystem.

Besides identifying these functional groups as key elements, these studies also describe their role in the Adriatic ecosystem. The assessment team thus considers that information is adequate to broadly understand the key elements of the ecosystem – SG 80 is met.

Investigation of UoA impacts				
<b>b</b>	Guide post	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, but <b>have not been investigated</b> in detail.	Main impacts of the UoA on these key ecosystem elements can be inferred from existing information, and <b>some have been investigated in detail.</b>	Main interactions between the UoA and these ecosystem elements can be inferred from existing information, and <b>have been investigated in detail.</b>
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

### Rationale

Purse seiners operate in the water column, and as such are generally not in contact with benthic habitats and/or species; purse seines are widely considered very low impact gears with respect to benthic habitats (Lucchetti and Sala, 2012; STECF 12-12). The fishing net is configured not to interact with the seabed during the actual fishing operation, and damage to the gear is likely to occur before any irreversible harm to benthic invertebrates or suprabenthos is likely to be done. Similarly the UoA is highly unlikely to cause permanent changes in the diversity of plankton communities, or to impact the capacity of phytoplankton and micro- / mesozooplankton to a point where productivity would be adversely impacted. The main impacts of the UoA on key ecosystem elements can thus be inferred – SG 60 is met.

The assessment team considers that some of the main impacts of the UoA on key ecosystem elements have been investigated in detail – SG 80 is met.

Whilst the main interactions between the UoA and ecosystem elements can to an extent be inferred from existing information, these interactions have not been investigated in detail – SG 100 is not met for micro- / mesozooplankton, benthic invertebrates and suprabenthos.

Since interactions between the UoA and phytoplankton are highly unlikely to be taking place the assessment team considers that detailed investigations are not relevant – SG 100 is met for this scoring element.

### **c** Understanding of component functions

	Guide post		The main functions of the components (i.e., P1 target species, primary, secondary and ETP species and Habitats) in the ecosystem are <b>known</b> .	The impacts of the UoA on P1 target species, primary, secondary and ETP species and Habitats are identified and the main functions of these components in the ecosystem are <b>understood</b> .
	Met?		<b>Yes</b>	<b>Yes</b>

#### Rationale

*As detailed in report sections 2.3 (P1 target species) and 2.4.1 – 2.4.4, (P2 primary / secondary / ETP species and habitats) impacts of the fishery on ecosystem components have been identified. Numerous ongoing / past research projects have contributed to our understanding of the Adriatic ecosystem in general, and on the main functions of ecosystem components in particular. A substantial body of scientific literature exists on the topic – the reference list provided with this assessment list gives an overview of some of the most relevant scientific and grey literature. The assessment team is of the opinion that the Adriatic Sea is one of the most studied areas of the Mediterranean Sea, and that as such SG 80 and SG 100 are met.*

	Information relevance			
<b>d</b>	Guide post		Adequate information is available on the impacts of the UoA on these components to allow some of the main consequences for the ecosystem to be inferred.	Adequate information is available on the impacts of the UoA on the components <b>and elements</b> to allow the main consequences for the ecosystem to be inferred.
	Met?		<b>Yes</b>	<b>Yes</b>

#### Rationale

*As detailed in report sections 2.3 / 2.4.1 – 2.4.4, adequate information is available on the impacts of the UoA on the main components (i.e., P1 target species, secondary and ETP species and Habitats) to allow some of the main consequences for the ecosystem to be inferred – SG 80 is met.*

*As detailed in report section 2.4.5, adequate information is also available on the impacts of the UoA on key ecosystem elements (i.e. phytoplankton, micro and mesozooplankton, suprabenthos (amphipods, cumaceans, isopods), benthic invertebrates (echinodermata, mollusca, crustacea), anchovy and dolphins (Coll et al., 2007)) to allow the main consequences for the ecosystem to be inferred – SG 100 is met.*

	Monitoring			
<b>e</b>	Guide post		Adequate data continue to be collected to detect any increase in risk level.	Information is adequate to support the development of strategies to manage ecosystem impacts.
	Met?		<b>Yes</b>	<b>Yes</b>

#### Rationale

*Monitoring data which would allow to detect any increase in risk level comes from a number of sources:*

- *The fisheries Data Collection Framework (DCF) implemented by European Member States / the Data Collection Reference Framework (DCRF) implemented through the GFCM: Data on fishing effort, catches and discards are routinely collected for the UoA. Fisheries independent data is collected through the scientific surveys MEDITS (Mediterranean International Trawl Survey), MEDIAS (Mediterranean International Acoustic Survey) and SOLEMON (survey for the study of flatfish stocks in the central and northern Adriatic Sea).*
- *The activity of the UoA is continuously monitored by the relevant authorities, including through the use of satellite-based VMS data.*
- *Monitoring strategies and programmes being implemented by EU Member States as part of obligations arising from the implementation of the Marine Strategy Framework Directive. Member States are obliged to implement the monitoring activities for ongoing assessment and regular updating of environmental targets, including on the maintenance of biological diversity, marine food-webs and sea-floor integrity.*
- *Scientific research activities in the Adriatic Sea is ongoing (see report section 2.4.5 for examples of relevant research projects), and will complement information coming from fisheries and environmental monitoring activities by providing further information on best practices to manage impacts.*



The assessment team thus considers that adequate data continue to be collected to detect any increase in risk level, and that the available information is adequate to support the development of strategies to manage ecosystem impacts – SG 80 and SG 100 are met.

## References

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## Draft scoring range and information gap indicator added at Announcement Comment Draft Report

Draft scoring range	<b>&gt;80</b>
Information gap indicator	<b>Information sufficient to score PI</b>

## Overall Performance Indicator scores added from Client and Peer Review Draft Report

Overall Performance Indicator score	
Condition number (if relevant)	

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## 7.6 Principle 3

### 7.6.1 Principle 3 background

The UoA consists of stock European anchovy shared between EU Member States (Italy, Slovenia and Croatia) and third countries (Montenegro and Albania).

The fishery area of operation is FAO Central Mediterranean Subarea 37.2 - Adriatic Division 37.2.1; Geographical Sub-Area 18 (Southern Adriatic).

The UoA vessels are Italian-registered and so fish under Italian licences, are members of Italian POs and report (via electronic logbooks) to the Italian management authorities.

The main management body for the UoA is therefore the Italian central government, which operates in accordance with its commitments as a Member State of the European Union and as a contracting party of the regional fishery management organisation, the UN FAO's General Fisheries Commission of the Mediterranean and Black Sea (GFCM). How each organisation works to manage the fishery is described in the sections below.

## EUROPEAN UNION

As Italy is an EU Member State, the key legal framework for the management of the UoA is set out at European level by the Common Fisheries Policy (CFP; European Regulation 1380/2013). The CFP provides a framework under which shared stocks in European waters (stocks where the geographic distribution covers more than one European EEZ, or stocks fished outside 12 miles in a given EEZ) are managed on a common European basis.

EU vessels are all bound by the same rules and regulations as defined under the EU Common Fisheries Policy (CFP) (EC reg. 1380/2013). These rules continue to apply to vessels fishing outside EU waters, including outside the EEZs of the Member States in North Adriatic (although the Italian vessels are shown to not operate beyond the Italian EEZ).

The CFP also defines common objectives and requirements that the Italian, Croatian and Slovenian operators in the fishery must adhere to. These are implemented in each Member State; in the case of Italy via presidential decrees.

The objective of the CFP is to ensure that fisheries and aquaculture are ecologically, economically and socially sustainable. It is also concerned with maintaining employment and the sector's economic viability.

