United Nations Environment Programme

MEDITERRANEAN ACTION PLAN

Integrated Correspondence Groups of GES and Targets Meeting

Athens (Greece), 17-19 February 2014

GFCM Information Note on EO3

UNEP/MAP
Athens, 2014

GFCM draft proposal for GES determination and GES targets with regard to Ecological Objective 3 (Harvest of commercially exploited fish and shellfish)

Ecological Objective 3: Populations of selected commercially exploited fish and shellfish are within biologically safe limits, exhibiting a population age and size distribution that is indicative of a healthy stock

1.1 Operational Objectives and Indicators

Operational objective	Indicator	Proposed GES Description	Proposed Targets	Similar indicators from other policies	Suggestions for development	Baselines and thresholds
3.1 Level of exploitation by commercial fisheries is within biologically safe limits	3.1.1 Total catch	Total catch does not exceed the Maximum Sustainable Yield (MSY). *Description: The total catch is the quantity of fish which is retained by the fishing gear during fishing operations. This should ideally include landings by commercial fleet, recreational fishing, by catch and IUU estimates.*	State -Long-Term High Yields -MSY Pressure -Reduction of IUU catch -Minimization of discarding and by-catch	-CFP-EC -MSFD		Baseline is not necessary. Threshold is formulated in GES.
	3.1.2 Fishing mortality	Fishing mortality in the stock does not exceed the level that allows MSY ($F \leq F_{MSY}$). *Description: The Maximum Sustainable Yield is, theoretically, the maximum yield that can be obtained from a species, and it is associated with a maximum fishing mortality (F_{MSY}). When F is higher than F_{MSY} the yield decreases. F_{MSY} is*	Pressure -F_{MSY} -$F_{0.1}$ a proxy of F_{MSY} (precautionary)	-CFP-EC -MSFD		Baseline is not necessary. Threshold is formulated in GES.

Operational objective	Indicator	Proposed GES Description	Proposed Targets	Similar indicators from other policies	Suggestions for development	Baselines and thresholds
		consider as a limit due to the consequences of overestimating F. Only available if the stock has been assessed. Fishing mortality (F) reflects all deaths in the stock that are due to fishing per year (not only what is actually landed). It is usually expressed as a rate ranging from 0 (for no fishing) to high values (1.0 or more). It is common practice to refer F as a scalar value but it would be more appropriate to refer to it as a vector.				
	3.1.3 Biomass indices	Stable or increasing biomass indices (relative or absolute), with absolute value at or above biomass that produces maximum sustainable yield. *Description: Biomass indices can be calculated when scientific surveys (trawling, acoustics, etc.) are available. Different targets can be used, such as acceptable stock size, safe biological limits, historical level of CPEU (Catch per unit of effort), Trend of CPEU increasing per year, Historical level of standardized index of abundance form scientific surveys. In the Mediterranean Sea, regional data is not available for many species.*	State -Stable or positive trend -Biomass at MSY (Bmsy) (when MSY available)	-CFP-EC -MSFD	Note that a reference point for small pelagic fish exists: 1/3 biomass in the ecosystem for predators (Cury et al. 2012. Science) or $0.3B_0$.	Data is needed for definition of reference conditions in the past, which is the baseline. Threshold needs to be defined based on the acceptable deviation from reference conditions.
	3.1.4 Ratio	The catch/biomass ratio allows to	Pressure	-CFP-EC		Baseline is

Operational objective	Indicator	Proposed GES Description	Proposed Targets	Similar indicators from other policies	Suggestions for development	Baselines and thresholds
	between catch and biomass index (hereinafter catch/biomass ratio).	recover the stock or to maintain it at a level where it can produce the Maximum Sustainable Yield (MSY) *Description: The Catch/Biomass ratio should entail a low risk of collapse of the species, and a high probability of recovery of the stock. If the species is at risk, it should entail a low time frame of recovery.*	-Stable or positive trend	-MSFD		not necessary. Threshold needs to be defined based on the acceptable deviation from reference conditions.
	3.1.5 Length distribution of the population in the catch	The length distribution of the population in the catch is maintained or increases. *Description: The mean body size in the catch (Lt) has to be higher than the minimum conservation size: Lt > Lm, being Lm = minimum conservation size (for example, to protect juveniles with minimum sizes). The length distribution of the population in the catch will be available only for those target species with monitoring programs dedicated to collect length distribution data.*	State -Stable or increasing in size -Lt > Lm	-CFP-EC -MSFD		Baseline is not necessary. Threshold needs to be defined based on the acceptable deviation from reference conditions.
	3.1.6. Spatial distribution of the population	The spatial distribution of the population is maintained or increases. *Description: It is important to know the spatial distribution of species: Species*	State -Stable or positive trend	-CFP-EC -MSFD		Data is needed for definition of reference conditions in

