



MedMPAnet project

SOCIO-ECONOMIC STUDY FOR THE SALLUM MARINE PROTECTED AREA IN EGYPT



Environics UAE
Environment & Development Advisors



Sallum MPA
محيطات سالوم



PARKS EGYPT

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Published by: RAC/SPA

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For bibliographic purposes, this volume may be cited as:

RAC/SPA - UNEP/MAP, 2015. Socio-economic study for the Sallum Marine Protected Area in Egypt. By Hanaa EL GOHARY and Mahmoud FOUAD, Environics, Environment and Development Advisors. Ed. RAC/SPA - MedMPAnet Project, Tunis: 58 p + annexes.

Layout: Zine El Abidine MAHJOUB and Asma KHERIJI.

Cover photo credit: RAC/SPA, EEAA, Environics.

Photos credits : RAC/SPA, EEAA, Environics.

This document has been elaborated within the framework of the Regional Project for the Development of a Mediterranean Marine and Coastal Protected Areas (MPAs) Network through the boosting of Mediterranean MPAs Creation and Management (MedMPAnet Project).

The MedMPAnet Project is implemented in the framework of the UNEP/MAP-GEF MedPartnership, with the financial support of EC, AECID and FFEM.



SOCIO-ECONOMIC STUDY FOR THE SALLUM MARINE PROTECTED AREA IN EGYPT

MedMPAnet project

Regional Project for the Development of a
Mediterranean Marine and Coastal Protected
Areas (MPAs) Network through the boosting
of MPA creation and management

Study required and financed by:

MedMPAnet^{project}

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Reference of the study:

Contract n° 02/MedMPAnet/2015

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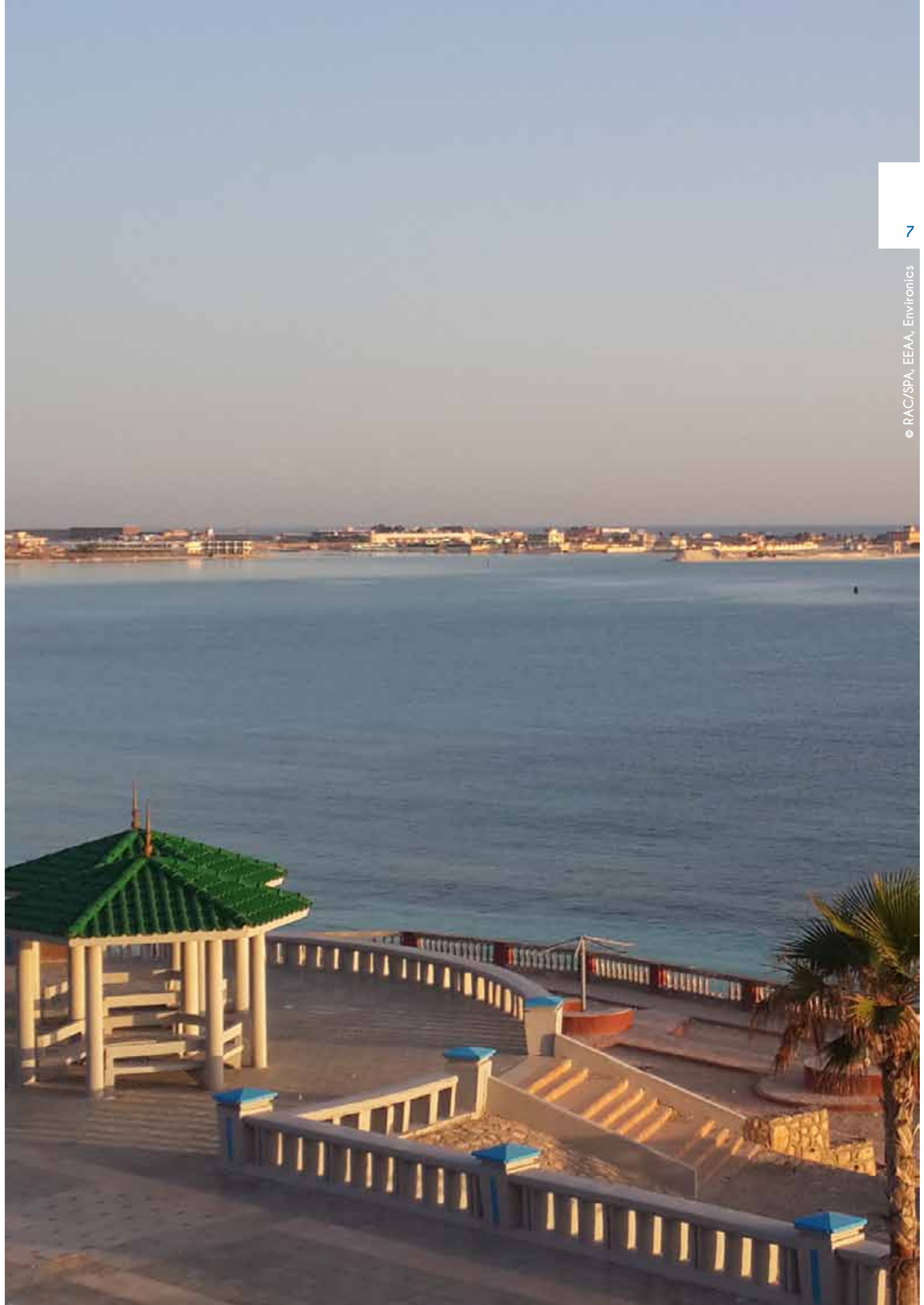
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LIST OF ABBREVIATIONS

AECID	Spanish Agency for International Cooperation to Development
BOT	Build Operate Transfer
CAPMAS	Central Agency for Public Mobilization and Statistics
CBOs	Community Based Organisations
EC	European Commission
EEAA	Egyptian Environmental Affairs Agency
FFEM	French Global Environment Facility (<i>Fonds Français pour l'Environnement Mondial</i>)
FGDs	Focus Group Discussions
GAFRD	General Authority for Fisheries Resources Development
GEF	Global Environment Facility
GOPP	General Organization for Physical Planning
IUCN	International Union for Conservation of Nature
KIIs	Key Informant Interviews
MAP	Mediterranean Action Plan
MedMPAnet	Regional Project for the 'Development of a Mediterranean Marine and Coastal Protected Areas (MPAs) Network through the boosting of Mediterranean MPAs Creation and Management' executed by RAC/SPA
MPA	Marine Protected Area
NGO	Non-Gouvernement Organisation
NCS	Nature Conservation Sector
PAPs	Protected area Affected Persons
PRA	Participatory Rapid Appraisal
RAC/SPA	Regional Activity Centre for Specially Protected Areas
RBO	Regional Branch Office
SAP BIO	Strategic Action Programme for the Conservation of Biological Diversity
SPA/BD	Barcelona Convention Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean
UNEP	United Nations Environment Programme
UNDP	United Nations Development Programme





EXECUTIVE SUMMARY

The main objective of this assignment is to carry out a socio-economic assessment of Sallum Marine Protected Area and local community of Sallum City. The assessment is based on literature review for the different livelihoods and assessing its social aspects, in addition to field visit to Matrouh and Sallum to meet with the stakeholders and local community. Also, the assessment is aimed to provide guidance to MPA management and stakeholder engagement. The description and assessment of the socio cultural and institutional context in the local community of Sallum will help the development of socially sound action plans and implementation mechanisms.

Methodology used was Participatory Rapid Appraisal (PRA). It was used to bridge the gap in understanding between those who shape development efforts and those whose lives are affected by such efforts.

A total of 17 Key Informant Interviews (KIIs) were conducted with key primary and secondary stakeholders in Sallum and Marsa Matrouh City; these were mainly local officials and natural leaders, Head of Sallum City Council, Urban Development Department, Planning Department, fishermen, birds' hunters, farmers, grazers, and Border Army.

A total of 2 Focus Group Discussions were conducted with two groups of fishermen and fishermen representatives, e.g., Head of Fishermen Association and Fishermen Sheikh. The two group discussions were hosted by a local leader who is also engaged in fishing.

Qualitative data analysis involved a number of activities, i.e., taking notes of meetings and interviews, writing up discussions, analysing qualitative content, coding, filling, and using quotations. Annex II provides Focus Group Guide of Fishermen and Seasonal Activities Calendar.

Sallum center (Markaz) and City is affiliated to Marsa Matrouh Governorate, which is located to the West of Alexandria Governorate on the Egyptian Border with Libya and is the closest Egyptian harbour to Europe. Sallum is a small city with total population of 18000 people in 2015 and total area of 600 km². In broad terms, it is a small town with many spaces between residential areas. Roads are mostly medium wide and paved. Buildings in the down town vary in height and design.

