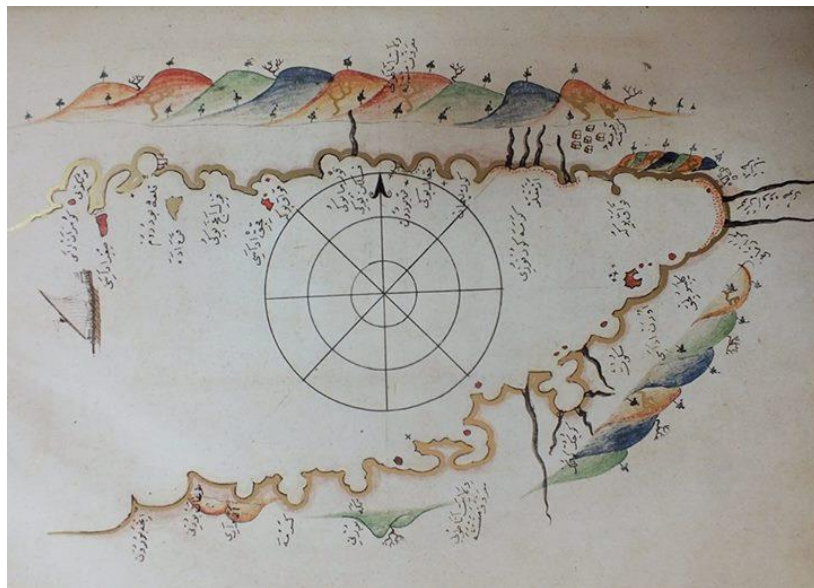


Draft Management Plan for the Small-scale Fisheries in Gökova MPA, Turkey



September 2017

Preparation of this document

This document was prepared following a series of stakeholder workshops supported by the FAO EastMed project following the Ecosystem Approach to Fisheries Management, which were held in Gokova MPA Turkey between February 2016 to July 2017. In developing the Management Plan attention has been placed on assisting the various stakeholders in going through each steps for implementing EAF, and using the appropriate tools for the particular situation in Gokova. The end results of this document is based on the contributions of all the stakeholders as listed in Annexes I & II.

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List of abbreviations

ACFM	Advisory Committee of Fisheries Management
BR	Baseline Report
EAF	Ecosystem Approach to Fisheries
EastMed	Scientific and Institutional Cooperation to Support Responsible Fisheries in the Eastern Mediterranean
EPASA	Environmental Protection for Special Areas
FAO	Food and Agriculture Organization of the United Nations
FMP	Fisheries Management Plan
MEU	Ministry of Environment and Urbanization
MFAL	Ministry of Food, Agriculture and Livestock
MPA	Marine Protected Area
NGO	Non-Governmental Organizations
GFCM	General Fisheries Commission for the Mediterranean
SEPA	Special Environmental Protection Area
SSF	Small Scale Fisheries
TurkStat	Turkish Statistical Institute

ACKNOWLEDGEMENTS

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1. Introduction

1.1. Fisheries in Turkey

Turkey has extensive water resources with its favorable geographical position between the Black Sea and Mediterranean Sea, and it is rich in fish and other marine and fresh water products. There are some 154 known marine fish species in the Black Sea, 257 in the Sea of Marmara and 449 in the Aegean Sea and 441 in the Levantine Basin. There are total of 512 species all along Turkish Coasts (Bilecenoğlu et al., 2014). In contrast to its rich biologic diversity, the Mediterranean has a relatively low fish productivity.

Fisheries in Turkey are characterized as multispecies, multigears and both demersal and pelagic fish stocks are targeted as in most of the other Mediterranean countries. Trawls are exploiting demersal species, while purse seiners are concentrated on small and large pelagic fish stocks. Lagoon fisheries also exist in the region focusing on seabass, sea bream, eel and mullet. Fishing with passive fishing gears (set nets longlines, traps etc.) and vessels <12 m small-scale fisheries are very common. Fishery Statistics from the Turkish Statistical Institute (TurkStat) show that small-scale fisheries have more than 90 percent of the total number of fishing vessels, however they produce less than 10 percent of the total landings in terms of weight. The average length of vessels involved in the small-scale fishery is 8 meters and average engine power is about 10-25 HP. They are mostly locally built wooden vessels equipped with inboard engines and operate various gillnets and longlines (Ünal and Göncüoğlu, 2012).

1.2. Gökova Bay

Gökova Bay is located on the southern Mediterranean coast of Turkey. Part of the Gökova Bay including both marine and land areas was designated, and declared as a Special Environmental Protection Area (SEPA) by the Decree no. 88/13019 of Cabinet of Ministers (June 12, 1988). Afterwards, the Decree no. 2010/1089 of Cabinet of Ministers (official gazette number 22 December 2010 / 27793) approved the border change of Gökova SEPA (Aktaş et al., 2011). Considering only the marine area today, Gökova SEPA is one of the 31 Marine and Coastal Protected Areas (in other words MPA) in Turkey (Figure 1 - Aktaş et al., 2011). With a land area of 270 km² and a marine area of 827 km², the economy of the region depends on agriculture, fishing and tourism. Fishing in the region has developed as small scale due to the conditions of the coastline, the geography and productivity of the bay as well as the status of the area pertaining to conservation. The marine area of Gökova Bay has high biological diversity, with about 723 species described; 34 of these species are protected under national and international treaties while 26 species non-indigenous species have moved to the Mediterranean through various routes.



Figure 1. Map of Gökova MPA and protected area (Southern Aegean Sea), Turkey

1.3. Small-scale fisheries in Gökova Bay MPA

Fishers use mainly passive, traditional, and small-scale fishing gears such as longlines and gillnets, and perform fishing during the year with approximately 8.1 ± 0.6 m length fishing boats in Gökova MPA. The main targeted species are listed in Table 1. Figure 2 shows the distribution of the fishing gears that are used in the area.

Table 1. The main target species fished in Gökova MPA, fishing gears and fishing periods.

Species	Target and Bycatch Species	Fishing Gear	Fishing Period
Octopus (<i>Octopus vulgaris</i>)	Target	Entangling	November-April
Amberjack (<i>Seriola dumerili</i>)	Target	Gillnet/Entangling	April-September
Hake (<i>Merluccius merluccius</i>)	Bycatch	Gillnet/Entangling Longline	February-June
Red mullets (<i>Mullus spp.</i>)	Target	Gillnet/Entangling	February-May
Narrow barred Spanish mackerel (<i>Scomberomorus commerson</i>)	Target	Gillnet/Entangling	December/ March-April
Leer fish (<i>Lichia amia</i>)	Bycatch	Gillnet/Entangling	November- December/ March- April
Sea bream (<i>Sparus aurata</i>)	Target	Longline	July-October
Grey triggerfish (<i>Balistes capriscus</i>)	Bycatch	Gillnet/Entangling	April-May
Common sole (<i>Solea solea</i>)	Target	Gillnet/Entangling	December-February
Painted comber (<i>Serranus cabrilla</i>)	Bycatch	Longline Gillnet/Entangling	All the year round
Barracuda (<i>Sphyraena sp.</i>)	Bycatch	Gillnet/Entangling	January-February/ March-April
Horse mackerel (<i>Trachurus sp.</i>)	Target	Gillnet/Entangling	Winter Months
Picarel (<i>Spicara smaris</i>)		Gillnet/Entangling	April-May
Goldblotch grouper (<i>E. costae</i>)	Target	Longline- Gillnet/Entangling	July-September
Two-banded sea bream (<i>Diplodus</i>	Target	Longline	All the year round