Following the 2002 CFP reform, a new system for limiting the fishing capacity of the EU fleet entered into force on 1 January 2003. This system gave more responsibility to the Member States in achieving a better balance between the fishing capacity of their fleets and the available resources. An Italian Ministerial Circular of 07 October 2004 laid down a plan that aims at reducing fishing effort, particularly by encouraging a reduction in fishing vessels operating within 6 nautical miles of the baseline and using trawl nets.

The CFP is reviewed every 10 years and its most recent revision (EU Reg. 1308/2013) sought to make fisheries more sustainable. The new policy came into force in 2014, including commitments to:

- Fish stocks exploited at Maximum sustainable yield (MSY),
- Greater regionalization (through increased roles for Regional Advisory Councils, including the North Sea Advisory Council (North Sea AC),
- An ecosystem approach to fisheries by ensuring fishing capacity is in line with fishing opportunities and moving more stocks under Long Term Management Plans,
- An obligation to land the fish that is caught (discard ban).

The EC's DG Maritime Affairs and Fisheries has recently published its strategic plan 2016-2020<sup>1</sup>, which sets out fisheries management objectives and targets as well as those for marine environmental management.

For Monitoring, Control and Surveillance activities, the EU Member States are required to comply with the agreed control regulations within the CFP framework. Since 2007 these have been co-ordinated at an EU level by the European Fisheries Control Agency (EFCA). Its goal is to coordinate the fisheries inspection and control operational activities of Member States, and provide assistance to the Member States in their application of the CFP.

The CFP includes requirements for fishing vessels longer than 12 metres to report their logbook data, including catch data, electronically and to have an approved satellite-based vessel monitoring system (VMS) on board. Fishing vessels

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<sup>1</sup> [http://ec.europa.eu/atwork/synthesis/amp/doc/mare\\_sp\\_2016-2020\\_en.pdf](http://ec.europa.eu/atwork/synthesis/amp/doc/mare_sp_2016-2020_en.pdf)

longer than 18 metres are also required to have an automatic identification system (AIS) on board. From 1 May 2014, AIS must be on board all vessels over 15 metres in length.

As a European Union Member State, Italy has a responsibility to monitor fishing activities and catches, and to share such information via the Data Collection Framework (DCF), which is consistent with commitments under the GFCM.

The vessels are required to report the location and quantity of species retained on a daily basis via an electronic logbook that is transmitted to control authorities. Skippers must also notify authorities ahead of landing their fish and only into designated ports.

European fisheries management also involves taking decisions based on the best available scientific data. The European Commission receives advice from the STECF and various other scientific organisations. In the event of data gaps, the EU has the means to fund studies and projects in the short, medium, and long term with the aim of rectifying the lack of data.

The Commission and MIPAAFT are the major donors of the ADRIAMED FAO regional project. ADRIAMED aims to promote scientific cooperation among the Adriatic nations. Its goal is to improve the management of fishing activities in conformity with the Code of Conduct for Responsible Fisheries (FAO 1995).

STECF can be consulted for the annual stock assessment results and STECF reports and recommendations are publicly available. The outcomes of the deliberations of the EU Fisheries Commission are also publicly available via their communications and regulations.

### **Management plan under the Mediterranean regulation 1976/2006**

The basic EC regulation for the fishing activity in the Mediterranean Sea is Council Regulation (EC) No 1967/2006 of 21 December 2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94.

The Regulation's aim is to establish an effective management framework, through an appropriate sharing of responsibilities between the Community and the Member States. It also extends to the Mediterranean High Sea the strict protection of certain marine species already afforded by Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, which was previously only applicable to marine waters under Member States' sovereignty.

This regulation introduces for the first time the concept of management plans for Mediterranean fisheries, which was present in the basic CFP regulation since 2002. A reference to those plans can be found in the preamble of the regulation, both at community level and national level:

*"In view of the specific characteristics of many Mediterranean fisheries, which are restricted to certain geographical sub-zones, and taking into account the tradition of applying effort management system at sub-regional level, it is appropriate to provide for the establishment of Community and national management plans, combining in particular effort management with specific technical measures."*

It also introduces a procedure to deal with new fishing protected areas:

*"By Decision 98/392/EC2 the Council has concluded the United Nations Convention on the Law of the Sea, which contains principles and rules relating to the conservation and management of the living resources of the high seas. In accordance with the rules of that Convention, the Community endeavours to coordinate the management and conservation of living aquatic resources with other coastal States."*

Chapter VII of Regulation 1967/2006 includes provisions for Management Plans.

Article 18 refers to Community-level management plans that should be deployed to manage specific Mediterranean fisheries, in particular, in areas totally or partially beyond the territorial waters of Member States. Until now, there have not been any such plans at Community level [the EC's Adriatic small pelagics management plan is at the consultation stage].

Management plans may include measures which go beyond the provisions of this Regulation for the purpose of: increasing the selectivity of fishing gear; reducing discards and limiting the fishing effort. The measures to be included in the management plans had to be proportionate to the objectives, the targets and the expected time frame.

### **Landing obligation**

The European MS exploiting small pelagics in the Adriatic Sea are mainly Italy, Croatia and Slovenia. In such countries the CFP regulation (EU) No 1380/2013 aims to progressively eliminate discards in all Union fisheries through the introduction of a landing obligation. Article 15(6) empowers the Commission to adopt discard plans by means of a delegated act for a period of no more than three years on the basis of joint recommendations developed by Member States in consultation with the relevant Advisory Councils. In accordance with the joint recommendation provided by the

Mediterranean Advisory Council (MEDAC), the discard plan should cover all catches of species which are subject to minimum sizes as defined in Annex III to Regulation (EC) No 1967/2006 caught in small pelagic fisheries using pelagic mid-water trawl and/or purse seines in the Mediterranean Sea (i.e. fisheries for anchovy, sardine, mackerel and horse mackerel) from 1 January 2015.

To avoid disproportionate costs of handling unwanted catches and in accordance with Article 15(5)(c)(ii) of Regulation (EU) No 1380/2013, a *de minimis* exemption from the landing obligation in terms of percentage of the total annual catches of species subject to the landing obligation can be set. The joint recommendations submitted by the concerned Member States support the case for the *de minimis* exemption, due to the increased costs entailed in the management of unwanted catches, both on board (sorting and boxing, storage and conservation) and on land (transport and storage, conservation, marketing and processing or destruction as special waste), compared to the limited and sometimes non-existent economic profit that could be derived from those unwanted catches. The evidence provided by the Member States was reviewed by the Scientific, Technical and Economic Committee for Fisheries (STECF, 2013) which concluded that the joint recommendations contained reasoned arguments related to the increase of costs in handling unwanted catches, supported in some cases with a qualitative assessment of the costs. Therefore EC Regulation (EU) No 1392/2014, 'establishing a discard plan for certain small pelagic species in the Mediterranean Sea' allows in the northern Adriatic Sea for the following to be discarded: "up to 5 % of the total annual catches of species subject to minimum sizes in the small pelagic mid-water trawl and purse seines fisheries set out in point 2 of the Annex".

This amount is above the average levels of discarding and with the *de minimis* derogation in place, there has been very limited impact from the landings obligation to date.

## GENERAL FISHERIES COMMISSION FOR THE MEDITERRANEAN (GFCM)

The fishery advisory body in the Mediterranean is the General Fisheries Commission for the Mediterranean and Black Sea (hereafter GFCM). GFCM is a regional fisheries management organization (RFMO) established under the provisions of Article XIV of the FAO Constitution. The GFCM was established as a Council in 1952 and became a Commission with greater powers in 1997.

The main objective of the GFCM is to promote the development, conservation, rational management and best utilization of living marine resources as well as the sustainable development of aquaculture in the Mediterranean, the Black Sea and connecting waters (GFCM area of application).

The GFCM is currently composed of 23 member countries, including Italy, (and also the European Union) who contribute to its autonomous budget to finance its functioning. Membership is open to Mediterranean coastal States and regional economic organizations as well as to United Nations member States whose vessels engage in fishing in its area of application.