Most of the residents in Sallum have socio economic and socio cultural dealings with the Mediterranean. The community of Sallum constitutes of two main groups:

Bedouins and incomers/ resident. Bedouins are affiliated to two main tribes: El Qotaan and El Haboun. Few other resident Bedouins come from other tribes: El Gomayeaat, Awlad Ali, El Samallouz, El Mahafeez, El Komayelat, and El Shohayebat.

People in Sallum live in poor conditions compared to regional and international standards. The city lacks most infrastructure and social services.

Sallum MPA was declared in the 27th of February 2010 as the first MPA on the Mediterranean in Egypt, in accordance to the Egyptian law for natural protectorates (102/1983) by prime ministerial decree no.533/2010 upon the request of the minister of State for Environmental Affairs. The area declared was 383 Km², which was less than what was proposed as the western side was not included due to security reasons; the protected area is mainly offshore with a coastal area covering the first 500 m of the coast along 45 km on coastline.

The scale of fisheries in Sallum and in the MPA is very limited. After discussions, it is confirmed that the total number of registered fishermen reached 90 people out of total population of Sallum city. There are a total of 20 fishing boats; 10 motor boats and 10 smaller feluccas.

Within Focus Group discussions, it was explained that the catch is decreasing day by day. Within the discussions about fishing seasons and fish catch, it was made clear that in the high season, the average of fish catch can reach 10 kg per boat per day; the minimum is 2 kg for small boats and the maximum is 20 kg for bigger boats. It is established, that up to 100 kg per boat per day is consumed locally in Sallum; the excess is sent out to Marsa Matrouh and Alexandria.

The commercial fishermen of Sallum targeted a range of marine species, including grouper (by 71 % of fishermen), bream (48 %), tuna (42 %), mullet (39 %), goatfish (32 %), squid (32 %), rock bass (29 %), puffer fish (26 %) and hammer-head shark (19 %) as well as other species. All fishermen fished for at least 2 species. Most fishes were caught using nets (58 %), hand-lines (26 %), and trawling or traps (pots) (16 %). One fisherman used a spear-gun exclusively (3 %). Most fishermen always fished from a boat (77 %).

During various meetings with fishermen and local authorities, many of issues were brought up regarding fishing and livelihood challenges such as water pollution, fishing by dynamite, closing fishing during the night, lack of maintenance and over fishing until 2010 by trawlers.

Migrant birds' hunting is mainly a seasonal hobby not only for livelihood. The season of hunting extends between June and October. Few people in Sallum take hunting as a secondary livelihood; they sell the catch, especially quail to earn extra income. Though, very few others sell the rare species of falcons to Arab princes in the Gulf for huge amounts of money.

Traditional activities in Sallum include :

- (i) grazing animals such as sheep, goats, cows and camels ;
- (ii) the cultivation of watermelon, black grapes, figs, olives, cucumber, tomatoes, wheat, and barley ;
- (iii) handicrafts such as water or milk containers made from goats hide and (internal) tents and rugs woven from sheep and goats wool; and
- (iv) trading using camels for transportation or – more recently - modern highways.

Much of the population of Sallum is living in an impoverished state by international standards. Sallum lacks many social services and infrastructure, and those that do exist are of poor quality.

It was confirmed that the City of Sallum needs a development plan for local development and in particular a plan for tourism development. However, the Head of Sallum City stated the development for the City is mainly related to infrastructure and social services. First priority is the extension of electricity networks for main and internal lines, and the establishment of low voltage transformers. Second is meeting the needs of local residents for adequate potable water through the establishment of natural water reservoir tanks and increasing the capacity of water desalination plants. Third is the extension of inner roads to improve the accessibility to villages and remote hamlets. This is followed by the improvement of local services and the local physical environment, in terms of: solid waste management, health care services, and education.

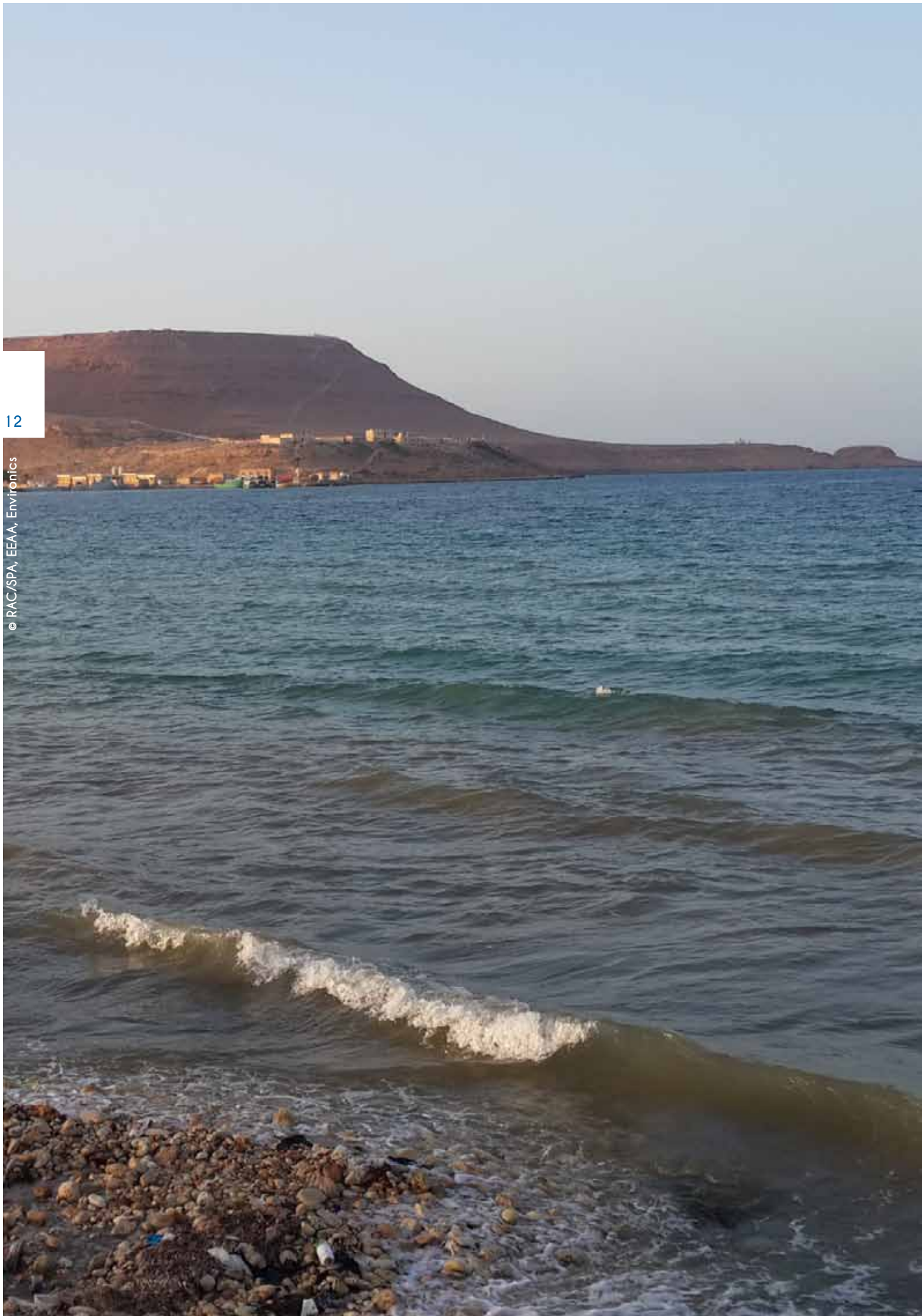
According to Egypt State Information Year Book 2006, Sallum used to receive up to 7,000 tourists in winter and up to 10,000 in summer out of a approximately 8 million visitors Egypt each year. Most visitors to the Sallum region come from the Arabic west countries (e.g. Libya, Tunisia, Algeria and Morocco) as well as from Germany, Italy, USA, and the UK.

The potential for tourism in Sallum can be numbered as natural beauty that is not yet discovered, recreation tourism including beach tourism, swimming, snorkelling, diving and boat riding in the gulfs, desert tourism in terms of camping and safari in the open desert, bird watching and historical and archaeological tourism.

The Main recommendations:

- It is highly recommended to take some corrective actions and activities to rectify the situation as is today such as; operating the MPA office as soon as possible to facilitate the consultation and awareness raising activities, a communication strategy including a stakeholder engagement plan and a Proposals/ complaints mechanism be developed , package of training and awareness raising activities be designed and coordination activities on the national and regional level be designed for mutual transfer of experience.
- Livelihood enhancement and community development include; livelihood enhancement for fishermen in the MPA, creation of alternative recreational activities for bird hunting and community development initiatives.
- The description and assessment of the socio cultural and institutional context in the local community of Sallum helps the development of socially sound action plans and implementation mechanisms. This includes; Stakeholder identification and engagement, Proposals/ complaints management and Institutional arrangements.