<i>vulgaris</i>)			
Shrimp (<i>Penaeus kerathurus</i>)	Target	Gillnet/Entangling	March-June
Grey mullets (<i>Mugil spp.</i>)	Target	Gillnet/Entangling	March-April
Common pandora (<i>Pagellus erythrinus</i>)	Target	Longline	All the year round
Chub mackerel (<i>Scomber japonicus</i>)	Bycatch	Gillnet/Entangling	Summer months
Silver scabbardfish (<i>Lepidopus caudatus</i>)	Bycatch	Longline	September-November
Bogue (<i>Boops boops</i>)	Bycatch	Gillnet/Entangling	All the year round
Grouper (<i>Epinephelus aeneus</i>)	Target	Longline	July-September
Sea bass (<i>Dicentrarchus labrax</i>)	Target	Gillnet/Entangling	All the year round
Brushtooth lizardfish (<i>Saurida undosquamis</i>)	Bycatch	Gillnet/Entangling	All the year round
Brown meagre (<i>Umbrina cirrosa</i>)	Bycatch	Gillnet/Entangling	October-November/ April-May
Goldband goatfish (<i>Upeneus molluccensis</i>)	Target	Gillnet/Entangling	February-May
Dusky grouper (<i>Epinephelus marginatus</i>)	Target	Longline	All the year round
Atlantic bonito (<i>Sarda sarda</i>)	Bycatch	Gillnet/Entangling	November-April
John dory (<i>Zeus faber</i>)	Bycatch	Gillnet/Entangling	November-December
Sauppe (<i>Sarpa salpa</i>)	Bycatch	Gillnet/Entangling	May-July
Dentex (<i>Dentex dentex</i>)	Target	Longline	All the year round
Dusky spinefoot (<i>Siganus sp.</i>)	Target	Gillnet/Entangling	July-August
Axillary sea bream (<i>Pagellus acerna</i>)	Bycatch	Gillnet/Entangling	All the year around
Randall's threadfin bream (<i>Nemipterus randalli</i>)	Target	Longline	All the year around
		Gillnet/Entangling	

Source: Modified from Ünal and Erdem, (2009)

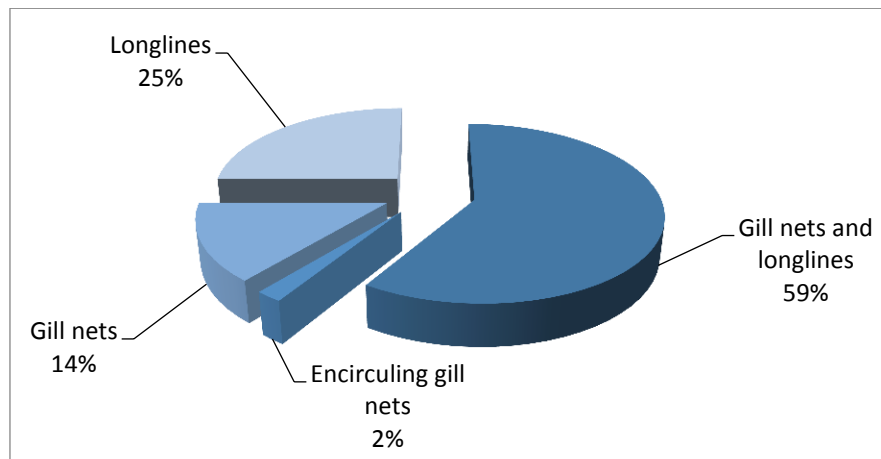


Figure 2. Distribution of preferred fishing gears

1.3.1. Fisheries cooperatives

There are three active fisheries cooperatives in the project area. The oldest cooperative was founded in 1973 (The Akcapinar Fishery Cooperative). The Akyaka Fishery Cooperative was founded in 1992, almost 20 years after the establishment of the Akcapinar Fishery Cooperative and the most recent one was founded in 1999 (The Sarnıç Akbük Fishery Cooperative). There was also a fishery cooperative in Ören, which was located adjacent to the Gökova MPA but it was dissolved due to several reasons. According to the recent data provided by cooperatives, the rate of members per total number of fishers among small-scale fishers in Gökova MPA is 66%.

The Akyaka Fishery Cooperative is an active fishery cooperative in the region and has 29 members, but all fishers in the village are not cooperative members. Gillnet and longline fisheries dominate small-scale fisheries. Species belong to Sparidae and Epinephelinae are the most important and target species of the region. In the case of Akçapınar Fishery Cooperative, all fishers in the region were cooperative members until 2008. However, due to administrative problems, membership rate dropped between the years 2006-2009. According to the most recent available information, actual registered member and active fishers (vessel owners) in Akçapınar are 25 and 10 respectively. There are 12 small-scale and 5-6 subsistence fishing vessels in Akbük; 85% of the owners of small-scale professional fishing vessels are members of Sarnıç-Akbük Fishery Cooperative (Table 2).

Table 2. Characteristics of fishery cooperatives located and operating in Gökova MPA.

Fishery cooperatives	Akyaka Fishery Cooperative	Akçapınar Fishery Cooperative	Sarnıç-Akbük Fishery Cooperative
Foundation	1992	1973	1999
Major activities	Fishing and marketing	Fishing and marketing	Fishing
Registered members	29	25	12
Active members	23	15	11
Active members (%)	79	60	92

Total number of fishers (vessel owners) in the cooperative area	37	50	13
Membership rate (%)	78	50	85
Employees	3	1	0

During the last 17 years, Akyaka Fishery Cooperative increased the number of its members compared to other two fishery cooperatives running in the same region (Figure 3). Furthermore, considering several characteristics (cooperation rate, rate of active members, volume and value of catch) Akyaka Fishery Cooperative shows positive results.