The GFCM implements its policy and activities through its Secretariat, based at its headquarters in Rome, Italy. The Commission holds its regular sessions annually and operates during the intersession by means of its committees:

- Scientific Advisory Committee (SAC),
- Committee on Aquaculture (CAQ),
- Compliance Committee (CoC),
- Committee of Administration and Finance (CAF) and their subsidiary bodies, including the ad hoc Working Group for the Black Sea (WGBS),
- GFCM Bureau steers strategic orientations to the Commission and the Secretariat.

The Commission has the authority to adopt binding recommendations for fisheries conservation and management in its area of application and plays a critical role in fisheries governance in the region. In particular, its measures can relate to the regulation of fishing methods, fishing gear and minimum landing size, the establishment of open and closed fishing seasons and areas, and fishing effort control. GFCM Resolution GFCM/37/2013/2 establishes guidelines on the management of fishing capacity in the GFCM area to be followed by contracting parties. The GFCM is one of the few RFMOs worldwide entitled to adopt spatial management measures that regulate or restrict human activities in the high seas, e.g. by introducing closures or prohibiting the use of certain gears.

In cooperation with other RFMOs, the GFCM coordinates efforts by governments to effectively manage fisheries at the regional level following the FAO Code of Conduct for Responsible Fisheries (CCRF). Moreover, it closely cooperates with other international organizations in matters of mutual interest and it benefits from the support of cooperation projects and programmes at the regional and subregional level in order to enhance scientific cooperation and capacity-building among its members. The GFCM also manages a database of national fisheries legislation of member countries<sup>2</sup>.

<sup>2</sup> <http://nationallegislation.gfcmsecretariat.org/index>

The GFCM has recently amended its legal framework and the Agreement for its establishment with a view to enhancing its efficiency and thus better responding to current and future challenges in the whole region<sup>3</sup>.

The decision-making process can be considered to be well developed through the use of the GFCM – Scientific Advisory Committee (SAC) and its integrated advisory structure comprised of the STECF/MEDAC/European Commission, as well as the different interested parties having the option to participate in the decision-making. Advice to the GFCM can only be given by the SAC with other groups able to advise the SAC, but not the GFCM directly (GFCM Fishery Officer, pers comm.). The outcomes of the technical meetings and scientific councils are considered when taking decisions on fisheries management and made available on the GFCM website. The GFCM decisions and recommendations specific to the North Adriatic small pelagics are discussed in section below.

As with the CFP, National management plans must be consistent with GFCM plans, and can only be more restrictive, not less (as is the intention of the EU's draft Management Plan for small pelagics). The Compliance Committee meets years to assess how the contracting parties have enforced the agreed plans.

Proposed developments for 2016 include an on-board observer programme (as set out in the GFCM mid-term strategy 2016-2020), which will be GFCM-wide complementing the EU's existing observer and reporting activities under the EU's Data Collection Framework.

## ITALIAN MANAGEMENT

The "*Ministero delle politiche agricole alimentari, forestali e del turismo*" (hereafter MIPAAFT) is the Central Government Ministry that is responsible for managing fishing activity in Italy. The "*Direzione generale della pesca marittima e dell'acquacoltura*" (hereafter PEMAC) is part of this ministry and is responsible for carrying out this task.

In Italy no legal or natural persons are allowed to engage in commercial fishing without the preliminary registration in the Fishing Company Register. Crew members are also registered in the Seamen Register and ships are recorded in apposite Vessels Register. This obligatory recording regime came from the Navigation Code, Presidential Decree No. 328/1952 of 1952, Law No. 963/1965 of 1965, and Presidential Decree No. 1639/1968 of 1968.

MIPAAF is the competent authority for Monitoring, Control and Surveillance (hereafter MCS).

In order to register, professional seamen must satisfy the following statutory requirements:

- a) they must show that fishing is their sole or principal source of income; and
- b) they must demonstrate that they have acquired adequate professional knowledge and skills to conduct commercial fishing operations (training course).

Currently this regime is confirmed by the context of the new Legislative Decree 153/2004. The registers are kept by the local offices of the Ministry of Transport (Comando Generale delle Capitanerie di Porto or Coast Guard Authorities) located along the Italian coastline.

The Italian Coast Guard is delegated responsibility by MIPAAFT for fisheries control at sea and on land. It works with the local and national agencies to apply these controls (e.g. with the financial ministry and police to progress prosecutions). On MCS, the Coastguard works with EFCA, Croatian and Slovenian control authorities to implement joint deployment plans such as those for specific fisheries (e.g. Blue Fin Tuna) or more generally (Mediterranean).

It operates the National Fishery Control Centre (Centro Controllo Nazionale Pesca - CCNP); in Rome and 15 regional offices, each with their own assets for aerial, sea and land-based inspections. For fisheries in GSA 18, the Italian Coastguard carries out aerial surveillance, sea-based inspections and port inspections with resources targeted using a risk analysis approach. Statistics on inspections and infringement are not available for the present UoA but only for the whole Italian fleet (see Ecomafie Report 2018 - <https://www.legambiente.it/rapporto-ecomafia/>). However from the interaction with stakeholder during the site visit was clear that the level of inspection is quite high and the number of infringements is relatively low.

In recent years inspectors have remained on board to contribute to the scientific information for the fishery. By inspectors also observing hauls, this has improved the sampling levels in the quantification of discards as per DCF commitments.

The Italian Government regularly convenes the sector to inform them of the resolutions and changes that affect or may affect the fishery, and they work hand in hand to find the best solution. This also means that the Government has first-hand knowledge of the sector's issues and concerns (MIPAAFT officer pers. comm.).

The fisheries sector participates in the Mediterranean Advisory Council (MEDAC<sup>4</sup>). The MEDAC is made up of European and national organizations representing the fisheries sector (including the industrial fleet, small-scale fisheries, the

<sup>3</sup> <http://www.fao.org/gfcm/background/about/en/>

<sup>4</sup> <http://en.med-ac.eu/index.php>

processing sector and trade unions) and other interest groups (such as environmental organizations, consumer groups and sports/recreational fishery associations) which operate in the Mediterranean area in the framework of the CFP.

The role of MEDAC includes the preparation of opinions on fisheries management and socio-economic aspects in support of the fisheries sector in the Mediterranean, to be submitted to the Member States and the European institutions in order to facilitate the achievement of the objectives of the CFP; MEDAC also proposes technical solutions and suggestions, such as joint recommendations (ex. Art. 18 Reg. 1380 / 2013) at the request of the Member States. MEDAC consists of an executive committee and a number of thematic working groups (including Management Plans and GFCM issues) and regional focus groups, (including the Southern Adriatic).

The Italian fishery sector itself is organized within co-operatives, many of which are also Producer Organisations (an EU-recognized marketing body that often also acts as a representative of its members). Federpesca<sup>5</sup> and Federcoopesca<sup>6</sup> are umbrella bodies that represent these numerous sector organisations at a national level and are members of MEDAC.

## CO-OPERATION IN FISHERIES MANAGEMENT

Shared management for key stocks has been developed in recent years. The Adriatic Fishing District was founded by the Ministerial Decrees in 2010 and 2012, in accordance with EC legislation enabling the identification of fishing areas which apply rules of common governance. Cross-border projects are ongoing between Italian districts and Croatian and Slovenian fishing communities targeting shared Northern Adriatic resources.

From 2012 the District activities are coordinated by a Management Committee, composed of three Regional Councillors for Fisheries and Aquaculture and a representative of MIPAAFT. A support committee there is a Technical Working Group, under the supervision of an advisory committee; the first is composed of the three regional managers of fisheries and aquaculture, a MIPAAFT representative and observes of Assopesca Molfetta.