1. INTRODUCTION

The Regional Activity Centre for Specially Protected Areas (UNEP/MAP-RAC/SPA) has received the financial support of the European Commission (EC), the Spanish Agency for International Cooperation to Development (AECID) and the French Global Environment Facility (FFEM) to implement a Regional Project for the Development of a Mediterranean Marine and Coastal Protected Areas (MPAs) Network through the boosting of MPA Creation and Management (MedMPAnet Project).

The MedMPAnet project is part of the UNEP/MAP-GEF MedPartnership “Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem”. This partnership enables a coordinated and strategic approach to catalyze the policy, legal and institutional reforms, and the investments necessary to reverse the degradation trends affecting this unique large marine ecosystem, including its coastal habitats and biodiversity.

The objective of the MedMPAnet project consists of enhancing the effective conservation of regionally important coastal and marine biodiversity features, through the creation of an ecologically coherent MPA network in the Mediterranean region, as required by the Barcelona Convention’s Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol). This will effectively expand the existing network of MPA managers in the Mediterranean to include the rest of the Mediterranean and assist the partner countries to implement the prioritized elements of the Strategic Action Programme for the Conservation of Biological Diversity in the Mediterranean Region (SAP BIO) through the provision of a series of enabling activities at national, sub-regional and regional levels. The twelve following Mediterranean riparian countries are beneficiaries of this Project: Albania, Algeria, Bosnia & Herzegovina, Croatia, Egypt, Lebanon, Libya, Morocco, Montenegro, Lebanon, Tunisia and Turkey.

Objective of the study

The main objective of this assignment is to carry out a socio-economic study of Sallum Marine Protected Area and local community of Sallum City. The social study objectives are summarized as follows:

- Literature review for the fisheries knowledge and description of fisheries in the area, and assessing its social aspects ;
- Describe socio cultural, historical and political context in which the area operates. It will include demographic changes; patterns of assets ownership and livelihoods; and political and economic local environment ;
- Assess local constraints and opportunities, as well as local interests in the study area to mitigate potential conflicts among different social groups, and/or any particular impact on local livelihoods is a main concern in this study ;
- Assess potential opportunities and constraints for local development and tourism development in Sallum ;
- Consult different affected groups to reach various options of livelihood enhancement and community development ;
- Identify key stakeholder groups that will affect and/or be affected; and likely stakeholder participation, in terms of roles, constraints and opportunities ;
- Appraise expected social development outcomes and proposed actions to maximize positive impacts while minimizing social risks. Social risks or adverse impacts on vulnerable groups in adjacent local communities are identified to propose mitigation actions in order to ensure the compliance with World Bank Safeguard Policies ;
- Provide guidance to MPA management and stakeholder engagement. The description and assessment of the socio cultural and institutional context in the local community of Sallum helps the development of socially sound action plans and implantation mechanisms.



2. REVIEW OF LITERATURE

Two major socio economic studies were conducted at Sallum area during 2007 and 2012 respectively. Marshall (2007) was the first to study the impacts of socio economics on the proposed Marine Protected Area, and her results contributed significantly to the establishment of the Sallum marine protected in 2010. Results have shown that the marine ecosystem adjacent to Sallum is recognised for its high biodiversity and the valuable marine resources supported by its important habitats, including deep sea-grass beds. Sallum is close to the border with Libya, and is the closest Egyptian port to Europe. In 2015, the region supports approximately 18,000 residents, many of whom have cultural, social or economic links with the marine environment. Traditional economic activities in the region are farming of market produce, grazing livestock, hunting game animals, handicraft production and trading. More recently, employment opportunities have expanded to include government services, small businesses, smuggling and fishing. Tourism is another new, and still relatively minor, component of the economic activity of the region.

Commercial fishermen were one of the main users of marine resources in the Gulf of Sallum. They use nets, hand-lines and traps to catch a variety of marine species, including grouper, bream, tuna, mullet, goatfish, squid, google-eye, puffer fish and hammerhead shark. Fishermen operate in groups, mostly from boats 5-15 m in length. Most fishing activity occurs in two main fishing seasons (March-April and September-October), and tends to be spread along the entire Gulf coast, although contained relatively close to shore. Fishermen have good local knowledge, with many spending most of their lives in the industry.

Overall, commercial fishermen are highly dependent on the marine environment for their income, and highly dependent on the fishery industry for their identity and social well-being. Most fishermen are highly attached to their occupation, but around half supplement their fisheries income. Most have children and average 36 years of age.

Most fishermen have always lived in Sallum. The average income from fishing is USD\$ 2145 per annum, with the industry generating USD\$ 66,552 per annum. Most of this money is spent in Sallum, with minor proportions (around 16 %) flowing to Matrouh, Alexandria and Al-behira governorates.

The economic and social components of the resource dependency of commercial fishermen mean that they have generally low resilience to change. However, this study found that their resilience is highly context-specific, dependent on whether change involves adaptation within

the industry (for which they have high resilience), or requires migration to other occupations (for which they have low resilience). The major sources of their vulnerability are their relatively poor capacity to learn, plan and reorganise in the face of change, and their lack of confidence and interest in changing occupations.

Other major marine harvesting was bird hunting. The main hunting season is July-October, during bird hunters use guns and nets to target a wide variety of birds, the majority of which are associated with coastal wetlands. Hunters have a high degree of local knowledge, having been involved in bird hunting for 18 years, on average. Most have always lived in Sallum, but only half are married, reflecting their average age of 23 years old. Mostly, bird hunters spend than less half of their time hunting, being also heavily involved in smuggling, farming and fishing. The average annual income from hunting is USD\$ 1,760, although the median income was only USD\$ 177. This reflects the relatively high proportion of bird hunters who hunt for non-commercial reasons. Bird hunting collectively generates USD\$ 52,832 per annum, most of which is spent in Sallum, with minor proportions flowing to neighbouring towns including Alexandria and Matrouh.

The reliance of bird hunters on coastal wetlands indicates that they are not strongly dependent on marine resources. While this suggests that they are unlikely to be affected by an MPA, any coastal or terrestrial component to a resource protection strategy in the region could have important implications for this stakeholder group. In general, however, the characteristics and attitudes of bird hunters render them relatively resilient to changes that may occur in their ability to access coastal resources.

The Bedouin are the major cultural group, although they are not traditionally a coastal people. Their main dependency on marine resources occurs through minor involvement in the fishing industry (mostly as boat owners, fish sellers or boat builders) and bird hunting. Cultural traditions of Bedouin are a prominent influence on their daily lives, meaning that resource-dependent activities are the exclusive domain of men. Kin networks dominate the social structure and dynamics, while customary “urfi” law dictates behaviour and consequence within the community.

While the Bedouin people generally have low dependence on marine resources, their strong cultural traditions suggest that they are relatively inflexible to change. This renders them potentially vulnerable to any major policy change that affects their relationship with natural resources.

However, their prominent role in the community also suggests that natural resource protection is unlikely to succeed without their support. Despite their relatively low dependency on marine resources of the Sallum region, decision-makers should consider them important stakeholders in any prospective MPA.

The broader community have a relatively low financial dependency on marine resources. However, over half of the community fished recreationally, creating a strong social link with the marine environment. Further, nearly 50% of people rate being by the sea as important and nearly 33% have a relation who is in the fishing industry. Most people spend their entire lives in the area and about half of the population spend every day in Sallum. Community-members most often identify smuggling goods between Libya as their occupation, with retail/hospitality/service industries and small businesses providing other sources of employment.

The diversity of interests within the broader Sallum community and their minimal dependency on marine resources for financial benefit is complimented by a suite of personal characteristics that endow them with a potentially high level of resilience to change such as the implementation of an MPA.

The second study that assessed the socio economics of Sallum area was conducted in 2012, after establishment of the Sallum Marine Protected Area, by IH CANTABRIA (cooperation in the development plan for the integrated coastal zone management between Marsa matrouh and Sallum, funded by the Spanish Agency for International Cooperation). They have provided basic data and described the main components of socio economic activities in Sallum and included: location, length of the coast, total area, population, social groups, illiteracy , cultural heritage, Sallum Protected area, and economic activities. Their findings were in agreement with Marshall Study (2007), however, it provided critical diagnosis that needs to consider in the future plan. It was stated very clearly that Sallum is still under development and need to be urbanized;

illiteracy rate is quite high (22 %); mine fields from World War II is a threat to human being; agricultural education provided by the government is minimum; no long vision or long term plan is drawn from the central Government; limited involvement of local communities in decision making and taking process; insufficient coordination and cooperation among resource managers; insufficient resources for development plans which leads to delay its implementation; development is concentrated to the narrow coastal strip; and education is not directed to the need of each development sector such as fisheries, and agriculture.