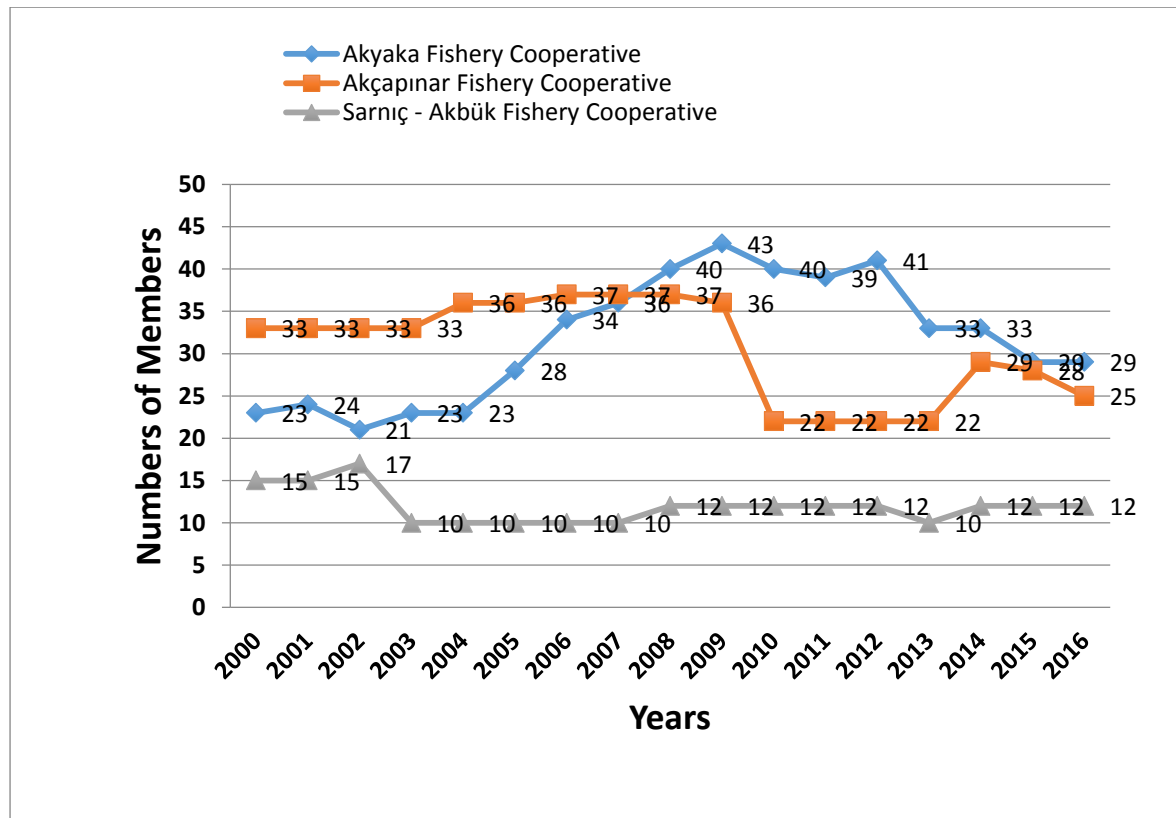


Figure 3. Changes in number of cooperative members over the last 17 years in Gökova MPA.

In all three fisheries cooperatives, group sizes were small enough to retain the interest of fishers; additionally, there was no evidence of corruption, larceny or other dishonest activities in any of the cooperatives. All had been formed based on local initiatives, in response to the fishers themselves (Ünal et al., 2009b).

Cooperatives with a marketing facility (Akyaka and Akçapınar) have four employees in total; none has a professional manager. In terms of marketing the fish, members are supposed to bring their catch to the cooperatives and sell them through the cooperative; however, some difficulties are being faced in marketing and some of the members sell their fish outside of the cooperative. However, marketing fish generate 99% of the cooperative revenue.

1.3.2. Socioeconomic importance of the fishery

Marine capture fisheries provide full-time and part-time employment opportunity to the 150-200 fishers respectively who directly work on fishing boats in the bay. Fishery cooperatives pay salary to directors, heads and fish cleaners which means there are five full-time workers in these cooperatives. A system of marine rangers has been in practice in the bay since 2013, which also provides full-time employment authority to the three former fishers of the bay.

There are three permanent retailers/fish shops (cooperatives excluded) and two fish stands at Gökova bazaar (only Saturdays) in the region providing employment opportunities for nine people. There are also 10 to 20 (depending on the season) fish restaurants located around the Gökova MPA and they provide service during the year. Fish restaurants provide employment opportunities for approx. 142 people including their owners. Additionally, there are four people fix and prepare nets and one of them works on board fishing with her husband.

Percentages of those who accepted fishery as their only source of income were determined as follows: 38.9 percent (Akyaka), 50 percent (Akçapınar), and 100 percent (Sarnıç-Akbük) (Ünal, 2010).

Most of the fishers work alone. Only one fisher from Akyaka Cooperative works with a partner as sharing system. Five fishers from Akyaka Cooperative goes to fishing with their wives and these women not only cook or clean on board, but also very well qualified for baiting, fixing fishing gears, laying nets/long lines and steering boat.

Due to the lack of regular monitoring of fisheries in the bay, value and landing of catches from the fishery per year by species are not available for the last five years. However, the relevant data is provided by some researchers (Ünal et al., 2009c), NGOs (e.g. Mediterranean Conservation Society) and Akyaka Fishery Cooperative (e.g. Akyaka Fishery Cooperative) working in the region. These data represent records of the fishery cooperatives rather than all of the fishers operating in the Gökova MPA.

According to the recent data belonging to 2015 provided by Mediterranean Conservation Society (AKD, 2016) based on Akyaka Fishery Cooperative, in terms of quantity, the top five species are *Pagellus erythrinus*, *Epinephelus aeneus*, *Merluccius merluccius*, *Sparus aurata*, *Mugil* spp. in the bay. Considering the value of the species or their contribution to the gross income of the cooperatives, *Epinephelus aeneus*, *Pagellus erythrinus*, *Sparus aurata*, *Mugil* spp., *Epinephelus costae* are the most important species in the Gökova MPA (Table 3). However Randall's threadfin bream (*Nemipterus randalli*) was first recorded in Gökova Bay in 2013 (Gülşahin and Kara, 2013) and soon after this species has reached the highest percentage of the total catch (22%) for the years 2015-2016 (AKD, 2016).

Table 3. Landing volume and value of Akyaka Fishery Cooperative in Gökova MPA.

Common name	Latin name	Landing volume (kg)			Landing volume (%)			Landing value (TRL)*			Landing value (%)*		
		2006	2009	2015	2006	2009	2015	2006	2009	2015	2006	2009	2015
Other species	Other species	8,901	3,152	12,181	33.5	25	53.1	40,636	21,434	166,564	12	7.4	34.4
White grouper	<i>Epinephelus aeneus</i>	2,905	755	1,763	11	6	7.7	100,782	33,975	90,893	31	11.8	18.8
Common pandora	<i>Pagellus erythrinus</i>	1,549	2,550	2,693	6	20.2	11.7	24,778	63,750	82,183	8	22.1	17.0
Sea bream	<i>Sparus aurata</i>	938	1,200	1,446	4	9.5	6.3	23,295	42,000	56,614	7	14.6	11.7
Striped mullet	<i>Mugil spp.</i>	900	2,100	858	3	16.7	3.7	10,499	63,000	13,720	3	21.9	2.8
Goldblotch grouper	<i>Epinephelus costae</i>	170	95	283	1	0.8	1.2	3,729	3,390	11,110	1	1.4	2.3
Dentex	<i>Dentex dentex</i>	148	500	239	1	4	1.0	5,036	20,000	10,896	2	6.9	2.3
Common sole	<i>Solea solea</i>	824	20	203	3	0.2	0.9	24,643	600	10,863	8	0.2	2.2
Common octopus	<i>Octopus vulgaris</i>	3,842	800	540	15	6.3	2.4	27,762	12,000	10,089	9	4.2	2.1
Two-banded sea bream	<i>Diplodus vulgaris</i>	792	380	451	3	3	2.0	10,113	5,700	8,393	3	2	1.7
Barracuda	<i>Sphyrna sp.</i>	1,517	235	475	6	1.9	2.1	5,084	3,525	7,277	2	1.2	1.5
European hake	<i>Merluccius merluccius</i>	1,642	250	1,367	6	2	6.0	5,711	3,750	6,835	2	1.3	1.4
Goldband goatfish	<i>Upeneus molluccensis</i>	761	550	391	3	4.4	1.7	7,538	13,750	6,254	2	4.8	1.3
Caramote prawn	<i>Penaeus kerathurus</i>	1,106	2	38	4	0	0.2	33,516	90	1,906	10	0	0.4
Dusky grouper	<i>Epinephelus marginatus</i>	56	20	7	0.2	0.2	0.0	1,038	600	259	0.3	0.2	0.1
Total		26,051	12,609	22,934	100	100	100	324,160	287,564	483,856	100	100	100

1.3.3. Fisherwomen

The Aegean region has 6.909 legally licensed fishers, of whom 238 (TurkStat, 2015) are women, which is a higher ratio in comparison to the rest of the other region. In the entire Aegean region 38% of the fisherwomen are legally licensed (Göncüoğlu and Ünal, 2011). There are total 28 fisherwomen actively fishing in Gökova Bay. Nine of them live in Akyaka, five of them in Akçapınar and fourteen of them in Akbük.