The Fishing District has expertise in several areas, including the definition of annual and multi-annual projects; the preparation of Local Management Plans, co-ordination with coastal Institutions, the application of guidelines and monitoring and review of the Local Management Plans.

## FISHERY-SPECIFIC MANAGEMENT

For the Adriatic small pelagics fishery, GFCM has developed a number of binding recommendations, which together should be considered the Management Plan for the fishery:

- GFCM 37/2013 defined the authorized vessel list, MLS and general HCR;
- GFCM 38/2014 modified the HCR, setting a limit on the number of fishing days;
- GFCM 39/2015 further modified the HCR with additional emergency measures;
- GFCM 40/2016/3 establishing further emergency measures in 2017 and 2018 for small pelagic stocks in the Adriatic Sea (GSA 17 and GSA 18)

In 2014 GFCM Scientific Advisory Committee (SAC) held a meeting on management plans for the small pelagic fishery in the Adriatic Sea. The meeting was attended by 26 fisheries experts from the Adriatic Sea riparian States (Albania, Croatia, Italy, Montenegro and Slovenia) as well as by representatives of the European Union, the Advisory Council for the Mediterranean (MEDAC), the FAO regional projects and the GFCM Secretariat. The outcomes of the meeting were as follows:

- i) the review and assessment of existing management measures at the country level;
- ii) the review and assessment of the draft advice prepared by the Working Group on Stock Assessment of Small Pelagics (WGSASP); and
- iii) the discussion on a roadmap of pending actions before the following meeting of the SAC.

The meeting agreed on the draft advice prepared by the WGSASP relating to the status of stocks and technical aspects of the stock assessment models used. In addition, the meeting formulated advice on technical matters which are to be incorporated in a revision of the assessment of these stocks, due to be conducted in 2015. Finally, the meeting compiled a list of existing management measures at the country level and provided guidance on how to assess the effectiveness of these measures in achieving the objectives outlined in Recommendation GFCM/37/2013/1 before the eighteenth session of the SAC.

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<sup>5</sup> <http://www.federpesca.it>

<sup>6</sup> <http://www.federcoopesca.it>



The GFCM recommendation 39/2015 specified further measures to reduce fishing pressure on the small pelagic stocks:

1. For the year 2016, the Contracting parties and Cooperating non-Contracting parties of the GFCM (hereafter the "CPCs") whose vessels have been fishing small pelagic stocks in GSA 17 shall reduce the fishing effort established under paragraph 27 of Recommendation GFCM/37/2013/1. To this end, by derogation from the provisions of paragraph 27, Part VII, for the year 2016, each fishing vessel targeting anchovy shall not exceed 144 fishing days per year.
2. For the year 2016, in order to protect nursery and spawning areas, the CPCs shall apply spatio-temporal closures of no less than 15 continuous days and up to 30 continuous days for vessels fishing small pelagic stocks in GSA 17 and GSA 18. These closures shall be designated in waters under their jurisdiction and shall take place between 1 April and 31 August.
3. CPCs shall notify to the GFCM Executive Secretary, by 30 November 2015, the closure dates.
4. National control programmes established under paragraph 29 of Recommendation GFCM/37/2013/1 shall be adapted accordingly.

The most recent GFCM recommendation 40/2016/3 established further emergency measures in 2017 and 2018 for small pelagic stocks in the Adriatic Sea (GSA 17 and GSA 18):

- In 2017 and 2018, contracting parties and cooperating non-contracting parties (CPCs) shall not exceed the level of catches for small pelagics exerted in 2014 as reported in accordance with Recommendation GFCM/33/2009/3 on the implementation of the GFCM Task 1 statistical matrix and repealing Resolution GFCM/31/2007/1.
- If this catch limit in 2017 or 2018 is exceeded in any given year, the GFCM shall recommend appropriate management measures.
- Notwithstanding the fishing effort established under paragraph 27 of Recommendation GFCM/37/2013/1 and Recommendation GFCM/38/2014/1, the CPCs shall reduce their fishing effort for the years 2017 and 2018. Fishing vessels targeting small pelagics shall not exceed 180 fishing days per year, with a maximum of 144 fishing days targeting sardine and a maximum of 144 fishing days targeting European anchovy.
- In 2017 and 2018, the CPCs shall apply spatio-temporal closures in view of protecting nursery and spawning areas. Such closures shall cover the entire distribution of small pelagic stocks in the Adriatic Sea, for periods of not less than 15 continuous days and up to 30 continuous days. These closures shall take place during the following period:
  - for sardine, from 1 October –31 March,
  - for European anchovy, from 1 April –30 September.
- In 2017 and 2018, the CPCs shall apply additional closures for vessels over 12m length overall for not less than 6 months. Such closures shall cover at least 30% of the area which has been identified as a nursery area or as an important area for the protection of early age classes of fish (in territorial and inner sea).
- The CPCs shall notify the GFCM Secretariat, not later than 30 November 2016, of the set of closure dates and areas of application.
- The CPCs shall communicate to the GFCM Secretariat, not later than 30 November 2016, the list of all pelagic trawlers (single or pair trawlers) and purse seiners actively fishing for small pelagic stocks in 2014.
- The CPCs shall ensure that the overall fleet capacity of trawlers and purse seiners actively fishing for small pelagic stocks in terms of gross tonnage (GT), engine power (kW) and number of vessels, as recorded both in national and GFCM registers, does not exceed, in 2017 and 2018, the fleet capacity for small pelagics in 2014.
- The previous provision shall not apply to the CPCs with a fleet of less than ten purse seiners and/or pelagic trawlers. Such CPCs may increase their fleet capacity for not more than 50percent in number of vessels and in terms of gross tonnage (GT) and engine power (kW).
- The SAC shall suggest alternative solutions to ensure the availability of the hydroacoustic survey results of the previous year not later than 31 January of a given year.
- A working group on alternative management measures for small pelagic fisheries in the Adriatic Sea shall be established in accordance with this recommendation. The working group shall report back to the SAC before its annual session in 2017.
- The SAC shall assess, in 2017, the relative merits of different management regimes for small pelagic fisheries in the Adriatic Sea. This task shall include an assessment of the biological, economic, social and market impacts.<sup>16</sup>The SAC shall assess in 2017 whether the impact of the measures adopted under this recommendation will enable achievement of the objective of Recommendation GFCM/37/2013/1.
- The SAC shall report back to the GFCM before the annual session of the GFCM in 2017.
- If the SAC concludes, in 2017, that European anchovy and sardine are still overexploited, the Commission may adopt more stringent measures for 2018, based on the scientific advice of the SAC. These measures shall aim at achieving the objective set out in paragraph 1.

- Notwithstanding the national control programmes established under paragraph 29 of Recommendation GFCM/37/2013/1, the CPCs shall ensure that all vessels above 15m length overall actively fishing for small pelagic stocks are equipped with an electronic logbook and vessel monitoring system by the end of 2017.
- In order to facilitate the monitoring of catches, all catches shall be landed, with the exception of those catches which may be discarded in accordance with national legislation.

In parallel with the implementation of the GFCM management plan, the EU has also drafted a management plan. In May 2015 DGMARE launched a public consultation on regulation establishing a multiannual plan for the management of Northern Adriatic Sea small pelagic fisheries. The current initiative is intended to contribute to delivering directly on the achievement of the Common Fisheries Policy, in particular the long term sustainability of the stocks and the implementation of an ecosystem-based approach to fisheries management, through the achievement of the following specific objectives:

- To achieve that fish stocks concerned can produce maximum sustainable yields (MSY) by 2015 where possible, or by 2020 at the latest.
- To ensure high and sustainable yields for the industry, while taking in to account mixed fisheries interactions and the landing obligation.
- To ensure that the relevant stocks are maintained within safe biological limits, and that stocks outside of biological limits are brought within those limits as rapidly as possible.
- To minimize unwanted catches in order to facilitate the implementation of landing obligations introduced in the reformed CFP.
- To establish the framework necessary for the implementation of regionalization in the long-term management of the relevant stocks.