Further recent information was obtained from the 11th edition of Egypt Description by Information which was published by the Cabinet in 2014, and also data base of Matrouh Governorate for Sallum region in 2015. It is clear that the population of Sallum area has increased from about 11000 in 2007 to almost 18000 inhabitants in 2015, with an increase of 16.3 %. Number of females exceeds significantly those of males, being 10626 females and only 5217 males with a sex ratio of 2:1 in favour of females. Such information is crucial to enhance socio economic activities. Infrastructure facilities still not sufficient for drinking water, electricity, hospital (only one), education (only 4 preparatory schools), sports, communication, housing ,and NGO (only one). Services provided by the local government still also very limited.

Although the marine and coastal ecosystems at Sallum area still in good conditions with a minimum solid waste as the coast, the socio economic activities have changed dramatically during the last few years due to the political instability in the region, where many smugglings are taking place across the boarder and the marine area. That has led to the prohibition of commercial fishing boats those mostly foreign boats to fish in the region, and also have restricted many other commercial activities such as trade, grazing, agriculture, tourism and bird hunting. There is hope that once political situation becomes stable, the governments will give attention to the proper denvelopment of Sallum area particularly Sallum Protected Area.





3. METHODOLOGY AND APPROACH

Participatory Rapid Appraisal (PRA) is an action oriented approach that does not involve simply data collection by outsiders, but how community members analyse problems and identify solutions. PRA is used to bridge the gap in understanding between those who shape development efforts and those whose lives are affected by such efforts. In addition, PRA is a cross disciplinary and cross sector approach to engage communities in development through interactive and participatory processes. It aims mainly at involving local communities in their own needs assessment, problem identification and ranking, strategy development for implementation and local action planning. It therefore, utilizes a wide range of tools; often during interviews and focus group discussions to elicit spatial, time related and social or institutional data. There is no doubt that most PRA tools can usefully contribute to richer discussions and outputs and can help to ensure the participation of the most vulnerable segments. Approach and methodology of secondary and primary data collection are presented in next sections. Data limitation is also made clear in a separate paragraph for clarification and justification.

3.1 Secondary data sources

This stage engaged a number of activities, as follows:

- Review of maps of study area to locate project site and adjacent local communities to primarily assess local communities adjacent to project sites, and to identify potential sensitive receptors and protected area affected peoples (PAPs) in local communities ;
- Review of available secondary data sources to better understand local socioeconomic and sociocultural environments; these include: study related documents, e.g., technical reports conducted for the MPA, technical reports relevant to study area and local communities, and other academic research studies conducted in respective area ;
- Collect and analyze locally published material obtained during field work in respective communities to better understand the local context.



Figure 1: Sallum MPA boundaries

- Compile and analyze official statistics and reports; these include:
 - UNDP Egypt Human Development Report 2010 ;
 - Report of the Cabinet of Egypt, IDSC, Egypt's Description by Information 2007 ;
 - Report of CAPMAS Population Census and Housing Conditions Census 2006 ;
 - Marsa Matrouh City Council, Information Office, Annual Report 2011.

3.2 Primary data sources

Primary data builds on a number of activities conducted in the field 15-19 May 2015. These include: field visits and transect walks in local communities, Key Informant Interviews, and Focus Group Discussions with key stakeholders and with sensitive receptors in local communities.

Primary data collection for this report would not have been made possible without the generous collaboration of local officials. The Head of Matrouh Information Office at the City Council has provided all possible help and mobilization for secondary data collection. However, local official statistics are not always standardized, figures are sometimes presented on district level, and other times disaggregated on the city level.

3.2.1 Site visits and field observations

Transect walks in local communities and study area help better understand socio economic context of local communities by portraying the interactions between the physical environment and human activities over space and time. They are useful for identifying community's natural characteristics and help gathering information by walking in a line through a cross-section of the landscape. The line extends in many directions to cover major ecological zones. This also helps ensuring the representation of maximum geographical, resource, and socio-economic variations in the community.

It is necessary to do more than one transect, depending on the pattern and diversity of socio-economic structures or the size of the communities. Key informants and community leaders are helpful in this regard; they join some of the walks. General observations are supported by brief and informal (open-ended) interviews focusing on any issue of concern. Compiled field notes and interviews' information help determining challenges and opportunities. In addition, transect walks enable identifying potential positive and negative impacts likely to occur during preparation and implementation in proposed study areas, which may affect local residents. The main transect walk is done by cars to explore existing economic activities and structures on the protectorate from km 9- 42 of the protected area shoreline.



Figure 2: Site Visit

3.2.2. Photography

Photography is also used to enhance participatory methods and reflect community concerns and issues. They also give a better idea of the nature of the local physical environment and livelihood activities to readers. In some places or situations, photos were not made possible because of social sensitivity or security reasons.

3.2.3. Key Informant Interviews

A total of 17 Key Informant Interviews are conducted with key primary and secondary stakeholders in Sallum and Marsa Matrouh City¹; these are mainly local officials and natural leaders, Head of Sallum City Council, Urban Development Department, Planning Department, fishermen, birds' hunters, farmers, grazers, and Border Army (Figs 3-4).



Figure 3: Interview with Head of Sallum City Council



Figure 4: Interview with migrant birds' hunters

3.2.4. Focus Group Discussions

A total of 2 Focus Group Discussions are conducted with two groups of fishermen and fishermen representatives, e.g., Head of Fishermen Association and Fishermen Sheikh. The two group discussions were hosted by a local leader who is also engaged in fishing (Figs 5-6).



Figure 5: Group Discussion with fishermen group 1



Figure 6 (a-b) : Group Discussion with fishermen group 2

⁽¹⁾ See list of Key Informants interviewed in Annex 1.

3.3. Qualitative data analysis

Qualitative data analysis involved a number of activities, i.e., taking notes of meetings and interviews, writing up discussions, analysing qualitative content, coding, filling, and using quotations.

3.3.1. Notes of meetings and interviews

Facilitators while conducting focus group discussions are very alert to what participants are saying. If they have to write everything down at the same time, they are unlikely to be able to give the participants adequate attention. Their full attention had been thinking about probing for further explication or clarification of what is now being said, formulating probes that link current talk with what has already been said, thinking ahead to asking a new question that has now arisen and was not accounted for the guide, and attending to the participants in a manner that communicates to them that they are indeed listening. All this is hard enough, added to that the problem of writing it down. Hence, the process of notes taking decreases the capacity of leading the focus group discussion. It is very constructive that facilitators and note takers also rotate roles among different focus group meetings.

3.3.2. Writing up discussions

Having completed the discussion, transcriptions are studied to start writing up. However, transcriptions are not let to pile up without studying them as they become available. As much time as spent in each meeting is spent immediately for studying and analysing the discussions' material. The writing up process is crucial. It takes about twice as long time as spent in conducting the discussion. Best results came out when note takers write up the transcriptions and not the facilitator; this assures data quality and accuracy. Qualitative data produces a rather large amount of rich material. Before long, a significant data log that needs to be managed is assembled.

3.3.3. Analysing qualitative content

Qualitative content analysis is conceived as a dynamic product of a gradual data generation. Guided by the data being gathered and the topics, questions and evaluative criteria that provide focus; analysis is the fieldworker's derivative ordering of the data. Because analysis is the product of an inductive and emergent process

in which the analyst is the central agent, achieving this order is not simply a mechanical process of assembly line steps. Even though, there were several concrete and even routine activities involved in analysis; the process remains, and is intended to be, significantly open ended in character. In this way, analysis is also very much a creative act. Because the open ended and creative dimensions of the analytic process, a description of concrete operations composing it does not entirely capture what goes on.

3.3.4. Coding

Coding qualitative data is one way of categorizing and sorting data. It helps to label, separate, compile and organise data. In addition it serves to summarise, synthesise and sort many observations made of the data. In this regard, coding itself becomes analysis as it assigns units of meaning to information which can group the flow of raw reality into packages of items related to each other.