1.4. Status of stocks

There is no stock assessment made for any fish stock in the Turkish South Eastern Aegean Sea. No scientific or managerial information is available on the boundaries of stocks. The only continuous and main source of information regarding the state of fisheries in Turkey is the official fishery statistics collected, compiled and published annually by the TurkStat. These statistics, unfortunately, pool all the data collected in different regions of the Turkish Aegean Sea and present one figure, annual total catch for the whole sea area. The data regarding fishing effort are provided similarly. In addition, accuracy, precision, coverage and representability of these catch statistics have long been debated (Tirasin and Unluoglu, 2012). There seems to be more or less a consensus that the catch figures reported in these statistics are underestimates of the fish actually caught and that a substantial amount goes unreported. Yet, so far, there has been no agreement upon the magnitude of the bias. Another additional concern is the inaccuracy of the provided information particularly on the species level. The organism names given in these statistics do not always strictly correspond to the distinct biological species. Sometimes, data on several closely related species are merged and presented under only one generic name. Again, the statistics for some similar looking species are considered somewhat doubtful because these species are often mistaken for one another and their common names are also recurrently swapped locally (Tirasin and Unluoglu, 2012). Although all these concerns are duly shared, the official catch statistics are still considered here as a useful index reflecting the overall variations in fisheries resources. Thus, the trends seen in the figures (Figure 4 and Figure 5) presented below based on the official statistics can be regarded as reasonably valid. Because the historical catches of grey mullets and hake were much higher than the rest of other species; two separate graphs, one for these two species (Figure 4) and one for the remaining species (Figure 5) were prepared in order to ensure that the variations in the annual landings of the latter group would be more conspicuous.

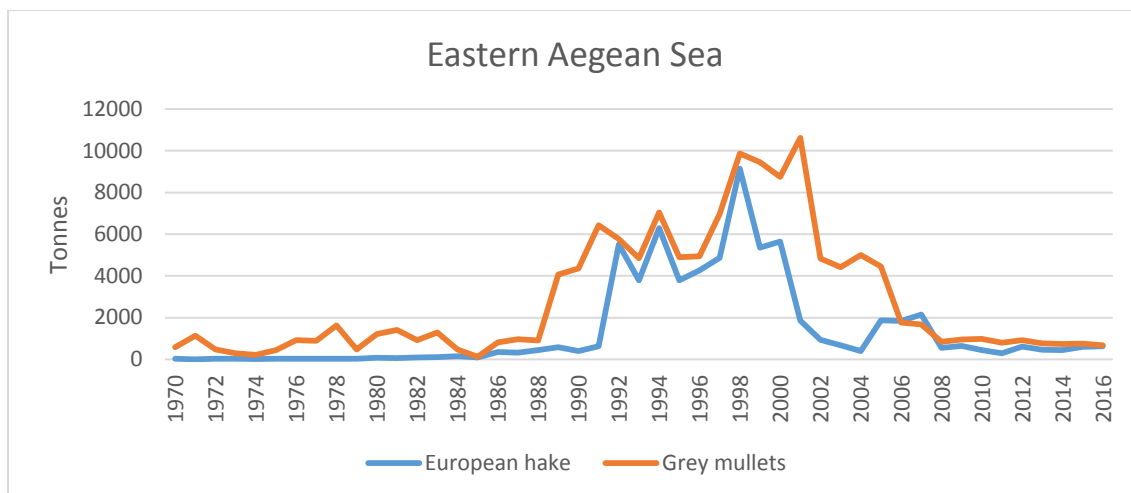


Figure 4. Annual total catch (tonnes) statistics of hake and grey mullets in the Eastern Aegean Sea from 1970 to 2016 (data source: SIS and TurkStat)

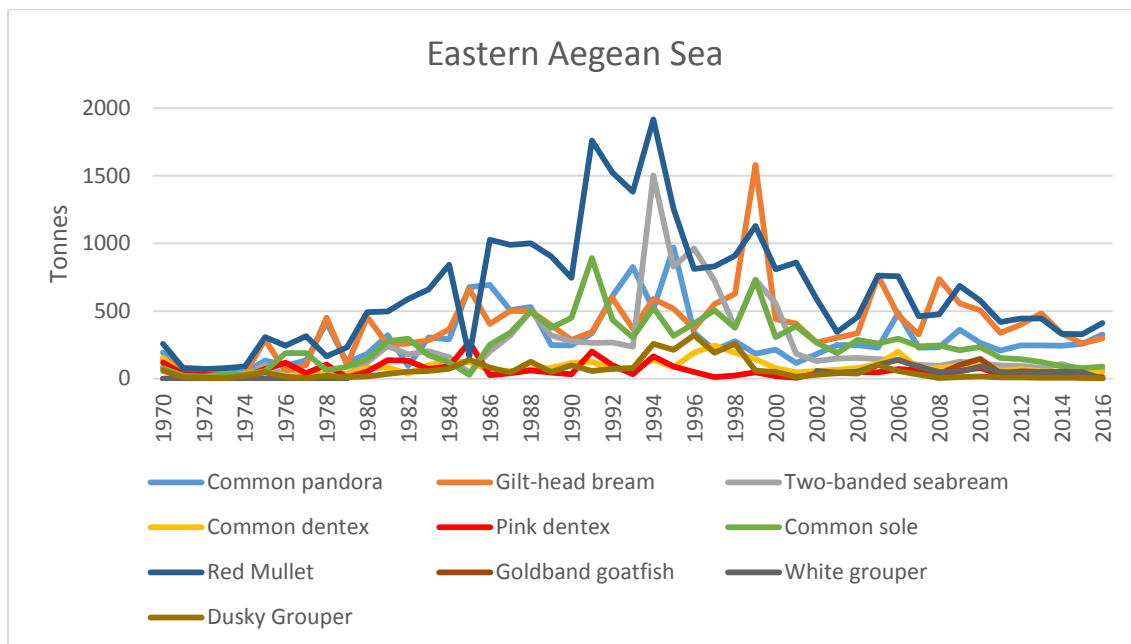


Figure 5. Annual total catch (tonnes) statistics of the above-mentioned major species (excluding hake and grey mullets) in the Eastern Aegean Sea from 1970 to 2016 (data source: SIS and TurkStat).