At the begin of 2017, the European Commission tabled a proposal for a multiannual plan covering certain pelagic fisheries (in particular anchovy and sardine) in the Adriatic Sea. Its main elements consist of:

- Managing fisheries for anchovy and sardine stocks, based on defined conservation reference points, namely target fishing mortality ranges (in line with the MSY objective by 2020) to serve for the setting of fishing opportunities and levels of spawning stocks biomass, under which safeguard measures must be taken to reduce fishing mortality.
- Setting provisions for regional cooperation between Member States and delegating powers to the Commission to adopt any joint recommendation by concerned Member States for fisheries technical measures, for the conservation of anchovy and sardine when spawning stocks is too low as well as for the conservation of mackerel and horse mackerel when remedial action is required.
- Further delegating powers to the Commission to adopt exemptions or some other provisions related to the landing obligation for these four small pelagic species, when recommended jointly at regional level by the Member States concerned.
- Setting some additional measures to reinforce control: these include specific requirements concerning landings (prior arrival notification and use of designated ports), but also extending the requirements for vessel monitoring system (VMS) and electronic registration and reporting of catches (electronic logbooks) to all fishing vessels over eight metres in length (under the general control regulation, these measures only apply to fishing vessels as from 12 metres long).
- Providing for regular five-yearly evaluations of this multiannual plan.

This multiannual plan was the first to be proposed in the Mediterranean area. The introduction of a permanent system of fishing opportunities for small pelagic stocks in the Adriatic (through the setting of total allowable catches and quotas) that should derive from this plan, would represent an important shift in the way most fisheries have been traditionally managed in this area until now.

The Commission made a first presentation of its proposal to the Fisheries Council on 6 March 2017. According to a very general description of the outcome of the Ministers' discussion in the corresponding Council Press release, the proposal was generally welcomed by the delegations, though some expressed concerns, notably about the potential socio-economic impact of the plan and disproportionate control measures. As reported in more details in the press however, the three Member States concerned by the plan (Croatia, Italy and Slovenia) were rather critical and they notably expressed their opposition to managing small pelagic stocks in the Adriatic through a system of total allowable catches. They were also supported in this position by Spain, mainly in consideration of possible future multiannual plans to cover other stocks/areas in the Mediterranean.

The Committee on Fisheries (PECH) has considered the proposal on the basis of the draft report put forward by the rapporteur Ruža TOMAŠIĆ (ECR, Croatia) on 26 October 2017. A public hearing of the PECH committee on this multiannual plan took place on 25 January 2018. The PECH committee adopted its report on the plan on 9 October 2018, by 14 votes to 11, with 1 abstention. The Committee on the Environment, Public Health and Food Safety (ENVI) also contributed a position in the form of amendments. The report makes several significant modifications to the proposal. In particular, it supports maintaining the current regime based on management of fishing effort, and opposes introduction of TACs. The report also requires using reference points based on stock biomass, instead of target fishing mortality ranges. In addition, catch limits for small pelagics in 2019 must be set at the level of the 2014 catches, and reduced by 4 % annually between 2020 and 2022. The report supports taking into account the social and economic impact, which it defines as an explicit objective of the plan, in particular by making extensive use of financial support from the European Maritime and Fisheries Fund (EMFF). In this respect, the report introduces specific requirements, as well as derogations from the EMFF Regulation 508/2014, e.g. for increasing the financial contribution above the current threshold for temporary cessation of fishing activities, as well as the maximum duration of support for such cases, and extending the deadline of eligibility for support in case of permanent cessation. Finally, the Commission is required to evaluate the effectiveness of the measures introduced by the plan three years after their application, and if appropriate, amend the plan. Parliament's plenary approved the PECH report on 13 November 2018, by 342 votes to 295 and 24 abstentions. The Council is now awaited to establish its first-reading position on the future plan.

All the reports, regulations, and recommendations on this fishery are analysed and discussed in the STECF plenary as well as GFCM statutory meetings; all interested parties thus have access to the majority of the available data.

### REFERENCES PRINCIPLE 3

FAO. 2016. Report of the thirty-ninth session of the General Fisheries Commission for the Mediterranean (GFCM), Milan, Italy, 25-29 May 2015. GFCM Report No. 39. Rome, Italy.

GFCM (2013) Recommendation GFCM/37/2013/1 on a multiannual management plan for fisheries on small pelagic stocks in the GFCM-GSA 17 (Northern Adriatic Sea) and on transitional conservation measures for fisheries on small pelagic stocks in GSA 18 (Southern Adriatic Sea)

GFCM (2014) Recommendation GFCM/38/2014/1 amending Recommendation GFCM/37/2013/1 and on precautionary and emergency measures for 2015 on small pelagic stocks in the GFCM GSA 17

GFCM (2015) Recommendation GFCM/39/2015/1 establishing further precautionary and emergency measures in 2016 for small pelagic stocks in the Adriatic Sea (GSA 17 and GSA 18)

GFCM (2017a). Report of the Workshop on the assessment of management measures (WKMSE). FAO headquarters, Rome, Italy, 20–23 February 2017. 87 p.

EP Legislative Observatory, Procedure file on a proposal for a Regulation on a multi-annual plan for small pelagic stocks in the Adriatic Sea and the fisheries exploiting those stocks, 2017/0043 (COD)

European Commission, Proposal for a regulation of the European Parliament and of the Council establishing a multi-annual plan for small pelagic stocks in the Adriatic Sea and the fisheries exploiting those stocks, COM(2017) 97

European Parliament, Committee on Fisheries, Draft report on the proposal for a regulation of the European Parliament and of the Council establishing a multi-annual plan for small pelagic stocks in the Adriatic Sea and the fisheries exploiting those stocks

European Parliament, Legislative resolution on the proposal for a regulation of the European Parliament and of the Council establishing a multi-annual plan for small pelagic stocks in the Adriatic Sea and the fisheries exploiting those stocks

## 7.6.2 Principle 3 Performance Indicator scores and rationales

### PI 3.1.1 – Legal and/or customary framework

PI 3.1.1	The management system exists within an appropriate legal and/or customary framework which ensures that it:			
	<ul style="list-style-type: none"> <li>- Is capable of delivering sustainability in the UoA(s);</li> <li>- Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and</li> <li>- Incorporates an appropriate dispute resolution framework</li> </ul>			
Scoring Issue	SG 60	SG 80	SG 100	
<b>a</b>	Compatibility of laws or standards with effective management			
	Guide post	There is an effective national legal system <b>and a framework for cooperation</b> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2	There is an effective national legal system and <b>organised and effective cooperation</b> with other parties, where necessary, to deliver management outcomes consistent with MSC Principles 1 and 2.	There is an effective national legal system and <b>binding procedures governing cooperation with other parties</b> which delivers management outcomes consistent with MSC Principles 1 and 2.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

#### Rationale

Italy has an effective national legal system and binding procedures listed within comprehensive suite of fisheries legislation that is updated to implement commitments under the EU's CFP and the under the GFCM.

A summary of this legislation is available at:

<http://nationallegislation.gfcmsecretariat.org/index.php?title=Italy>

As the UoA includes shared stocks that are subject to international cooperation for management, at the SG100 level for scoring issue (a), the following is required:

- a. The existence of national laws, agreements and policies governing the actions of the authorities and actors involved in managing the UoA,
- b. That binding legislation exists governing comprehensive international cooperation under the obligations of UNCLOS Articles 63(2), 64, 118, 119, and UNFSA Articles 8 and 10, and
- c. That cooperation under the RFMO/arrangement, and the actions of the RFMO, shall demonstrably and effectively deliver UNFSA Article 10.