3.3.5 Filing

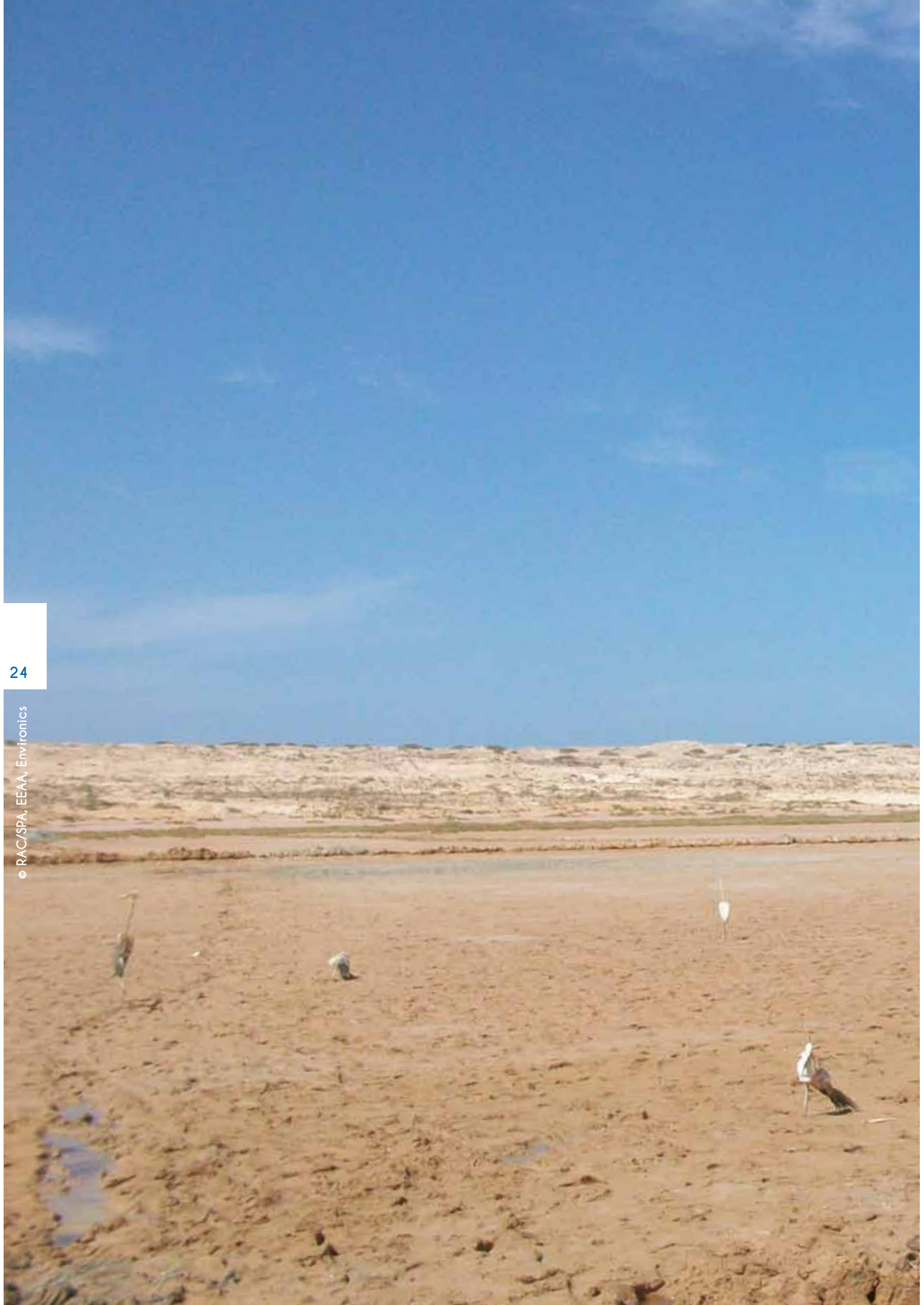
Filing is another way of physical coding, where researchers establish an expanding set of file folders with code names on the tabs, and physically place either the item of data or a note in the appropriate file folder.

3.3.6 Using quotations

Some quotations of interviewees are noted without any editing by the researcher as "insider's own words". This helps understanding many aspects of people's experience in a certain situation, namely:

- Unique perspectives of individuals that reflects and interprets reality ;
- People's experience, important influences and relationships; and group interactions within a specific context ;
- Subjective perspectives and rich knowledge about details that researchers are looking after in their studies ;
- People's adaptive and coping strategies towards stresses and shocks ;
- Vantage point that allows individuals to see things clearer and subjectively across time ;
- Common elements, motifs, and issues that people share though some differences that exist.





4. MARSА MATROUH GOVERNORATE

4.1. The local context

Matrouh Governorate covers the northern part of the Western Desert north of Bahariya Oasis. It extends along the Mediterranean coast from the Egyptian - Libyan border, eastward to just east of the town of El Hammam, a distance of about 450 km. It is located in the Alexandria region that encompasses Alexandria, El Behaira, and Matrouh Governorates. It has a unique location on the Mediterranean

Sea, and a deep rooted history and a promising future. The Governorate covers an area of 166.56 thousand km² representing about 16.5 % of the total area of Egypt. It comprises 8 districts, 8 cities, 56 rural local units annexed by 98 villages and 241 hamlets². According to EHDR 2010, the total population of the Governorate is estimated at 337.4 thousands in 2008 with an annual growth rate of 3.9 % between 1996 and 2008. About 70.4 % of the population lives in urban areas³.



Figure 7: Matrouh Governorate

⁽²⁾ IDCS 2007.

⁽³⁾ UNDP, EHDR 2010.

Within the coastal areas of the Matrouh Governorate, two distinctly different sectors of human population were be recognized. One is the resident population, which generally resides in towns and villages that are permanently occupied throughout the year. The other one is the transient, mostly summer tourist population, which visits coastal resorts during summer months.

Along most of the Mediterranean coastal strip of the Matrouh Governorate, human population density is rather low, and is mostly concentrated in a relatively few, but densely-populated population centers. More than one third of the total population lives in the district of Matrouh, followed by El Dabaa and El Hammam. Less than 3 % of the population of the Governorate lives in Alamein. The average population density in the Governorate is 53 persons per 1 km². It is highest in El Hammam where there are 293 persons per 1 km² and lowest in Matrouh.

Matrouh has a great potential for agricultural development in terms of increase of cultivated areas and livestock breeding depending on water resources from the underground water, floods, torrential rain, and natural springs; in addition to El Hammam Canal. The Governorate is rich in its natural potentials and historical sites which forms great assets to Egypt's tourism future. The coast of Matrouh extends for over 450 km, where most of the beaches are sandy and ripped by calm bays providing a sense of safe aquatic activities, The most famous of these beaches is Ageeba, Cleopatra, Romeel and Boseet. Other tourist attractions include: Marina Monastery, the Mass Graves, the Military Museum, Ramses II Temple in Qum El Rakham, Cleopatra Pool, Siwa Oasis, and the hot sand in that cures dermatoid and rheumatic diseases. Other Environmental potential in Matrouh desert that attract professionals and researchers are rare plant species; there are more than 60 rare species in Matrouh desert along with natural protectorates in El Omayed and Siwa regions⁴.



Figure 8: Ageeba beach

⁽⁴⁾ IDCS 2007.



Figure 9: Cleopatra beach

4.2. Population composition in Marsa Matrouh

In broad terms, the northwest coast displays moderate socio cultural diversity, as people there divide themselves into two main categories, namely: Arabs and Sons of the Nile Valley. A few others with non-Egyptian backgrounds in Sudan, Libya, and other North African countries, and also Greece contributes to the diversity.

Each of the two main categories has multiple subdivisions based on the tribal affiliation for the Arabs, and the length of residence in Matrouh for the Sons of the Nile Valley. The people called Arabs by themselves can be designated as «Bedouins»; however, the term is rarely heard in the northwest coast. Sons of the Nile Valley who are identified as settlers are also called «Immigrants» or «Egyptians» by themselves and others. Missriyin in Egypt and the Arab World denotes citizens of the Arab Republic of Egypt; however, the term has more narrow usages and sometimes refers to either local inhabitants of the Nile Valley (between the Aswan and the Mediterranean) or to residents from Cairo City. In the northwest coast, «Missriyin» refers specifically to the Nile Valley Folk, and does not imply that

Bedouins in the region are not Egyptians. Conversely, the appellation of «Arabs» to the Bedouins and not to others does not mean that the Sons of the Nile Valley and people from other Arab countries are not considered as Arabians in the wider non-Bedouin meaning of the term. In broad terms, there are four main lineages, namely: Awlad Ali, Jumiaat and other Bedouins, Saada and Murabtin, and the Sons of the Nile Valley.

Awlad Ali came from Najd (in the Arabian Peninsula) in the fourth century of the Hijra with the Islamic conquest and the first Arab Muslims. They are affiliated to many clans and predominate numerically and in other aspects of status within the region. Awlad Ali are also the most widely known desert people in Egypt. Many of them have long been settled in various Nile Valley governorates, while others live in eastern Libya. Awlad Ali are descendants of the Beni Sulaim, who first arrived in the region.

The second largest Bedouin component of the people of Matrouh, are the Jumiaat. They are said to be descended from Kaab who was a descendant of the Bani Sulaim. As such, they would be descended from an earlier branch of the Bani Sulaim than the Awlad Ali.