European hake was the most abundant fish species in the demersal fisheries in the Aegean Sea (TurkStat, 2004-2016). The dominance of hake in the demersal fish landings was

more pronounced between 1992 and 2000 (Figure 3). This period contained three top years, 1992, 1994 and 1998, in hake production with the respective quantities of 5.5, 6.3 and 9.1 thousand tonnes. Following the historical maximum catch in 1998, the landings commenced to decrease. The registered amount of hake caught in 2016 was as low as 637 tonnes (Figure 3).

Grey mullets were one of the more abundant pelagic fish group in the Aegean Sea. The amounts of grey mullets caught in the region rose fast from 9 hundred tonnes in 1988, with relatively small fluctuations, to over 10 thousand tonnes in 2001 (Figure 3). After this historical maximum, the landings declined sharply and the catch in 2008 was again about 9 hundred tonnes. Since 2009, the grey mullet catches have remained within a range of 10 to 7 hundred tonnes.

Red mullet was the second most abundant demersal fish species in the Aegean Sea. There were two peaks in the production of red mullet, the first 1.8 thousand tonnes in 1991, and the second 1.9 thousand tonnes in 1994 (Figure 4). After this highest recorded yield, catches of red mullet dropped drastically down to slightly above 3 hundred tonnes in 2003. After a few years of minor elevations, trend of decline in yield continued and the total production was just above 4 hundred tonnes in 2016.

There were more commercial demersal fish species, such as gilthead sea bream, common pandora, two banded bream and sole in the fisheries in the Aegean Sea albeit with relatively minor catch levels.

Octopus was the most dominant and commercially important invertebrate in the region. Octopus catches somewhat oscillated with three notable peaks of 1.6, 1.3 and 1 thousand tonnes in 1989, 1998 and 2001, respectively. Afterwards, the landings gradually declined and remained under 3 hundred tonnes since 2011.

Regardless of species, the overall view from Figure 4 and Figure 5 suggest that the fisheries resources in the Aegean Sea show a clear trend of decline since 2009. While these figures depict a somewhat general picture for the entire Aegean Sea, it is possible to provide some, more area based information about stock structures of the targeted species from a previous study by Ünal (2010). Ünal (2010) used the simple methods described by Froese and Binohlan (2000) with the length frequency data from random subsamples of several important target species taken from the catches of the Akyaka Fishery Cooperative in 2009-2010. In addition to the groupers, the most important commercial fish in the area, target species included common pandora, gilthead bream, two banded seabream, red mullet, goldband goatfish and Atlantic chub mackerel.

Ünal (2010) concluded from the evaluation of the length frequency data of groupers that a large number of recruits were present in the catches, and the proportion of large and mature fish was low. These findings indicated overexploitation with a probable recruitment over fishing. It is concluded from the similar analyses carried out for red mullets, common pandora, goldband goatfish and Atlantic chub mackerel that these fish, were moderately exploited and no recruitment overfishing was present. However, Ünal (2010) warned that the conclusions should be interpreted cautiously due to low sample sizes.

2. Rationale and Scope of the Management Plan

Small-scale fisheries (SSF) are important in Turkey due to the mainly socioeconomic importance. However, current threats to the SSF (e.g. climate change, changing catch composition, decreasing catch amount, irregular and relatively low fishing income etc.)

management actions need to be implemented to ensure the sustainability of the fishery. However, when in order to take these actions on should consider all the relevant actors and following a bottom-up approach. In this respect the Fisheries Management Plan (MFP) should be prepared by local fishers and other stakeholders. The present management plan was designed to assist managers and stakeholders in making more informed decisions for the sustainable use of the resources based on priorities and recommended actions identified jointly by the main stakeholders in the fishery. The plan was designed in line with the FAO Code of Conduct of Responsible Fisheries, following the principles and methodology of the Ecosystem Approach to Fisheries (FAO, 2003). The scope of the management plan is summarized in Table 4.

Table 4. Scope of the management plan for SSF in Gökova MPA.

Fleet segments and fishers involved	About 115 (Ünal, 2010) fishing vessels (8.1±0.6 m length) and 150-200 fishers. Three active fishery cooperatives.
Fisheries resources	Various pelagic species, including grey mullet (<i>Mugil spp.</i>), common pandora (<i>Pagellus erythrinus</i>), Sea bream (<i>Sparus aurata</i>), Dentex (<i>Dentex dentex</i>), white group (<i>Epinephelus aeneus</i>), goldband goatfish (<i>Upeneus molluccensis</i>), common octopus (<i>Octopus vulgaris</i>), two-banded sea bream (<i>Diplodus vulgaris</i>), european hake (<i>Merluccius merluccius</i>), Barracuda (<i>Sphyræna sp.</i>), goldblotch grouper (<i>Epinephelus costae</i>), common sole (<i>Solea solea</i>), caramote prawn (<i>Penaeus kerathurus</i>), Randall's threadfin bream (<i>Nemipterus randalli</i>)
Commercial fishing gears involved	Trammel nets, gillnets, longlines, purse seines (only two in limited areas of MPA)
Areas involved	Gökova MPA

3. Preparation of the Management Plan

The management plan was developed under the auspices and technical support of the FAO-EastMed Project, following the Ecosystem Approach to Fisheries (Ünal et al., 2016; FAO, 2003; FAO, 2012). The process leading to the development of the plan was coordinated by an EAF team composed of representatives from the MFAL, FAO-EastMed, Local Fishery Cooperatives, Mediterranean Conservation Society, Ege University-Faculty of Fisheries, Dokuz Eylül University-Institute of Marine Science and Technology, Muğla University-Faculty of Fisheries (Annex 1).

The management plan was developed through extensive background research and a series of stakeholder consultation workshops where all the stakeholders have shown intensive attention and contribution to the preparation process of the FMP.

The first Stakeholder Meeting was held at Yücelen Hotel in Akyaka on February 19-20, 2016 (EAF Project – WS 1, 2016) to introduce the project and the EAF concept to key stakeholders and to initiate the first set of discussions regarding the SSF management. In addition, an informal EAF team was created comprising representatives of the small-scale fishers and other relevant stakeholders to attend future stakeholder consultations.

A draft EAF Baseline Report (EAF-BR) for the SSF was prepared with a synthesis of all available information on the socioeconomic, environmental and institutional aspects of the fishery that were considered relevant for the development of the management plan. The draft EAF-BR was presented and discussed with the relevant stakeholders in the Stakeholder Meeting held at Yücelen Hotel in Akyaka on March 15-16, 2017 (EAF Project – WS 2, 2017). Relevant inputs were then duly incorporated in a final EAF-BR (EAF Project – EAF-BR, 2016).

Then, on May 10-11, 2017 an “Issue Identification and Prioritization Workshop” was held at Yücelen Hotel in Akyaka (EAF Project – WS 3, 2017) with the objective to identify the issues affecting the sustainability of the fishery in relation to ecological wellbeing, social and economic wellbeing and governance aspects. The workshop also assessed the risks associated to each issue, with a view to identify priority areas for future interventions that would contribute to sustaining marine harvestable resources and improving the well-being not only SSF but also the purse seine fishing community. The meetings resulted in 110 issues identified under the EAF component ecological wellbeing, social and economic wellbeing and ability to achieve. After the risk assessment process 67 of these issues were categorized as low, 12 medium and 31 high (**Hata! Başvuru kaynağı bulunamadı.**).