Operational objective	Indicator	Proposed GES Description	Proposed Targets	Similar indicators from other policies	Suggestions for development	Baselines and thresholds
		with wider distributions are less vulnerable to fishing. However, regional data is not always available.				the past, which is the baseline. Threshold needs to be defined based on the acceptable deviation from reference conditions.
3.2 The reproductive capacity of stocks is maintained	3.2.1. Size at maturity	The mean size of organisms in the catch is larger than the mean size at first maturity *Description: May reflect the extent of undesirable genetic effects of exploitation. To calculate this indicator, the mean size at first maturity is needed by species in the catch, in addition to the size of species in the catch. As in 3.1.5, this indicator will be available for those target species with monitoring programs dedicated to collect length distribution data.*	State -Stable or positive trend	-CFP-EC -MSFD		Baseline is not necessary. Threshold is formulated in GES.

Operational objective	Indicator	Proposed GES Description	Proposed Targets	Similar indicators from other policies	Suggestions for development	Baselines and thresholds
	3.2.2 Spawning Stock Biomass (SSB)	The Spawning Stock Biomass is at a level at which reproduction capacity is not impaired *Description: The Spawning Stock Biomass, usually referred to as SSB, is the total weight of the spawning stock. The SSB is available through stock assessment so not all species will have this information. Note that B_{MSY} is currently not considered as a threshold for stock management in European waters and values are not available. When both 3.1.3 and 3.2.3 indicators are available (only for few species) the most precautionary will be adopted. Only available if the stock has been assessed.*	State -$B > B_{thr}$ ($2xB_{lim}$)	-CFP-EC -MSFD		Data is needed for definition of reference conditions in the past, which is the baseline. Threshold is formulated in GES.
3.3. The impact of fishing activities in the ecosystem is low	3.3.1. Mean Trophic Level of the catch (and community)	The Mean Trophic Level is maintained or increases with time *Description: These indicators are being used with the CDB and other programs. To calculate these indicators, time series of catch per species or biomass (tones) and trophic level of the species are needed. The trophic level per species can be obtained from FishBase, SeaLifeBase, or regional datasets and models.*	State -Stable or positive trend	-MSFD -CBD -IndiSeas -OSPAR		Baseline is not necessary. Threshold needs to be defined based on the acceptable deviation from reference conditions.

Operational objective	Indicator	Proposed GES Description	Proposed Targets	Similar indicators from other policies	Suggestions for development	Baselines and thresholds
	3.3.2. Proportion of large fish in the catch (and the community)	The proportion of large fish is maintained or increases with time. *Description: The large fish indicator (LFI) reflects the size structure of the fish assemblage, which is assumed to be primarily affected by size-selective exploitation but is mediated by species composition as well as the fishing-induced reduction of life expectancy of each exploited species. In European waters,* LFI = WLargeFish / Wtotal, *where* WLargeFish *is the weight of fish greater than a chosen length (cm) and* Wtotal *is the total weight of all fish in the catch or survey. For the Mediterranean Sea we need to define Large Fish. This indicator can be calculated from the catch and from surveys (if data is available).*	State -Stable or positive trend	-MSFD -IndiSeas		Data is needed for definition of reference conditions in the past, which is the baseline. Threshold needs to be defined based on the acceptable deviation from reference conditions.
	3.3.3. Proportion of predatory fish in the catch (and in the community)	The proportion of predatory fish in the population is maintained or increases with time *Description: This indicator complements 3.3.3 and needs time series of total catch and catch of predatory species. This indicator can be calculated from biomass surveys if data is available. The definition of predatory fish should be*	State -Stable or positive trend	-MSFD -IndiSeas		Data is needed for definition of reference conditions in the past, which is the baseline. Threshold needs to be