Wide agreement exists that the Jumiaat were present in the northwest coast before the arrival of Awlad Ali; and that they have a very long history of living along the coast in Mariout area and in parts of El Behaira. It is also said that Jumiaat are descendants of Aqqar along with Awlad Ali and Harab, and other times descendants of Khadija a sister of Ali and Harabi. However, many of Awlad Ali deny any connection to the Jumiaat. The Jumiaat themselves agree with the Awlad Ali seniors about their separate descent.

The existence of a division among Bedouins component of the people of Matrouh is a sensitive issue, especially for those categorized as Murabtin. The continuation of this division is also not favored by the Egyptian Government. Saada is the name of a woman widely said to be a descendant of the Beni Sulaim. She is the ancestress of three major groupings of tribes, namely: the Jibarna, the Aqaqra, and the Beni Sallam, which link together with twelve major tribes, including the Awlad Ali. The descendants today live in Libya and in the Egypt in the governorates of Matrouh, Behaira, Alexandria, Gharbeya, Sharqeya, Banu suef, Menya, and Fayoum.

People from the Nile Valley have been involved in the territories of the northwest coast since the days of ancient

Egypt. Many have come temporarily as administrators, guards, traders, and workers. Since the sixties, significant numbers have taken up permanent residents in the region. Those who have settled in Matrouh are a component of its people. Along with a few large camps, the area is full of small encampments of coast guards, border guards, and other military personnel. Some areas have also been set aside and developed as recreational centers and summer holiday facilities for officers and their families. Since the vast majority of Egyptians are from the Nile Valley, it follows that most of the personnel in these camps are Sons of the Nile Valley. There are many women from the Nile Valley who are married to men from families with Bedouin origins.

4.3. Sallum City

Sallum center (Markaz) and City is affiliated to Marsa Matrouh Governorate, which is located to the West of Alexandria Governorate on the Egyptian Border with Libya and is the closest Egyptian harbour to Europe. Sallum is a small city with a total area of 600 km² and total population of 18000 people. In broad terms, it is a small town with many spaces between residential areas. Roads are mostly medium wide and paved. Buildings in the down town vary in height and design.



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Figure 10: Sallum City

Most of the residents in Sallum have socio economic and socio cultural heritage similar to the Mediterranean. The community of Sallum constitutes two main groups: Bedouins and resident. Bedouins are affiliated to two main tribes: El Qotaan and El Haboun. Few other resident Bedouins come from other tribes: El Gomayeaat, Awlad Ali, El Samallouz, El Mahafeez, El Komayelat, and El Shohayebat.

Inhabitants of Sallum live in poor conditions compared to regional and international standards.

The city lacks most infrastructure and social services.

The entire City is not connected to the public sewage network and households use septic tanks for municipal wastewater drainage. Another deficiency is solid waste management system; solid waste accumulations are frequently seen on the streets and the shore. As for social services; there is a total of 3 primary schools, 2 preparatory schools, one secondary, one commercial technical school, and one Azhar institute. In addition to one General hospital and another military hospital.



Figure 11: Physical environment in Sallum



Figure 12: Housing conditions in Sallum

4.4. Sallum MPA

The declaration of the Sallum Gulf as a marine protected area was first proposed by the National Planning System of Protected Areas in Egypt issued in 1998. In November 2008, the International Union for Conservation of Nature (IUCN), agreed to support the preparation of a request for a declaration document for the Sallum Marine Protected Area (MPA) on behalf of the Nature Conservation Sector (NCS) of the Egyptian Environmental Affairs Agency (EEAA). An Egyptian environmental consultancy firm (Environics) was contracted to provide the technical assistance required for the preparation of the declaration document.

The proposed MPA was covering area of roughly 1000 Km² area, mostly an offshore area. The coastal and terrestrial section of the proposed protected area is approximately 80 Km², which has been delineated and identified as a buffer zone to protect the marine environment from land-based activities. The inclusion of a coastal and terrestrial section into the MPA entailed many constraints; land tenure and war remnants being the most notable constraint. Accordingly, it was concluded that the terrestrial section would be reduced at this stage from what was sought for by the NCS pending a change in circumstances allowing its expansion. Sallum MPA was declared in the 27th of February 2010 as the first MPA on the Mediterranean in Egypt, in accordance to the Egyptian law for natural protectorates (102/1983) by prime ministerial decree no.533/2010 upon the request of the minister of State for Environmental Affairs. The area declared was 383 Km², which was less than what was proposed as the western side was not included due to security reasons the protected area is mainly offshore with a coastal area covering the first 500 m of the coast along 45 km on coastline.

The protected area entails unique habitats and geographical features including tidal flats, sand dunes, ridges, salt depressions, and coastal plains; in addition to sensitive marine ecosystems, including sea grass meadows, shallow and intermediate depth marine habitats. The area includes exceptional biodiversity, which is supported by diverse habitats and ecosystems. The landscape-seascape interaction, on the other hand, provides extraordinary scenic views that do not exist elsewhere in Egypt. The diversity in habitats and ecosystems supports many species and species of global concerns. Although natural resources within the proposed area can be considered to be in pristine conditions, pressures and threats on the area are growing due to the rapid rate of development and economic activities. Physical and anthropological impacts resulting from activities such as fishing, hunting, navigation, urban development, and pollution tend to deteriorate the pristine conditions of the natural resources.

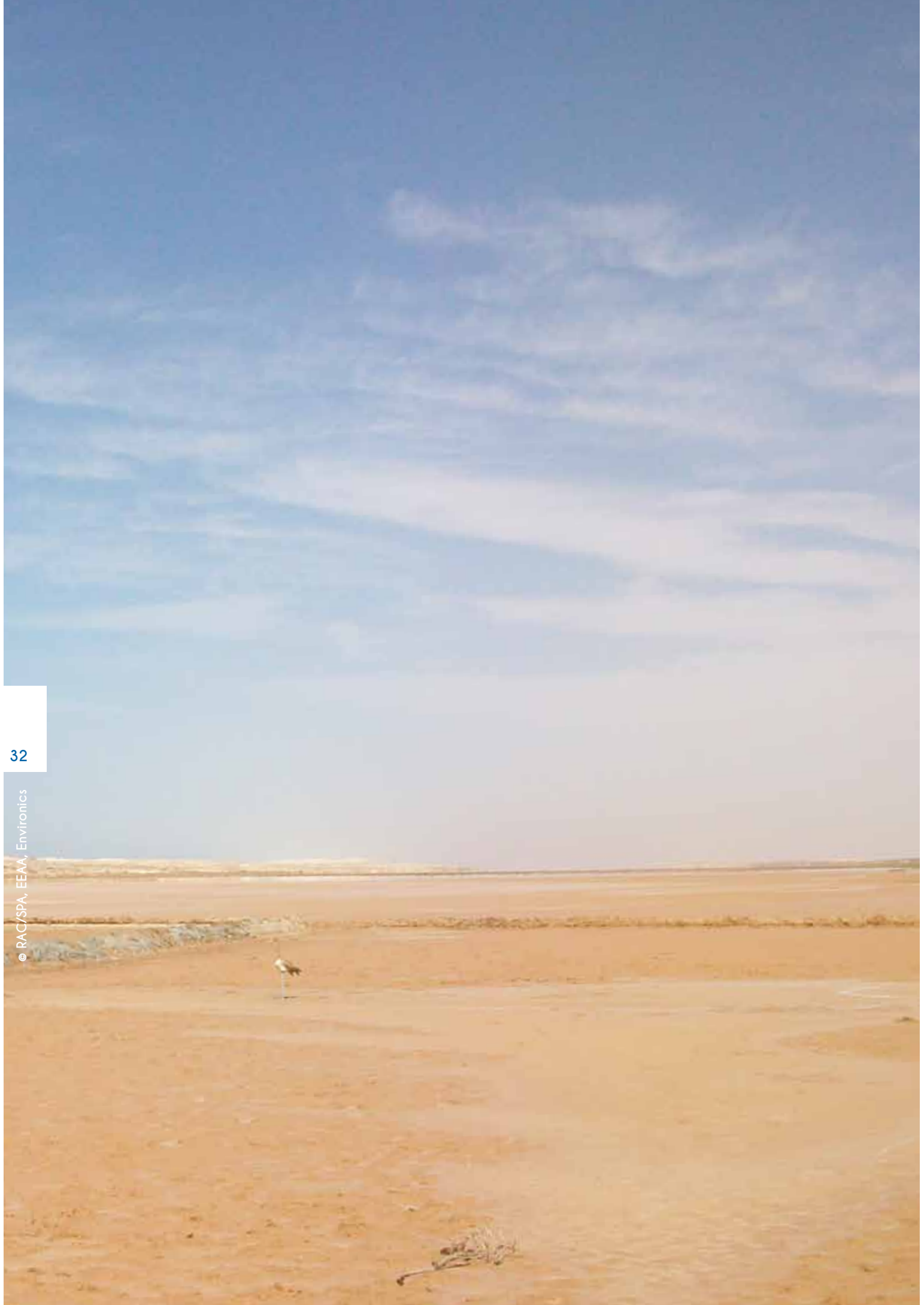
The proposed management scheme of the MPA depends on many strategies of which zoning and community participation are the most appropriate. Three zones have been proposed: core, buffer, and transition. The management plan will delineate the different zones based on biodiversity data, objectives of the MPA, as well as the socioeconomic conditions of local communities. Activities allowed in each zone will follow specific management objectives. Community participation is one of the most important management strategies and tools. The NCS always encourages local community to participate in the planning and management process, especially where there are potential resource conflicts. The South Sinai and Red Sea Protectorates during the last 15-20 years have been involving and supporting local communities. The Sallum MPA will benefit from the experience gained by the NCS in this respect.