Table 5. Risk level of the issues that categorised after risk assessment

Risk Level	Ecological Wellbeing	Social and Economic Wellbeing	Ability to Achieve	Total
Low	51	6	10	67
Medium	4	4	4	12
High	16	7	8	31
Total	71	17	24	110

A fourth “Stakeholder Meeting” was held at Yücelen Hotel in Akyaka on June 22, 2017 (EAF Project – WS 4, 2017) to gather elements for the development of management systems for high priority issues previously identified. Thus, for each high priority issue, the following elements were defined: Operational objectives, Indicators, Performance measures, Data requirements, Current management practices and Future management measures. Attendees were divided into the three thematic groups and activities were determined for each theme. Results represented the cornerstone for the elaboration of the current management plan.

Draft management plan presented and proceeded to a vote to the participants at the fifth Stakeholder Meeting on March 16, 2018 (EAF Project – WS 5, 2017). After getting contributions and discussions, the draft plan proceeded to a vote participants gave unanimous acceptance. Thereafter further steps reminded (e.g. establishment of an. “Advisory Committee of Fisheries Management” (ACFM) and the point that MFAL is the responsible implementing the plan, was emphasized.

4. Objectives of the Management Plan

The management plan is a document that sets the framework for the sustainable management of the small-scale fisheries at Gökova MPA following an ecosystem approach to

fisheries. The management plan aims to provide guidance to decision-makers, fishers' cooperatives, syndicates and fishers themselves on the main priority issues affecting the sustainability of the fishery and the best course of action to address them. Furthermore, it aims to facilitate cooperation and communication among different relevant stakeholders and beneficiaries of the fisheries resources.

4.1. Vision

A well-managed and sustainable small-scale fishery for the ecological, social and economic wellbeing through the guiding principle of the Code of Conduct for Responsible Fisheries and its application by the development of an EAF management plan.

4.2. Management objectives

The management plan is divided into three interconnected thematic areas: ecological wellbeing; social and economic wellbeing; and the governance and external drivers affecting the ability of the fishery to achieve these ecological and socioeconomic objectives (ability to achieve). The objectives set out for each of these thematic areas are:

Ecological wellbeing: To restore and maintain health of the fish stocks and the sustainability of marine resources

Social and economic wellbeing: To improve the socioeconomic wellbeing of fishers and communities at local and national level through the protection of stakeholders' rights, food security and revenue.

Ability to achieve: To ensure that legislation, regulations and arrangements remain relevant and aligned with the management objectives, are periodically reviewed in consultation with relevant stakeholders, are designed to enhance the resilience of the fishery to external impacts, and that collectively they cover as many of principles of good governance as possible. Establishment of a formal Committee to oversee the progress and difficulties of implementation of the plan and to suggest pertinent amendments and changes to it.

5. Management Systems

The management plan covers a wide range of high risk issues and opportunities that reflected the wide intersection between users and interests. Given the wide range of issues forwarded by stakeholders, it was agreed by all concerned parties to develop a management system for the issues of high risk only. The remaining issues, considered of low and medium risk, were documented (EAF project – WS 3 Report, 2017), and shall be revisited in the future when the management plan is revised.

The high risk issues and associated activities were structured into the three main thematic areas: ecological wellbeing; social and economic wellbeing; and ability to achieve (Table 6, Table 7, Table 8). For each high risk issue, the management plan identified:

Issues and the respective:

Operational Objectives: Objectives that have practical interpretation and describe the expected outcome of the management interventions.

Indicators: Estimates (qualitative or quantitative) that are measured and used to track the achievement of an operational objective.

Performance measures: Estimates (qualitative or quantitative) of the levels of the indicators that are considered desirable and/or acceptable within the time frame of the management plan.

Recommended Future Management Practices: Potential management options that could be implemented to address the issue and achieve the desirable level of performance in the most practical and appropriate way. Considering that many of the high risk issues and operational objectives are cross-thematic, and with a view to facilitate implementation, the potential linkages among issues are identified.

Main partners: MEU, MFAL, Governor of Muğla, Muğla Metropolitan Municipality, Local Fishery Cooperatives, Coastguard, Universities, NGOs.

Detailed responsibilities, budgets, and timelines will depend on the time of implementation of the actions in the current management plan. These actions can either be addressed individually or as part of a comprehensive implementation plan.

Table 6. Thematic area: Ecological Wellbeing

Issues of high risk	Operational Objectives	Indicators	Performance Measure	Data requirements	Current management measures	Recommended Future Management Practices	Main Implementing partners
High fishing pressure during breeding season threatens biological sustainability of <i>Lichia amia</i> stock	Reduce fishing pressure during reproductive period of <i>Lichia amia</i> .	Number of mature fish greater than minimum landing size cm in the landings.	Reduce the number of spawning specimen caught in the landings	Length of fish and catch data in breeding season. Gonad somatic data.	Minimum landing size: 40 cm Seasonal prohibition: between 15 April-15 May Keeping fishing nets for leerfish in the sea between 07:00- 19:00) in Gökova Bay is prohibited.	Preventing fishing nets targeting this species in the breeding season has to be determined. Adjustments in the timing of seasonal prohibition specified to the Gökova area	Ministry of Food Agriculture and Livestock, cooperatives, Universities
Rapid expansion of puffer fish causing ecological disruptions and economic losses to fishers	Reduce the impacts of puffer fish on small scale fisheries.	Damage to the fishing gears. Number of pufferfish in catch. Visual census of puffer fish occurrence in Gökova area.	Decrease damage on fishing gears 10% every year. Decrease in amount and size of puffer fish in the catch.	Number of hooks and nets destroyed. Amount of pufferfish in the bycatch. Fishery independent data from visual census.	Catching, landing and marketing pufferfish are prohibited according to the Fishing Notification	-To consider outcomes of the project run by MFAL -Implement measures to control the expansion of pufferfish, including targeted (culling) purse seine and small scale fishery during breeding season. -Increase the NFZs to protect the predators of pufferfish.	MFAL
Illegal fishing, specially spear fishing, affecting negatively the stocks and fishers' income	Stop illegal fishing activities through stronger enforcement of existing rules.	Number of inspections per year Number of infringements	Minimum number of inspections (e.g. 100) per a year at restaurants, markets and at sea	Inspection reports	Fishing notification No: 4/1 and 4/2 -Existing illegal fishing data that Mediterranean Conservation Society have.	-Improving the enforcement by giving responsibility to fishery cooperatives and NGOs / to develop a comprehensive and practical surveillance system	MFAL, coastguard, municipalities

Lost and abandoned dentex fishing nets impacts on the ecosystem	Reduce the number of abandoned and lost fishing gears	Number of fishing nets retrieved per year. Number of reported lost nets by fishers	Decrease in number of fishing nets retrieved per year and in the number of reported lost nets.	Number of fishing nets retrieved per year by NGOs, MFAL. Interview data with fishers about number of lost nets	Lost and abandoned net cleaning project operated by MFAL and MFAL Lost and abandoned net reporting system.	-Periodically carry out project to retrieve the nets. -Research alternative fishing gears for <i>Dentex dentex</i> - Preparing public service broadcasting	MFAL, NGOs, cooperatives
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Table 7. Thematic area: Social and Economic Wellbeing