Operational objective	Indicator	Proposed GES Description	Proposed Targets	Similar indicators from other policies	Suggestions for development	Baselines and thresholds
		specifically defined for the Mediterranean region.				defined based on the acceptable deviation from reference conditions.
	3.3.4. Proportion of all exploited species with declining biomass in the population	The proportion of species with declining biomass in the population is maintained or reduced with time *Description: this indicator is based on data from 3.1.3 (Biomass indices) and will be only calculated when time series of survey biomass of retained species is available.*	State -Stable or negative trend	-IndiSeas		Baseline is not necessary. Threshold needs to be defined based on the acceptable deviation from reference conditions.
	3.3.5. Mean length of fish in the community	The mean size of the fish is maintained or increases with time. *Description: This indicator reflects the species composition of a fish assemblage, where fishing is expected to cause a decrease in the proportion of species with large asymptotic body size, slow growth rate, late age and large size at maturation. It requires time series of*	State -Stable or positive trend	-MSFD -IndiSeas		Data is needed for definition of reference conditions in the past, which is the baseline. Threshold needs to be

Operational objective	Indicator	Proposed GES Description	Proposed Targets	Similar indicators from other policies	Suggestions for development	Baselines and thresholds
		individual length measures (cm) and time series of number of fish sampled. In places where there is no data for length, weights can be converted to lengths using w-l relationships. An alternative can be the mean maximum length of fish (MML) using the asymptotic total length of each species (L_∞). This indicator can be only calculated when time series of survey fish biomass is available. It can also be calculate from catch data.				defined based on the acceptable deviation from reference conditions.

Definitions from the table:

MSY: The largest annual catch that may be taken from a stock every year without affecting the catch of future years.

IUU: Illegal, unreported and unregulated fishing

Surveyed species (Definition from IndiSeas project, to be revised for the Mediterranean): These are species sampled by researchers during routine surveys (as opposed to species sampled in catches by fishing vessels), and should include species of demersal and pelagic fish (bony and cartilaginous, small and large), as well as commercially important invertebrates (squids, crabs, shrimps…). Intertidal and subtidal crustaceans and molluscs such as abalones and mussels, mammalian and avian top predators, and turtles, should be excluded. Surveyed species are those that are considered by default in the calculation of all survey-based indicators.

Retained species (landed) (Definition from IndiSeas project, to be revised for the Mediterranean)**:** These are species caught in fishing operations, although not necessarily targeted by a fishery (i.e. include by-catch species), and which are retained because they are of commercial interest, i.e. not discarded once caught, although this does not imply that sometimes certain size classes of that species may be discarded. A non-retained species is considered to be one that would never be retained for consumptive purposes. Intertidal and subtidal crustaceans and molluscs such as abalones and mussels are to be excluded. Retained species are those that are considered by default in the calculation of all catch-based indicators.

Predatory fish species (Definition from IndiSeas project, to be revised for the Mediterranean): Predatory fish are considered to be all surveyed fish species that are not largely planktivorous (i.e. phytoplankton and zooplankton feeders should be excluded). A fish species is classified as predatory if it is piscivorous, or if it feeds on invertebrates that are larger than the macrozooplankton category (> 2cm). Detritivores should not be classified as predatory fish.

1.2 Species to be considered: Groups of priority species identified by GFCM

Group I	Group II		Group III	
Engraulis encrasicolus	Alosa pontica	Sprattus sprattus	Alopias superciliosus	Siganus rivulatus
Merluccius merluccius	Aristaeomorpha foliacea	Squilla mantis	Alopias vulpinus	Lagocephalus sceleratus
Mullus barbatus	Aristeus antennatus	Trachurus mediterraneus	Carcharhinus plumbeus	Saurida undosquamis
Mullus surmuletus	Boops boops	Trachurus picturatus	Centrophorus granulosus	Marsupenaeus japonicus
Nephrops norvegicus	Chamelea gallina	Trachurus trachurus	Dalatias licha	Scomberomorus commerson
Parapenaeus longirostris	Coryphaena hippurus		Dipturus oxyrhincus	Fistularia commersonii
Psetta maxima	Diplodus annularis		Etmopterus spinax	Metapenaeus stebbingi
Sardina pilchardus	Eledone cirrhosa		Galeus melastomus	
Sprattus sprattus	Eledone moschata		Heptranchias perlo	
Squalus acanthias	Galeus melastomus		Hexanchus griseus	
Trachurus mediterraneus	Illex coindetii		Mustelus asterias	
	Lophius budegassa		Mustelus mustelus	
	Merlangius merlangius		Mustelus punctulatus	
	Micromesistius poutassou		Myliobatis aquila	
	Octopus vulgaris		Prionace glauca	
	Pagellus bogaraveo		Pteroplatytrygon violacea	
	Pagellus erythrinus		Raja asterias	
	Psetta maxima		Raja clavata	
	Raja asterias		Raja miraletus	
	Raja clavata		Raja undulata	
	Sardinella aurita		Scyliorhinus canicula	
	Scomber japonicus		Scyliorhinus stellaris	
	Scomber scombrus		Sphyrna tudes	
	Sepia officinalis		Squalus acanthias	
	Solea vulgaris		Squalus blainvillei	
	Sphyraena sphyraena		Torpedo marmorata	