Figure 13: During Sallum MPA visit



فندق الوحدة العربية
EL WHDA ARABIA HOTEL



5. LEGISLATIVE FRAMEWORK

5.1. National legislation

By ratifying international conventions and introducing over the years national legislation, the clear intent of the Egyptian Legislator was to protect not only species, but their habitat as well and deal with the social aspects taking in consideration the local communities. The following legislation instruments are of particular relevance, direct and indirect, to nature conservation in Egypt:

- Law 102 of 1983 for Nature Protectorates, providing the legislative framework and managing protected areas in Egypt which are defined as, «any area of land coastal or inland water characterized by special flora, fauna and natural features, having cultural, scientific, tourism or aesthetic value». With growing awareness of importance of managing resource use to sustain development, as well as awareness of rapid environmental degradation, increased attention was given to environmental protection.
- Law 4 of 1994 for the Protection of the Environment which is amended by Law 9/2009, became the primary legislation for environmental management, creating the Nature Conservation Sector for management of Egypt's protected areas.
- Law 124 of 1983 regulating fisheries, forced by General Authority for Fish Resources Development.

5.2. International agreements

Nature conservation and protected areas is very high on the agenda of a large number of international environmental agreements, ratified by Egypt.

These include, most notably:

- **The Convention for the protection of the marine environment and the coastal region of the Mediterranean** (Barcelona, 1976 and 1995), also known as the Barcelona Convention, ratified by Egypt in August 1978. The Convention is complemented by a number of specific Protocols, including the “Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean”. A Regional Activity Centre for Specially Protected Areas (RAC/SPA) was established in Tunis with the mandate of supporting Parties to the Convention in the implementation of the Protocol's provisions. In particular, the Contracting Parties to the Barcelona Convention adopted in

1987 the “Action Plan for the management of the Mediterranean monk seal (*Monachus monachus*)” (UNEP/MAP 2003), and in 1991 the “Action Plan for the conservation of Mediterranean cetaceans” (UNEP/MAP 1991), setting up conservation priorities (prohibition of deliberate taking; prevention and elimination of pollution; elimination of incidental catches in fishing gear; prevention of over-exploitation of fishery resources; protection of feeding, breeding and calving grounds including through the establishment of a network of marine reserves; monitoring, research and data collection and dissemination with regard to biology, behaviour, range and habitats of marine mammals; and educational activities aimed at the public at large and fishermen) and obligations for the Parties. The Mediterranean Action Plan of the United Nations Environment Programme (UNEP/MAP), with headquarters based in Athens, acts as the Secretariat of the Convention.

- **The Convention on the Conservation of Migratory Species of Wild Animals**, also known as CMS or Bonn Convention (Bonn, 1979), ratified by Egypt in February 1982. The Mediterranean monk seal, the fin whale, the sperm whale and the short-beaked common dolphin are listed in the Convention's Appendix I (strictly protected migratory species that have been categorized as being in danger of extinction throughout all or a significant proportion of their range); the same species and striped dolphins are also listed in Appendix II (migratory species which have an unfavourable conservation status and which require international agreements for their conservation and management, as well as those which have a conservation status which would significantly benefit from the international cooperation that could be achieved by an international agreement).
- **The Agreement on the Conservation of Marine mammals of the Black Sea, Mediterranean Sea, and Contiguous Atlantic Area**, also known as ACCOBAMS (Monaco, 1996), a special agreement established under the framework of CMS, its “parent convention”, aimed at the protection of all marine mammal species found in the Agreement area. Ratified by Egypt in June 2010.
- **The Convention on Biological Diversity**, also known as CBD (Rio de Janeiro, 1992), urges Contracting Parties to develop national programmes that will safeguard their natural heritage and biological diversity. Ratified by Egypt in June 1994.



6. LOCAL LIVELIHOODS AND LAND-BASED ACTIVITIES

Information in this section and subsections builds mainly on primary data collected within key informant interviews and focus group discussions and is complemented with field observations and photography.

6.1. Fisheries

Fisheries is a main livelihood activity in Sallum and the MPA. However, it is revealed within FGDs with

fishermen and KIIs with fishermen representatives that the scale of fisheries in Sallum and in the MPA is very limited.

Within discussions, it is confirmed that the total number of registered fishermen reaches 90 people out of total population of Sallum city which is 18000. There is a total of 20 fishing boats; 10 motor boats and 10 smaller feluccas.



Figure 14: Part of the fishing fleet in Sallum MPA

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6.1.1. Fishing boats and equipment

Within discussions and meetings, it is confirmed that the total number of fishing boats is 20. The medium sized motor boats are about 10-11 m long and 2.5-3 m wide, with a horse power varying between 25 and 40 and a capacity of 6 fishermen. These boats can navigate up to 20

km off shore. The smaller feluccas are about 4 m long and 2 m wide with a capacity of 3 fishermen. These boats can only steer on shore. All boats and fishermen are licensed; however due to security and safety purposes, overnight fishing is prohibited for all boats and fishermen. Hence, fishermen can leave the gill nets in the water overnight and collect it in the morning.



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Figure 15: Medium sized fishing motor boats



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Figure 16: Smaller fishing feluccas

The majority of fishermen use gill net for fishing; long lines are used in rocky fishing grounds in a depth of 20-70 meters. The total number of pedestrian fishermen is estimated at 500-600 fishermen along the coast of Sallum city. This number could not be verified during the site visit as no single pedestrian fishermen was seen during the field visit. It is explained that those pedestrian fishermen use long lines for fishing and some of them use also gill nets. The season for pedestrian fishermen does not exceed three months.

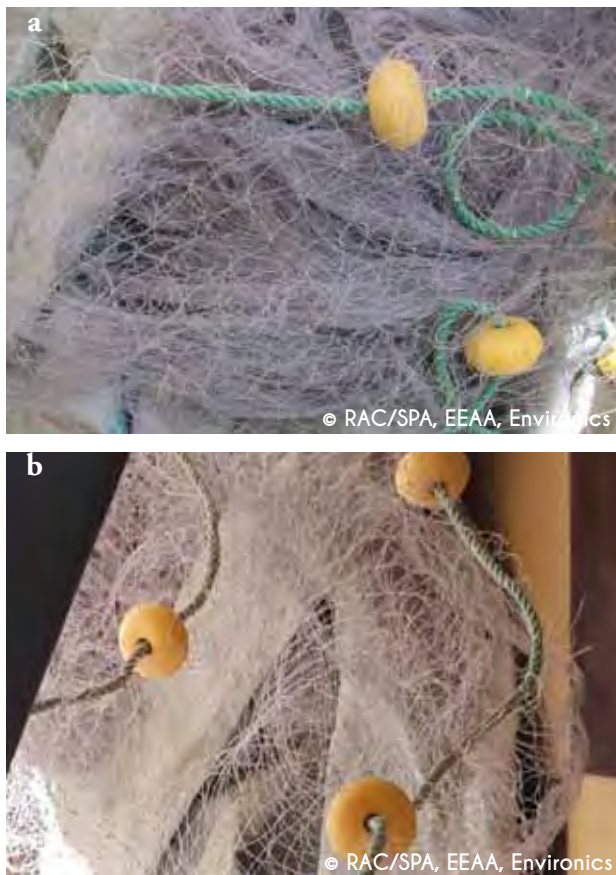


Figure 17: Fishing gill nets used for fishing

6.1.2. Fishing effort

Within focus group discussions, it was explained that in the eighties the fish catch was estimated at 10 tons; 2 t were consumed in Marsa Matrouh and 8 t were sent out to Alexandria. Yet, it is claimed that the amount of «*the catch is decreasing day by day*». Within the discussions about fishing seasons and fish catch, it is made clear that in the high season, the average of fish catch can reach 10 kg per boat per day; the minimum is 2 kg for small boats and the maximum is 20 kg for bigger boats.