Issues of high risk level	Operational Objectives	Indicators	Performance Measure	Data requirements	Current management measures	Recommended Future Management Practices	Main Implementing partners
Poor of valorization (low price) of fish produced locally and unfair competition with imported fish affecting negatively fishers' income level	Enhance the valorization of locally produced fish.	Price of locally produced fish. Fisher's income from fishing. Promotional material produced to increase consumers	Increase in the value of local fish. Awareness raising material (leaflets, posters) produced and disseminated among consumers.	Fish price in local markets. Fisher's income from socioeconomic monitoring program.	Traceability origin document	-Assess the value chain to identify bottlenecks and opportunities for enhancing value of fishery products. -Increase the awareness of consumers and better enforcement of traceability. -Increase the visibility and promotion of local fish. -Evaluate options for fish labelling.	Cooperative, municipality, restaurants, MFAL,
Decreased access of purse seiners to fishing grounds threatens the sustainability of this type of fishing	Identify suitable and sustainable options for small pelagic fisheries in Gokova Bay.	Catch composition. Number fishing trips.	Minimal level of catches of small pelagic fish defined based on profitability of the fishery.	Catch records by fishing grounds	Fishing Notification 4/1 includes related regulations: These are closed areas (The area at the east side of the border between Ören Cape (37° 01,055' N – 57° 56.751' E) and Teke Cape (36° 54.410' N –	- Carry out experimental fishing surveys with specifically developed pelagic gear. -Revise current norms concerning the use of purse seines in the area.	MFAL, Coast Guard

					28° 00.921' E) and seasons for purse seiners. -Fishing with purse seiners is prohibited between April 15 and August 31.		
Limited access of fishers to financial assistance and social protection systems	Enhance protection of fishing livelihoods through improved access to social protection and financial mechanisms	Number of fishers with access to social security and other social protection mechanisms	Increase the coverage of fishers by social protection systems	Records of fishers in social security system	There is no specific social security system only for fishers, however, they have access to the governmental social security system in general	-To put new policies, regulations, promotions in to practice to encourage more fishers to enable to access social security system and design specific mechanism of compensation (e.g. bounty system) in specific cases (e.g. pufferfish damages)	Cooperatives, ministry
Lack of interest of new generations in fishing activity affecting the recruitment of crew and the maintenance of fishing traditions.	To promote and make small scale fishing more economically attractive among local youth.	Mean age of fishers Total number of fishers. Number of permanent crew. Income level in the fishery compared to wages in other sectors (e.g. tourism).	Mean age is less than the previous year. Maintain same number of fishers. Increase income level in the fishery.	Demographic data collected through socioeconomic surveys and population census.	There is not any regulations or management measure on this issue	-Increasing the awareness about fisheries traditions in schools. -Implement training actions for the professionalization of fishers. -Implementation of strategies to enhance the valorization of fisheries and income level of fishers. -Implement management plan. -Control access to fisheries by spatial based management. -Enhance access of fishers to social welfare and social protection mechanisms.	MFAL

Table 8. Thematic area: Ability to achieve

Issues of high risk level	Operational Objectives	Indicators	Performance Measure	Data requirements	Current management measures	Recommended Future Management Practices	Main Implementing partners
Shortcomings in the existing legislation regulating fisheries in Gokova Bay	Produce fisheries notifications specific to the Gökova MPA and developed with inputs from local stakeholders	Publication of fisheries notifications	Publishing the fisheries notifications after the management measure has been agreed by the stakeholders and endorsed by the MFAL			Draw up and Submit the respective fisheries notifications to the related administration for evaluation and endorsement. be approved by the stakeholders through the support of FAO	MFAL, Stakeholders
Lack of coordination between relevant authorities (Ministry of Food, Agriculture and Livestock and Ministry of Environment and Urbanisation)	Build up a Advisory Committee of Fisheries Management with representative of local NGOs and managers	Establishment of the committee	Committee meets 3 times a year	Reports from the committee (minutes)	NA, Local Working Group for SEPA	Set-up advisory committee that is endorsed by the ministry	Relevant ministries, municipality
Limited capacity for fisheries monitoring, control and surveillance	Increase the resources for monitoring and control. Establishing the landing sites.	MCS capacity increased. The landing sites.	To increase the MCS capacity. To %100 know the landing sites.	Information to affect structure of the MCS	One boat and one captain, BAGIS, FIS belonging to MFAL, inspectors from MFAL, coastguard, AKD ranger, gendarmerie	-Involve other agencies like the gendarmerie, find a way to allocate for more resources. -Collect data from landing sites, cooperatives and the fish mongers. -To use other agencies to increase the effectiveness on MCS	MFAL, Ministry of Internal Affairs
Habitat degradation due to inadequate spilling of harbour dredging material	To stop dumping the sand from harbour dredging on fishing grounds	Presence or absence dumped material at the fishing grounds	By 2020 no dumped material on fishing ground	Surveys to determine the presence of dumped material	They can dump wherever they want	Designing and determination of dumping sites.	Ministry of transport, Ministry of Environment and Urbanization, municipality, MFAL, Ministry of Culture and Tourism

Limited scope for the participation of local stakeholders in the definition of norms and regulations for fisheries in the Gokova MPA.	Encourage the establishment of participatory approach to management, more sensitive to the needs of local fishers.	Progress made towards the establishment of participatory fisheries management	Norms and regulations applicable to Gokava Bay revised according to inputs from local	Reports of meetings between central administration and local stakeholders	Fishing notification no: 4/1 and 4/2	Establishment of a fishery advisory body, composed of fishery stakeholders, to advise MFAL on the implementation of the management plan and the revision of norms applicable to the area.	MFAL, cooperatives, NGOs, Universities
Limited availability of data (biological and socioeconomic) precludes the adequate monitoring of the status of stocks and the performance of the fishery	Set up a fishery monitoring system to increase the availability of data.	Amount and quality of collected biological and socioeconomic data.	Increase in the amount and quality of collected data	Annually collected catch, ecological and socio-economic data	Current data collection scheme by MFAL and TurkStat. Only one cooperative records data in the area.	-Design fishery monitoring system to obtain data representative of the main fisheries in the area. -Identify means of supporting the data collection, including projects and the involvement of cooperatives. (Akyaka Fishery Cooperative and Mediterranean Conservation Society).	MFAL, cooperatives, NGOs, Universities, AKSAM

6. Implementation and Review of the Fisheries Management Plan

The management of the fisheries sector in Turkey is under the responsibility of the MFAL and as such it is the role of MFAL to ensure the implementation of the management plan. However, in line with the principles participatory fisheries management embedded in the Code of Conduct for Responsible Fisheries and the EAF, the MFAL will seek mechanisms to strengthen the involvement of other stakeholders of the sector in the implementation of the management plan. In line with this, the MFAL can create a specific ACFM to function as consultative body during the implementation of the management plan. The specific composition and terms of reference of the ACFM should be elaborated taking into account the elements described in relevant parts of this management plan.

This FMP for the SSF in Turkey reflects current understanding of the fishery and the resources exploited. It will be improved with advancements in knowledge and management practices. An annual review of the Management Plan is the responsibility of the MFAL but it should be done through Advisory Committee of Fisheries Management in which other stakeholders are counted for their consideration. A full review of the management plan is to be implemented after 3 years from date of endorsement of the current plan.