Group of vulnerable species	Family	Species	Common name
Cetaceans	Balaenopteridae	*Balaenoptera acutorostrata*	Common minke whale
		Balaenoptera borealis	Sei whale
		Balaenoptera physalus	Fin whale
		Megaptera novaeangliae	Humpback whale
	Balenidae	*Eubalaena glacialis*	North Atlantic right whale
	Physeteridae	*Physeter macrocephalus*	Sperm whale
		Kogia simus	Dwarf Sperm Whale
	Phocoenidae	*Phocoena phocoena*	Harbor porpoise
	Delphinidae	*Steno bredanensis*	Rough-toothed dolphin
		Grampus griseus	Risso's dolphin
		Tursiops truncatus	Common bottlenose dolphin
		Stenella coeruleoalba	Striped dolphin
		Delphinus delphis	Common dolphin
		Pseudorca crassidens	False killer whale
		Globicephala melas	Long-finned pilot whale
		Orcinus orca	Killer whale
	Ziphiidae	*Ziphius cavirostris*	Cuvier's beaked whale
		Mesoplodon densirostris	Blainville's beaked whale
Seals	Phocidae	*Monachus monachus*	Mediterranean monk seal
Sharks, Rays, Chimaeras*	Carcharhinidae	*Carcharias taurus*	Sand tiger
		Carcharodon carcharias	Great white shark
		Prionace glauca	Blue shark
	Cetorhinidae	*Cetorhinus maximus*	Basking shark
	Gymnuridae	*Gymnura altavela*	Spiny butterfly ray
	Lamnidae	*Isurus oxyrinchus*	Shortfin mako
		Lamna nasus	Porbeagle
	Myliobatidae	*Mobula mobular*	Devil fish
	Odontaspididae	*Odontaspis ferox*	Small-tooth sand tiger shark

Group of vulnerable species	Family	Species	Common name
Sharks, Rays, Chimaeras	Oxynotidae	*Oxynotus centrina*	Angular rough shark
	Pristidae	*Pristis pectinata*	Smalltooth Sawfish
		Pristis pristis	Common sawfish
	Rajidae	*Dipturus batis*	Common skate
		Leucoraja circularis	Sandy ray
		Leucoraja melitensis	Maltese skate
		Rostroraja alba	Bottlenose skate
	Rhinobatidae	*Rhinobatos cemiculus*	Blackchin guitarfish
		Rhinobatos rhinobatos	Common guitarfish
	Sphyrnidae	*Sphyrna lewini*	Scalloped hammerhead
		Sphyrna mokarran	Great hammerhead
		Sphyrna zygaena	Smooth hammerhead
	Squatinidae	*Squatina aculeata*	Sawback angel shark
		Squatina oculata	Smoothback angel shark
		Squatina squatina	Angel shark
	Triakidae	*Galeorhinus galeus*	School/Tope shark
Sea Turtles	Cheloniidae	*Caretta caretta*	Loggerhead turtle
		Chelonia mydas	Green turtle
	Dermochelyidae	*Dermochelys coriacea*	Leatherback sea turtle
Sea birds	Falconidae	*Falco eleonorae*	Eleonora's Falcon
	Cerylidae	*Ceryle rudis*	Pied Kingfisher
	Charadriidae	*Charadrius alexandrinus*	Kentish Plover
		Charadrius leschenaultii columbinus	Greater Sand Plover
	Halcyonidae	*Halcyon smyrnensis*	White-throated Kingfisher
	Hydrobatidae	*Hydrobates pelagicus*	European Storm-Petrel
		Hydrobates pelagicus melitensis	European Storm-Petrel
		Hydrobates pelagicus pelagicus	European Storm-Petrel
	Laridae	*Larus audouinii*	Audouin's Gull
		Larus armenicus	Armenian Gull
		Larus genei	Slender-billed Gull
		Larus melanocephalus	Mediterranean Gull