**In relation to a:** Membership of the EU requires co-operation with other parties to deliver such management outcomes under the Common Fisheries Policy.

**In relation to b:** Membership of the GFCM also has binding procedures governing co-operation with other parties. General Agreement on Establishment of the GFCM: *“Further recognizing that, under international law, States are required to cooperate in the conservation and management of living marine resources and the protection of their ecosystems”*

**In relation to c:** General Agreement on Establishment of the GFCM: Further recalling the Agreement for the Implementation of the Provisions of the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks of 4 December 1995, the Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas of 24 November 1993, as well as other relevant international instruments concerning the conservation and management of living marine resources, SG 100 is therefore met.

<b>b</b>	Resolution of disputes			
	Guide post	The management system incorporates or is subject by law to a <b>mechanism</b> for the resolution of legal disputes arising within the system.	The management system incorporates or is subject by law to a <b>transparent mechanism</b> for the resolution of legal disputes which is <b>considered to be effective</b>	The management system incorporates or is subject by law to a <b>transparent mechanism</b> for the resolution of legal disputes that is appropriate to the context of

			in dealing with most issues and that is appropriate to the context of the UoA.	the fishery and has been <b>tested and proven to be effective</b> .
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				

The Italian legal system provides recourse for the resolution of disputes resulting from the management system. This can be applied at a local and national level.

An amendment of the GFCM Agreement was launched in 2013 following a performance review finalised in 2011, which concluded that the Agreement should be amended to clarify the objectives and functions of the GFCM, and strengthen its efficiency. This included the establishment of a well-defined dispute settlement mechanism in case disputes arise between Contracting Parties.

Article 19: Settlement of disputes on the interpretation and application of the Agreement

1. In the event of a dispute between two or more of Contracting Parties concerning the interpretation or application of this Agreement, the Parties concerned shall consult among each other with a view to seeking solutions by negotiation, mediation, inquiry or any other peaceful means of their own choice.

2. If the parties concerned cannot reach agreement in accordance with paragraph 19.1, they may jointly refer the matter to a committee composed of one representative appointed by each of the party of the dispute, and in addition the Chairperson of the Commission. The findings by such committee, while not binding in character, shall constitute the basis for renewed consideration by the Contracting Parties concerned of the matter out of which disagreement arose.

3. Any dispute concerning the interpretation or application of this Agreement not resolved under paragraphs 19.1 and 19.2 may, with the consent in each case of all parties to the dispute, be referred for settlement to arbitration. The results of the arbitration procedure shall be binding upon the parties.

4. In cases where the dispute is referred to arbitration, the arbitral tribunal shall be constituted as provided in the Annex to this Agreement. The Annex forms an integral part of this Agreement.

The Contracting Parties to the GFCM endorsed the "Amended Agreement for the establishment of the General Fisheries Commission for the Mediterranean" at the GFCM 38 Annual Session on 19-24 May 2014.

This meets SG80 requirements, but to date there is no evidence of this dispute resolution system being tested and proven to be effective. So SG100 not met.

	<b>Respect for rights</b>			
<b>C</b>	Guide post	The management system has a mechanism to <b>generally respect</b> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to <b>observe</b> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to <b>formally commit</b> to the legal rights created explicitly or established by custom of people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				

The Italian management system is required to observe, but does not formally commit to, the rights of those dependent on fisheries.

The team shall interpret "formally commit" in scoring issue (c) at SG100 to mean that the UoA involved in the fishery can demonstrate a mandated legal basis where rights are fully codified within the fishery management system and/or its policies and procedures for managing fisheries under a legal framework. Such evidence has not been provided and therefore SG100 is not met.

## References

GFCM general agreement

Common Fisheries Policy Regulation (EU) no. 1380/2013 (the "Basic Regulation")

Italian general fisheries laws:

D.P.R. 2 October 1968, n. 1639 - Executive Regulation of the L. 963/1965.

L 41/1982 - Plane for rationalization and develop of maritime fishery (repealed).

D.Lgs. 153/2004 - Application of L. 38/2003 on maritime fisheries.  
D.Lgs. 154/2004 - Fisheries and aquaculture modernization.

### Overall Performance Indicator (PI) Rationale

Considering the rationales reported for the SI a, b and c the overall performance should be 85.

Draft scoring range	<b>≥80</b>
Information gap indicator	<b>Information sufficient to score PI</b>

## PI 3.1.2 – Consultation, roles and responsibilities

PI 3.1.2		The management system has effective consultation processes that are open to interested and affected parties The roles and responsibilities of organisations and individuals who are involved in the management process are clear and understood by all relevant parties		
Scoring Issue		SG 60	SG 80	SG 100
a	Roles and responsibilities			
	Guide post	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>generally understood</b> .	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>explicitly defined and well understood for key areas</b> of responsibility and interaction.	Organisations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <b>explicitly defined and well understood for all areas</b> of responsibility and interaction.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				

Section 7.6.1 describes the various management, industry and scientific organisations involved in fisheries management. GFCM co-ordinates regional management and scientific data collection to inform fishery management. The EC through the CFP sets framework for fisheries management, which is then implemented by the Italian ministry (implements the CFP and GFCM binding recommendations).

MEDAC is a multi-stakeholder group that feeds advise into these complementary processes. Federpesca and Federcoopesca are industry bodies representing the Italian catching sector as members of MEDAC.

The functions and relationships between these management, industry and advisory groups are well defined and understood by participants for all areas of responsibility (SG100 is met).

		Consultation processes		
b	Guide post	The management system includes consultation processes that <b>obtain relevant information</b> from the main affected parties, including local knowledge, to inform the management system.	The management system includes consultation processes that <b>regularly seek and accept</b> relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.	The management system includes consultation processes that <b>regularly seek and accept</b> relevant information, including local knowledge. The management system demonstrates consideration of the information and <b>explains how it is used or not used</b> .
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
Rationale				

MEDAC is the main regular consultation process that enables local knowledge from the sector to be considered in development of the management system. However, it is not always explained by the EC how that information is used or not used. Industry stakeholders suggest this is also the case at a national level with Ministry consultation exercises, which are ad hoc exercises associated with the development of new policies prior to the drafting of regulation. However, this is not enough to consider that the management system considers always the information and explains how it is used or not use. Therefore, SG 100 is not met.

		Participation	
c	Guide post	The consultation process <b>provides opportunity</b> for all interested and affected parties to be involved.	The consultation process provides <b>opportunity and encouragement</b> for all interested and affected

				parties to be involved, and <b>facilitates</b> their effective engagement.
	Met?		<b>Yes</b>	<b>Yes</b>

#### Rationale

The reform of the CFP with a greater emphasis on regionalization and sea basin-level management (enhancing the role of the MEDAC), along with the development of the Better Regulation Guidelines ensures more effective consultation and is a recent improvement in performance that meets SG100.

The drafting of the EC management plan for Small Pelagics in the Adriatic is an example of the transparency of the EC consultation processes providing the opportunity for all parties to be involved.

#### References

Common Fisheries Policy Regulation (EU) no. 1380/2013 (the “Basic Regulation”)

Consultation on North Adriatic Small Pelagic Multi-annual Plan

[http://ec.europa.eu/dgs/maritimeaffairs\\_fisheries/consultations/northern-adriatic-multiannual/index\\_en.htm](http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/northern-adriatic-multiannual/index_en.htm)

EC Better Regulation Guidelines

#### Overall Performance Indicator (PI) Rationale

Considering the rationales reported for the SI a, b and c the overall performance should be 95.