This plan will be monitored and evaluated annually based on the achievement of objectives through performance indicators presented in Tables 6, 7 and 8. The evaluation will be complemented by the annual monitoring of the status of target species, to be accomplished through a specific technical working group to be established by MFAL.

7. References

AKD, 2016. Promoting the implementation of the EU Common Fisheries Policy in Gökova MPA, EU Project, Mediterranean Conservation Society, Turkey.

Aktaş, N., Menengiç, M., Ünal, İ., Akgül, E., Yapıcıoğlu, M.O., Taşeli, B., 2011. Reflections from the Special Environmental Protection Areas of Turkey. Ministry of Environment and Forestry Environmental Protection Agency for Special Areas, Ankara, 186p.

Bilecenoğlu, M., Kaya, M., Cihangir, B., 2014. An updated checklist of the marine fishes of Turkey. Turkish Journal of Zoology. 38:1-29.

EAF project – WS 1 Report, (2016). First Stakeholder Meeting Report. FAO-EastMed project “The implementation of a pilot case study on the Ecosystem Approach to Fisheries Management in Gökova Bay”, 4p.

EAF project – WS 2 Report, (2017). Second Stakeholder Meeting Report. FAO-EastMed project “The implementation of a pilot case study on the Ecosystem Approach to Fisheries Management in Gökova Bay”, 13p.

EAF project – WS 3 Report, (2017). Third Stakeholder Meeting Report Issue Identification and Prioritization Workshop Report. FAO-EastMed project “The implementation of a pilot case study on the Ecosystem Approach to Fisheries Management in Gökova Bay”, 15p.

EAF project – WS 4 Report, (2017). Fourth Stakeholder Meeting Report. FAO-EastMed project “Introduction and Approval of Ecosystem Approach to Fisheries Management Plan of Small Scale Fishery in Gökova Marine Protected Area”, 13p.

EAF project – WS 5 Report, (2018). Fifth Stakeholder Meeting Report. FAO-EastMed project “The implementation of a pilot case study on the Ecosystem Approach to Fisheries Management in Gökova Bay”, 6p.

FAO, (2003). The ecosystem approach to fisheries, FAO technical guidelines for responsible fisheries. Rome, 112.

FAO, (2005). Putting into practice the ecosystem approach to fisheries. Rome, FAO. 76p.

FAO, (2012). EAF toolbox: The ecosystem approach to fisheries. Rome, 172pp.

GFCM, (2014). GFCM Data Collection Reference Framework. 50 pp.

Göncüoğlu, H., Ünal, V. 2011. Fisherwomen in the Turkish fishery, southern Aegean Sea. J. Appl. Ichthyol. 27:1013–1018.

Gülşahin, A., Kara, A., 2013. Record of *Nemipterus randalli* Russell, 1986 from the Southern Aegean Sea (Gökova Bay, Turkey). Journal of Applied Ichthyology, 29: 933-934.

Okuş E., Yüksek A., Yokeş B., Yılmaz İ.N., Aslan-Yılmaz A., Karhan S.Ü., Demirel N., Demir V., Zeki S., Taş S., Sur H.I., Altıok H., Müftüoğlu A.E., Balkıs N., Aksu A., Doğan E., Gazioğlu C. (2006). Gökova Özel Çevre Koruma Bölgesinin Kıyı ve Deniz Alanlarının Biyolojik Çeşitliliğinin Tespiti Projesi Final Raporu, (Sunulan Kuruluş, T.C. Çevre ve Orman Bakanlığı Özel Çevre Koruma Kurumu Bakanlığı) ISBN:975-8273-91-4

Tirasin, E. M. and Unluoglu, A. 2012. Demersal and deep water fisheries resources in Turkish seas. In A. Toka, A. C. Gc and B. ztrk (eds), “The State of the Turkish Fisheries”. TDAV, Pbl. No: 35, 28-92.

TurkStat, 2015. Distribution of fishery workers by age groups, working time and sea products regions. <https://biruni.tuik.gov.tr/medas/?kn=97&locale=tr> (11.12.2017)

TurkStat, 2004-2009. Fishery Statistics. Turkish Statistical Institute, Prime Ministry, The Republic of Turkey.

nal, V. and Erdem, V. 2009(a). Combating illegal fishing in Gkova MPA (Aegean Sea), Turkey. ek, B.A. and niz, H. (eds). Proceedings of the 3rd International Symposium on Underwater Research, 19–21 March, 2009, Eastern Mediterranean University, Famagusta, Turkish Republic of Northern Cyprus, 125 p.

nal, V., Glusoy, H. and Franquesa, R. 2009(b). A comparative study of success and failure of fishery cooperatives in the Aegean, Turkey. Journal of Applied Ichthyology 25:394-400.

nal, V., Erdem, M., Gncoėlu, H., Glusoy, H., Tosunoėlu, Z., 2009(c). Management paradox of groupers (Epinephelinae) fishing in the Gkova MPA (Eastern Mediterranean), Turkey, Journal of Food, Agriculture & Environment, 7(3-4):914-917.

nal, V., 2010. Fishery Management in Gkova Special Environment Protection Area. (In Eds. Kır, C.O. and N.O. Verryeri with contributions by H. Glusoy and S.D. aėlayan. “Putting PEEN to Practice in Marine and Coastal Areas; Gokova Integrated Coastal and Marine Management Planning Project” Final Report (submitted to BBI Matra, the Netherlands.) 31 October 2010. SAD-AFAG, Ankara. 92 p.+Annexes.

nal, V., Franquesa, R, 2010. A comparative study on socio-economic indicators and viability in small-scale fisheries of six districts along the Turkish coast. J. Appl. Ichthyol. 26 (26-34).

nal, V., Gncoėlu, H., 2012. Fisheries management in Turkey. 263-288 pp. A. Toka, A.C. Gc, B. ztrk [eds.], The State of The Turkish Fisheries, Turkish Marine Research Foundation. Pub. Number: 35, 516 p

nal, V., Yıldıırım, Z.D., Tıraşın, E.M., (2016). Ecosystem Approach to Fisheries Baseline Report. FAO-EastMed project “The implementation of a pilot case study on the Ecosystem Approach to Fisheries Management in Gkova Bay”. 84p.p.

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- 6) Mediterranean Conservation Society
- 7) Akyaka Fishery Cooperative
- 8) Akçapınar ve Havalisi Fishery Cooperative
- 9) Sarnıç-Akbük Fishery Cooperative
- 10) Marmaris Fishery Cooperative
- 11) Göcek İnlice Fishery Cooperative
- 12) Non-cooperative member fisher-Independent fisher
- 13) Central Union of Fishery Cooperative Associations (SÜR-KOOP)
- 14) FAO-EastMed
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2nd meeting of the stakeholders
To develop a management plan for the small scale fishery in accordance with the Ecosystem Approach to Fisheries
15 - 16 March 2017
Gökova MPA
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4th meeting of the stakeholders To develop a management plan for the small scale fishery in accordance with the Ecosystem Approach to Fisheries 22 June 2017, Akyaka Gökova MPA Turkey							
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5th meeting of the stakeholders
To develop a management plan for the small scale fishery in accordance with the Ecosystem Approach to Fisheries
16 March 2018, Akyaka
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