Group of vulnerable species	Family	Species	Common name
Sea birds	Pandionidae	*Pandion haliaetus*	Osprey
	Pelecanidae	*Pelecanus crispus*	Dalmatian Pelican
		Pelecanus onocrotalus	Great White Pelican
	Phalacrocoracidae	*Phalacrocorax aristotelis*	European Shag
		Phalacrocorax pygmaeus	Pygmy Cormorant
	Phoenicopteridae	*Phoenicopterus ruber*	American Flamingo
	Procellariidae	*Calonectris diomedea*	Cory's Shearwater
		Puffinus puffinus yelkouan	Yelkouan Shearwater
		Puffinus yelkouan	Mediterranean Shearwater
		Puffinus muretanicus	Balearic Shearwater
	Scolopacidae	*Numenius tenuirostris*	Slender-billed Curlew
	Sternidae	*Sterna albifrons*	Little Tern
		Sterna bengalensis	Lesser Crested Tern
		Sterna sandvicensis	Sandwich Tern
		Sterna caspia	Caspian Tern
		Sterna nilotica	Gull-billed Tern

- **Group I:** Species that drive the fishery and for which assessment is regularly carried out.

- **Group II:** Species that are important in terms of landing and/or economic values at regional and subregional level and for which assessment is not regularly carried out.

- **Group III:** Species under international or national management plans; species under recovery and/or action plans for conservation. This Group 3 also contains a list of non-indigenous species with the greatest potential impact.

- **Vulnerable species:** List of endangered or threatened species included in the Appendix II-III of the SPA/BD Protocol of the Barcelona Convention (Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean).

Table identifying which species groups will be used for each indicator:

Operational objective	Indicator	Proposed GES Description	Species included
3.1. Level of exploitation by commercial fisheries is within biologically safe limits	3.1.1 Total catch	Total catch does not exceed the Maximum Sustainable Yield (MSY).	-Priority species (I-II-III) -Vulnerable species
	3.1.2 Fishing mortality	Fishing mortality in the stock does not exceed the level that allows MSY ($F \leq F_{MSY}$).	-Priority species (I-II)
	3.1.3 Biomass indices	Stable or increasing biomass indices (relative or absolute), with absolute value at or above biomass that produces maximum sustainable yield.	-Priority species (I-II-III) -Vulnerable species
	3.1.4 Ratio between catch and biomass index (hereinafter catch/biomass ratio).	The catch/biomass ratio allows to recover the stock or to maintain it at a level where it can produce the Maximum Sustainable Yield (MSY)	-Priority species (I-II-III) -Vulnerable species
	3.1.5 Length distribution of the population in the catch	The length distribution of the population in the catch is maintained or increases.	-Priority species (I-II)
	3.1.6. Spatial distribution of the population	The spatial distribution of the population is maintained or increases.	-Priority species (I-II)
3.2. The reproductive capacit	3.2.1. Size at maturity	The mean size of organisms in the catch is larger than the mean size at first maturity.	-Priority species (I-II)

	3.2.2 Spawning Stock Biomass (SSB)	The Spawning Stock Biomass is at a level at which reproduction capacity is not impaired	-Priority species (I-II)
3.3. The impact of fishing activities in the ecosystem is low	3.3.1. Mean Trophic Level of the catch (and community)	The Mean Trophic Level of the Catch and the Community is maintained or increases with time.	-Priority species (I-II-III) -Vulnerable species
	3.3.2. Proportion of large fish in the catch (and the community)	The proportion of large fish (>40 cm) is maintained or increases with time.	-Priority species (I-II-III) -Vulnerable species
	3.3.3. Proportion of predatory fish in the catch (and in the community)	The proportion of predatory fish in the population is maintained or increases with time	-Priority species (I-II-III) -Vulnerable species
	3.3.4. Proportion of all exploited species with declining biomass in the population	The proportion of species with declining biomass in the population is maintained or reduced with time	-Priority species (I-II-III) -Vulnerable species
	3.3.5. Mean length of fish in the community	The mean size of the fish is maintained or increases with time.	-Priority species (I-II)

1.3 Geographical scale:

As part of the guidance for a common methodology to be use by clusters, the ECAP Coordination Group recommended that scales should be national and when possible regional (Mediterranean) and transboundary or sub-regional. Currently, around half of the Mediterranean countries have stock assessments for some of the stocks being fished on their national waters.