Draft scoring range	<b>≥80</b>
Information gap indicator	<b>Information sufficient to score PI</b>



### PI 3.1.3 – Long term objectives

PI 3.1.3		The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Fisheries Standard, and incorporates the precautionary approach		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Objectives			
	Guide post	Long-term objectives to guide decision-making, consistent with the MSC Fisheries Standard and the precautionary approach, are <b>implicit</b> within management policy.	<b>Clear</b> long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach are <b>explicit</b> within management policy.	<b>Clear</b> long-term objectives that guide decision-making, consistent with MSC Fisheries Standard and the precautionary approach, are <b>explicit</b> within <b>and required by</b> management policy.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				

CFP and GFCM have clear long-term objectives that explicitly require the precautionary approach to be followed. The CFP contains clear long-term objectives that guide decision-making and are consistent with MSC principles. These are presented in section 7.6.1 of the report.

The CFP is explicit in requiring the precautionary approach to guide all management policy, including the national management of vessels in the UoA.

GFCM General Agreement Article 5:

In giving effect to the objective of this Agreement, the Commission shall:

c) apply the precautionary approach in accordance with the 1995 Agreement and the Code of Conduct for Responsible Fisheries. Therefore SG 100 is met.

#### References

GFCM General Agreement

Common Fisheries Policy Regulation (EU) no. 1380/2013 (the “Basic Regulation”)

#### Overall Performance Indicator (PI) Rationale

See previous rationale.

Draft scoring range	<b>≥80</b>
Information gap indicator	<b>Information sufficient to score PI</b>

## PI 3.2.1 – Fishery-specific objectives

PI 3.2.1		The fishery-specific management system has clear, specific objectives designed to achieve the outcomes expressed by MSC's Principles 1 and 2		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>Objectives</b>			
	<b>Guide post</b>	<b>Objectives</b> , which are broadly consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <b>implicit</b> within the fishery-specific management system.	<b>Short and long-term objectives</b> , which are consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <b>explicit</b> within the fishery-specific management system.	<b>Well defined and measurable short and long-term objectives</b> , which are demonstrably consistent with achieving the outcomes expressed by MSC's Principles 1 and 2, are <b>explicit</b> within the fishery-specific management system.
	<b>Met?</b>	<b>Yes</b>	<b>Partial</b>	<b>Partial</b>

### Rationale

Well-defined and measurable long term objectives are defined in GFRM Rec 37/2013:

A multi-annual management plan for the fisheries exploiting the small pelagic stocks in GFCM-GSA 17-18 must be developed and be coherent with the precautionary approach and designed to provide high long-term yields consistent with the maximum sustainable yield and to guarantee a low risk of stocks collapse while maintaining sustainable and relatively stable fisheries.

Specific objectives of the multiannual management plan for small pelagic fishery in the Adriatic Sea are outlined by the EU.

Well-defined and measurable short term objectives are also defined in GFCM Rec 40/2016/3.

The GFCM recommendations forming the fishery-specific management plan are required to comply with the wider GFCM recommendations concerning P2 aspects (SG60 is met). However these are only implicit in the management plan and explicit objectives solely focus on the two target species and such well-defined and measurable objectives do not extend to MSC P2 aspects.

SG80 is met for P1 aspects, but not for P2 and SG80 is therefore only partially met.

### References

GFCM Recommendation GFCM/37/2013/1 on a multiannual management plan for fisheries on small pelagic stocks in the GFCM GSA 17 (northern Adriatic Sea) and on transitional conservation measures for fisheries on small pelagic stocks in GSA 18 (southern Adriatic Sea);

GFCM Recommendation GFCM/38/2014/1 amending Recommendation GFCM/37/2013/1 and on precautionary and emergency measures for 2015 on small pelagic stocks in the GFCM GSA 17;

GFCM Recommendation GFCM/39/2015/1 establishing further precautionary and emergency measures in 2016 for small pelagic stocks in the Adriatic Sea (GSA 17 and GSA 18)

FCM Recommendation GFCM/40/2016/3 establishing further precautionary and emergency measures in 2017 and 2018 for small pelagic stocks in the Adriatic Sea (GSA 17 and GSA 18)

### Overall Performance Indicator (PI) Rationale

According to the rationale explained above the PI should score less than 80 and a condition should be considered here.

Draft scoring range	<b>60-79</b>
Information gap indicator	<b>Information sufficient to score PI</b>

## PI 3.2.2 – Decision-making processes

PI 3.2.2		The fishery-specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives, and has an appropriate approach to actual disputes in the fishery		
Scoring Issue		SG 60	SG 80	SG 100
a	Decision-making processes			
	Guide post	There are <b>some</b> decision-making processes in place that result in measures and strategies to achieve the fishery-specific objectives.	There are <b>established</b> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.	
	Met?	<b>Yes</b>	<b>Yes</b>	
Rationale				

The GFCM develops binding recommendations that are required to be implemented by the GFCM contracting parties. Those recommendations are drafted based on advice from the Scientific Advisory Council (SAC), which is the only body able to provide advice directly to the GFCM. Submissions from other parties (e.g. European Union) can also be taken into account.

The GFCM checks compliance by those parties required to implement the binding recommendations and reports on the extent to which this has been achieved. This is the case with the GFCM recommendations that form the Adriatic small pelagics management plan.

		Responsiveness of decision-making processes		
b	Guide post	Decision-making processes respond to <b>serious issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take some account of the wider implications of decisions.	Decision-making processes respond to <b>serious and other important issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.	Decision-making processes respond to <b>all issues</b> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.
	Met?	<b>Yes</b>	<b>No</b>	<b>No</b>
Rationale				

It is evident that to date GFCM amendments have occurred annually in order to respond to serious issues in the fishery (SG60 is met), but there is no evidence that all issues (such as the ecosystem significance of the target species) into account. Indeed, the recent GFCM recommendation does not show the necessary response as recommended by the SAC via the scenario modelling work conducted and therefore SG80 is not met.

		Use of precautionary approach		
c	Guide post	Decision-making processes use the precautionary approach and are based on best available information.		
	Met?		<b>Yes</b>	
Rationale				

The precautionary approach is used within the advice received from the SAC. For example, GFCM Rec 37/2013:

12. SAC shall provide on annual basis as from 2014 advice on the status of the small pelagic stocks (sardine, anchovy) in GSA 17-18.

Accountability and transparency of management system and decision-making process				
<b>d</b>	Guide post	Some information on the fishery's performance and management action is generally available on request to stakeholders.	<b>Information on the fishery's performance and management action is available on request</b> , and explanations are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.	Formal reporting to all interested stakeholders <b>provides comprehensive information on the fishery's performance and management actions</b> and describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				

The SAC and General Council reports are published on the GFCM website. Work to date, such as the management strategy review (GFCM, 2017a) and compliance reports, are examples of comprehensive information on fishery performance and management actions that are readily available.

Approach to disputes				
<b>e</b>	Guide post	Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	The management system or fishery is attempting to comply in a timely fashion with judicial decisions arising from any legal challenges.	The management system or fishery acts proactively to avoid legal disputes or rapidly implements judicial decisions arising from legal challenges.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				

In working through the SAC and General Council, along with the establishment of specific working groups that involve all contracting parties, the GFCM is proactively attempting to avoid legal disputes through the agreement of advice and resulting decisions.

### References

GFCM (2017a). Report of the Workshop on the assessment of management measures (WKMSE). FAO headquarters, Rome, Italy, 20–23 February 2017. 87 p.

### Overall Performance Indicator (PI) Rationale

According to the rationales reported above the PI should score less than 80 and a condition should be considered here.

Draft scoring range	<b>60-79</b>
Information gap indicator	<b>Information sufficient to score PI</b>



### PI 3.2.3 – Compliance and enforcement

PI 3.2.3		Monitoring, control and surveillance mechanisms ensure the management measures in the fishery are enforced and complied with		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	<b>MCS implementation</b>			
	Guide post	Monitoring, control and surveillance <b>mechanisms</b> exist, and are implemented in the fishery and there is a reasonable expectation that they are effective.	A monitoring, control and surveillance <b>system</b> has been implemented in the fishery and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.	A <b>comprehensive</b> monitoring, control and surveillance system has been implemented in the fishery and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				

MCS in the Adriatic is a combination of technical measures such as the requirement for Vessel Monitoring Systems (VMS) on vessels over 12m (all UoA vessels) and e-logbooks. This is supported by at sea inspection, aerial surveillance and port inspection. There is also corroboration of logbook data with sales notes.

Control authorities have a reasonable expectation and confidence that MCS measures are effective. The resources available to and used by those authorities have demonstrated an ability to enforce the regulations applying to the fishery. The Italian Coastguard manages monitoring control and surveillance of Italian vessels along with joint operations with the Croatian control authority.

This is supported by the European Fisheries Control Authority (EFCA) under its Mediterranean Joint Deployment Plan (JDP). The JDP was adopted in May 2014 and has the active participation of Croatia, Cyprus, France, Greece, Italy, Malta, Portugal, Slovenia and Spain. Joint control and inspection activities conducted under the JDP are exhaustive and based on a risk assessment approach. They cover fishing and fishing-related activities including farming, weighing, processing, marketing, transport and storage of fisheries products and sport and recreational fisheries.

The JDP is implemented based on the decisions of the Mediterranean steering group which supervises its overall strategy and orientation. Day-to-day operational activities are implemented through a technical joint deployment group and coordination centres in the Member States concerned (EFCA, 2014).

Relevant statistics on sanctions and inspections are not available for the UoA but only for the whole Italian fleets on “*Ecomafie*” report 2018 (<https://www.legambiente.it/rapporto-ecomafia>).

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

Sanctions are reported to be consistently applied and are thought to provide effective deterrence. However, this has not been clearly demonstrated and SG100 is not met.

		<b>Compliance</b>		
<b>c</b>	Guide post	Fishers are <b>generally thought</b> to comply with the management system for the fishery under assessment, including, when required,	<b>Some evidence exists</b> to demonstrate fishers comply with the management system under assessment, including, when required, providing	There is a <b>high degree of confidence</b> that fishers comply with the management system under assessment, including, providing

		providing information of importance to the effective management of the fishery.	information of importance to the effective management of the fishery.	information of importance to the effective management of the fishery.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Rationale</b>				

The statistics on inspection and infringements are not directly available for the present UoA. However, during site visit was evidenced that fishers comply with the management system, but there is not an high degree of confidence about this conclusion. Therefore SG 100 is not met.

<b>Systematic non-compliance</b>				
<b>d</b>	Guide post		There is no evidence of systematic non-compliance.	
	Met?		<b>Yes</b>	
<b>Rationale</b>				

Some stakeholders during the site visit did report non-compliance (i.e. fishing within 6 nautical miles), but this was recognized as an occasional occurrence and not indicative of systematic non-compliance

**References**

EFCA Mediterranean Deployment Plan 2014 <http://www.efca.europa.eu/en/content/mediterranean-reports-2014>.

**Overall Performance Indicator (PI) Rationale**

According to the rationales reported above the PI should score above 80.

Draft scoring range	<b>≥80</b>
Information gap indicator	<b>More information sought:</b> Avaialbility of statistics related to the UoA about penalties and non-compliance

## PI 3.2.4 – Monitoring and management performance evaluation

PI 3.2.4		There is a system of monitoring and evaluating the performance of the fishery-specific management system against its objectives There is effective and timely review of the fishery-specific management system		
Scoring Issue		SG 60	SG 80	SG 100
<b>a</b>	Evaluation coverage			
	Guide post	There are mechanisms in place to evaluate <b>some</b> parts of the fishery-specific management system.	There are mechanisms in place to evaluate <b>key</b> parts of the fishery-specific management system.	There are mechanisms in place to evaluate <b>all</b> parts of the fishery-specific management system.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>No</b>
Rationale				

The scenario modelling undertaken shows that key parts of the management system such as the HCR are evaluated by the SAC (GFCM, 2017a). The annual reviews of the management plan to date show the broader evaluation of the management plan is regularly undertaken. Performance of contracting parties is also evaluated by the GFCM. However, a mechanism to evaluate all parts of the management system is not evident and SG100 is not met

		Internal and/or external review		
<b>b</b>	Guide post	The fishery-specific management system is subject to <b>occasional internal</b> review.	The fishery-specific management system is subject to <b>regular internal</b> and <b>occasional external</b> review.	The fishery-specific management system is subject to <b>regular internal and external</b> review.
	Met?	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
Rationale				

External review can be considered to result from the scrutiny applied by the EC as a GFCM contracting party, along with the opportunity for other parties and the multi-stakeholder group, MEDAC, to review and comment. This exemplifies the regular internal and external review that the small pelagics plan is subject to and so SG100 is met.

### References

GFCM (2017a). Report of the Workshop on the assessment of management measures (WKMSE). FAO headquarters, Rome, Italy, 20–23 February 2017. 87 p.

### Overall Performance Indicator (PI) Rationale

According to the rationales reported above the PI should score above 80.

Draft scoring range	<b>≥80</b>
Information gap indicator	<b>Information sufficient to score PI</b>



## **8 Appendices**

### **8.1 Assessment information**

#### **8.1.1 Small-scale fisheries**

Taking into account the information gathered during the site visit is not possible to conclude that the UoA can be defined as small-scale fishery.

## **8.2 Evaluation processes and techniques**

### **8.2.1 Site visits**

The following site visit were and engagement with stakeholder were carried out:

- 23/05/2019 – Engagement with stakeholder of MIPAAFT and GFCM
- 04/06/2019 – Site visit in Molfetta in Assopesca.
- 05/06/2019 – Site visit in CNR-IRBIM – discussion about assessment and data collection
- 07/06/2019 – Site visit at MEDAC headquarter Rome.

### **8.2.2 Recommendations for stakeholder participation in full assessment**

The following stakeholder should be involved in the full assessment:

- MIPAAFT.
- GFCM.
- MEDAC.
- NGOs (Oceanan, WWF, GreenPeace, MedReact, etc.).
- COISPA scientists.
- CNR-IRBIM scientists.

### **8.3 Harmonised fishery assessments – delete if not applicable**

No other certified fisheries are present in the area.

## 9 Corporate branding

This template may be formatted to comply with the Conformity Assessment Body (CAB) corporate identity. The CAB shall ensure that content and structure follow the template.

Examples of appropriate amendments are:

- a. A title page with the company logo;
- b. A company header and footer used throughout the report;
- c. Replacement of font styles;
- d. Inclusion of contact details for the CAB in relation to consultation
- e. Deletion of any sections that are not applicable, though CABs should leave any sections that will be populated later in the assessment; and,

Deletion of introductory text or instructions.

## 10 Template information and copyright

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Template version control		
Version	Date of publication	Description of amendment
1.0	15 August 2011	Date of first release
1.1	31 October 2013	Updated in line with changes to CR v1.3
2.0	08 October 2014	Confirmed background sections (Section 3) as optional (use of 'may' statements) Modified Table 6.3 to create a simplified scoring sheet to be completed in place of full evaluation tables Made amendments to PIs based on Fishery Standard Review changes (e.g. removed original PIs 1.1.2, 3.1.4 and 3.2.4).
2.1	9 October 2017	Inclusion of optional full evaluation tables
3.0	17 December 2018	Release alongside Fisheries Certification Process v2.1
3.1	29 March 2019	Minor document changes for usability

A controlled document list of MSC program documents is available on the MSC website ([msc.org](http://msc.org))

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