Under GFCM, stock assessments are made by Geographical Sub-Areas (GSA) established as management units in 2001 and amended in 2009 (RESOLUTION GFCM/33/2009/2). The GSA delimitation is mainly based on practical considerations rather than on the stock distribution, and many stocks extend beyond the geographic limits of GSAs. However, although the concept of their delimitation still needs further consideration, the GSAs, as established by GFCM appear as the most appropriate subdivisions for stock assessments for management purposes in the Mediterranean Sea. They are also adopted for assessments at national level.
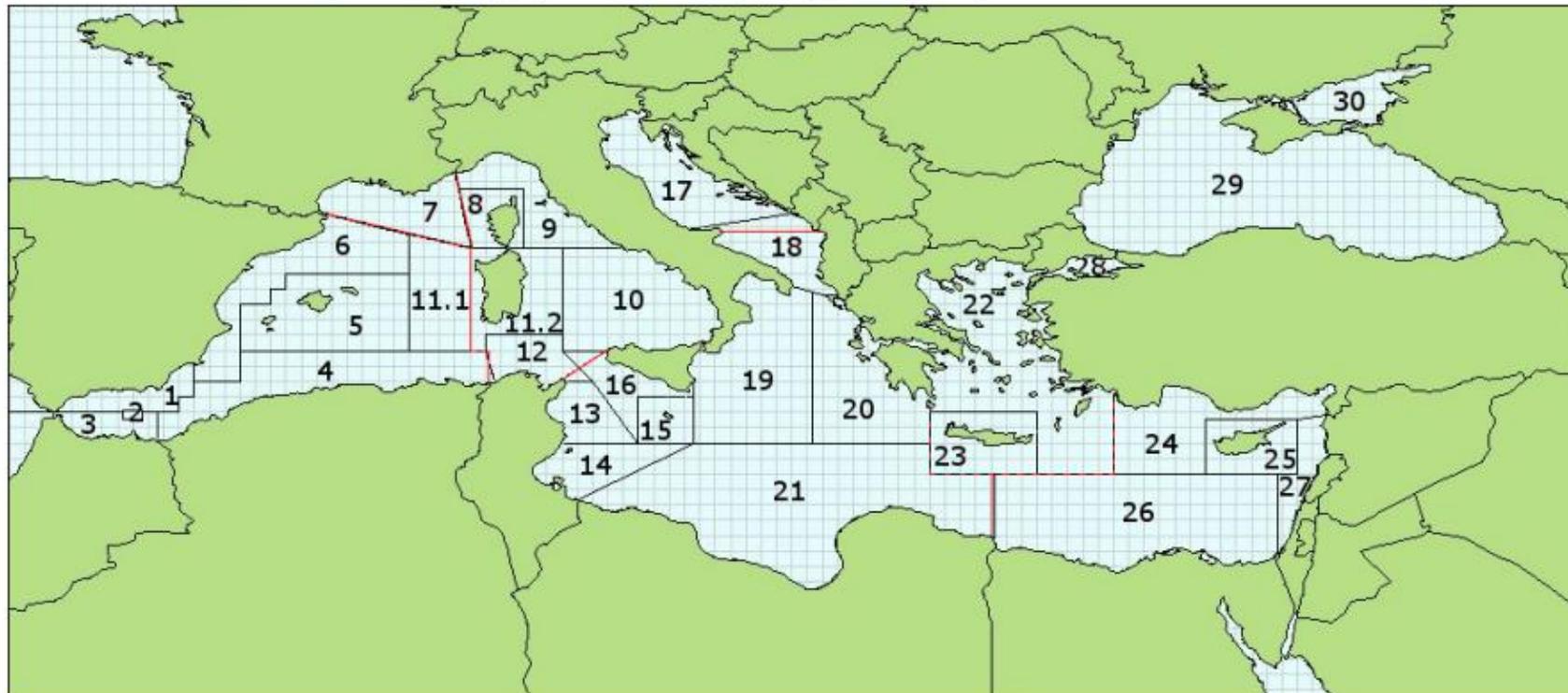
---- *FAO Statistical Divisions (red)*   ---- *GFCM Geographical Sub-Areas (black)*

01 - Northern Alboran Sea	07 - Gulf of Lions	13 - Gulf of Hammamet	19 - Western Ionian Sea	25 - Cyprus Island
02 - Alboran Island	08 - Corsica Island	14 - Gulf of Gabes	20 - Eastern Ionian Sea	26 - South Levant
03 - Southern Alboran Sea	09 - Ligurian and North Tyrrhenian Sea	15 - Malta Island	21 - Southern Ionian Sea	27 - Levant
04 - Algeria	10 - South and Central Tyrrhenian Sea	16 - South of Sicily	22 - Aegean Sea	28 - Marmara Sea
05 - Balearic Island	11.1 - Sardinia (west) 11.2 - Sardinia (east)	17 - Northern Adriatic	23 - Crete Island	29 - Black Sea
06 - Northern Spain	12 - Northern Tunisia	18 - Southern Adriatic Sea	24 - North Levant	30 - Azov Sea

GFCM Geographical Sub-Areas (GSAs)

1.4 Sources and availability of data:

In the Mediterranean, there are significant discrepancies between sub-regions in terms of availability, quality and relevance of data that could be useful for conducting GES assessments in relation to EO 3.

Within the GFCM mandate a series of stocks are assessed on an annual basis. The data, results including stock status and advice produced by scientists are gathered in Stock Assessment Forms (SAFs) which are data files managed and stored within the GFCM Information System. SAFs prepared by scientist from Mediterranean countries are reviewed by the Scientific Advisory Committee (SAC) of GFCM through its Sub-Committee on Stock Assessment (SCSA) with the view of assessing the stocks status and proposing management recommendations for the consideration and eventual adoption by the Commission.

GFCM has also a specific data requirement in force since 2010, the Task 1 data submission protocol that all its members must comply with. Task 1 includes protocols and standards for qualitative and quantitative data notification/submission by its Members regarding fishing capacity by fleet segment (Task 1.1), fishing activity descriptors and resources exploited (Task 1.2), economic parameters by fleet segment (Task 1.3), catch, effort (Task 1.4) and biological information of the catch (Task 1.5). More recently a new framework for data collection and submission is being developed which will modify the way the data are collected and transmitted by the countries. The same sections as indicated for Task 1 remain and additional boxes will be available for more detailed data on by-catch and biological information. The new (Data Collection Reference Framework) DCRF is now in process of revision by members and will be submitted for adoption by the commission in the next session of 2015.

Stocks assessed (species/GSA) by the SAC of GFCM in 2011 and 2012.

Species	GSA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Aristaeomorpha foliacea																X	X											
Aristeus antennatus						X	X			X																		
Boops boops				X																						X	X	
Engraulis encrasicolus		X					X	X										X	X									
Galeus melastomus										X																		
Glaucostegus cemiculus															X													
Merluccius merluccius		X				X	X	X		X									X									
Mullus barbatus				X		X	X			X						X	X									X		
Mullus surmuletus						X				X																X		
Nephrops norvegicus						X				X																		
Pagellus bogaraveo		X		X																								
Pagellus erytrinus																X	X										X	

Parapenaeus longirostris			⊠																								
Parapenaeus longirostris				⊠	▥		▥			▥	▥	▥	▥													
Raja asterias							◹																				
Raja clavata							◹				◹	◹														
Sardina pilchardus	⊠		▥		▥	▥						▥	◹													
Scyliorhinus canicula			◹				◹																				
Shpyraean sphyraena									◹	◹																
Solea solea												▥											⊠			
Spicara smaris																					◹					

Assessment in 2011 ⊠   Assessment in 2012 ◹   Assessment in 2011 and 2012 ▥

In addition to the stock assessments made within the framework of GFCM, the International Commission for the Conservation of Atlantic Tuna (ICCAT) is undertaking on regular basis assessments for the Mediterranean stocks of Bluefin Tuna (*Thunnus thynnus*) and swordfish (*Xiphias gladius*).

European members of the GFCM have also data available regarding abundance and size structure of commercial demersal and pelagic stocks under the Data Collection Framework Directive (such as MEDITS and MEDIAS campaigns).