However, in the season of Tuna fish migration, the catch can reach a total of 200 kg per day. It is established, that up to 100 kg per boat per day is consumed locally in Sallum; the excess is sent out to Marsa Matrouh and Alexandria. The landing site on the marina and is displayed without ice on large trays, where local fish traders buy directly from fishermen. The minimum price per kg is estimated at LE 10 and the maximum at LE 40 depending on the season and the species of the catch.

The majority of fishermen use gill net for fishing; long lines are used in rocky fishing grounds in a depth of 20-70 meters. The total number of pedestrian fishermen is estimated at 500-600 fishermen along the coast of Sallum city. This number could not be verified during the site visit as no single pedestrian fishermen was seen during the field visit. It is explained that those pedestrian fishermen use long lines for fishing and some of them use also gill nets. The season for pedestrian fishermen does not exceed three months.

Fishermen also explained that the best fish catch was between the years 1985 and 1990, where the catch reached a total of 10 tons per week. Then, after the borders were opened with Libya (1990), trawlers were allowed to come from Alexandria to Sallum and illegal fishermen were also coming from Libya to Sallum. This situation is claimed to have depleted the fish resources in Sallum Bay. Yet after the borders are closed again, no trawlers are allowed to enter the Bay. This information is confirmed during site visits; a total of 4-5 trawlers were seen sequestered in the marina.

The commercial fishermen of Sallum targeted a range of marine species, including grouper (by 71 % of fishermen), bream (48 %), tuna (42 %), mullet (39 %), goatfish (32 %), squid (32 %), Rock bass (29 %), puffer fish (26 %) and hammer-head shark (19 %) as well as other minor species (table1). All fishermen fished for at least 2 species. Most fish were caught using nets (58 %), hand-lines (26 %), and trawling or traps (pots) (16%). One fisher used a spear-gun exclusively (3 %). Most fishermen always fished from a boat (77 %).

Peak fishing months for commercial fishing in Sallum over the 12 months were March and April as well as September and October. The quietest months were June to August which corresponds to winter-time. In any month of the year at least 39 % of the fishing fleet was fishing. Only few fishermen (16 %) operated all year. The main reasons given for the temporal variability were that the fish are seasonal (65 % of responses).

Annex IV provides list of recorded fish species during the period 2003-2007.

Table 1 : Fish targeted by commercial fishermen

Fish	Number of fishermen targeting	Proportion of fishermen targeting
Grouper	22	70.9 %
Bream	15	48.4 %
Tuna	13	41.9 %
Mmullet	12	38.7 %
Ggoatfish	10	32.3 %
Squid	10	32.3 %
Google-eye	9	29.0 %
Puffer fish	8	25.8 %
Hammerhead shark	6	19.4 %
Needle fish	5	16.2 %
Emperor	3	9.7 %
Barracuda	2	6.5 %
Shrimp	2	6.5 %
Lobster	1	3.2 %
Moray eel	1	3.2 %
Octopus	1	3.2 %
Stingray	1	3.2 %
Snapper	1	3.2 %
Sweetlip	1	3.2 %

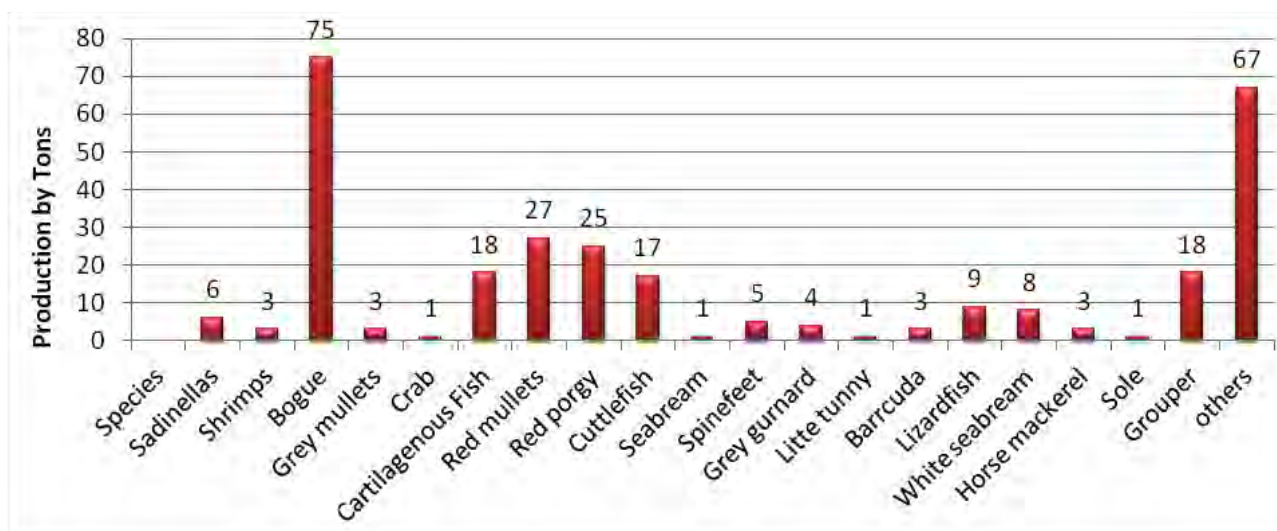


Figure 18: Catch by fish group from the Matrouh landing site 2013

6.1.3. Fishing challenges

Within various meetings with fishermen and local authorities, many issues were brought up regarding fishing and livelihood challenges. These can be listed as follows:

- The pollution of the water way in Sallum Bay, especially nylon bags and aluminium cans rest in the bottom of the water and affect the nutrition of fisheries and may destroy resources .
- Dynamite fishing method kills an important species of dog fish which feeds on the dangerous puffer fish. As a result, this fish reproduces and tears down fishing nets.
- Fishing is prohibited during the night, while fishermen believe that the production is richer during the night because the fish gets easily attracted to the lights in the boats. Border army explained this matter from a security and safety point of view.
- Many essential services are not available in Sallum, e.g., boats' maintenance workshops, ice to preserve the catch in the summer, and nets. Therefore, fishermen have to obtain such services from Alexandria and bear higher expenses.
- The fishermen financial cooperative lacks resources; thus, cannot assist fishermen in improving fishing equipments and materials. However, the cooperative plays a significant role in conflict resolution, if any.
- There is no fishermen syndicate in Sallum to represent fishermen and defend their rights.

- There is no branch office for General Authority for Fisheries Resources Development GAFRD in Sallum.
- Over fishing until 2010 from trawlers come from out of Sallum.

6.2. Migrant birds hunting

Migrant birds' hunting is mainly a seasonal hobby not only for a livelihood. The season of hunting extends between June and September. Few people in Sallum take hunting as a secondary livelihood; they sell the catch, especially quail to earn extra income. Though, very few others sell the rare species of falcons to Arab princes in the gulf for huge amounts of money.

6.2.1. Hunting methods and equipment

Within discussions, it is explained that hobby hunters (about 80-90 % of total hunters) establish horizontal traps with artificial birds to trick migrant birds and use guns to knock the targeted bird. The rest who are mainly targeting quail use vertical traps onshore, where the quail gets entrapped in the net without any effort from hunters. The duration of the hobby hunting trip is usually one week. Hunters go in groups (friends) on the beach and camp there as long as they wish. They take all what they need for shelter and food and spend the time together. Hunters use small huts to hide to anticipate birds before shooting. The total cost of the hobby hunting season is estimated at LE 100 thousand.



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Figure 19: Huts used by hunters to anticipate birds before shooting

6.2.2 Hunting areas and effort

The horizontal trap called 'Bardeya' is a sort of an artificial water basin with artificial birds in it. The size of the basin varies between 50-100 m x50-100 m depending on the preference of the hunter and his financial affordability.

The arrangement of the artificial basin takes in average about one month and can be used for two seasons.

The average cost of the basin is estimated at LE 20-30 thousand depending on the size. About 10-15 persons work on the preparation of the basin for that month. Within discussions with two of them, it is made clear that they take this job as secondary economic activity. Around the year, people like them work in the area of construction in Sallum. Annex III provides list of birds recorded in Sallum MPA.



Figure 20: Trap basins used to attract migrating birds



Figure 21: Preparation of the trap basins 'Bardeya'



Figure 22: Artificial birds used to trick migrant birds

As for vertical hunting traps, it commonly occupies an area of 60 km², where 4 m long tree stalks are fixed with a distance of 6 m between stalks, and then nets are fixed on stalks. Average cost of hunting trap reaches LE 4000; however, equipments can be further used if well stored. Tree stalks and nets are bought locally. For hunting eagles and gazelles, different techniques are used.

Within a meeting with a falcon hunter, it is made clear that there are about 30 different species of falcons. He further described that falcons are smaller in size than eagles, and are dumb. Falcons eat only fresh meat, while eagles eat it fresh, dead, and rotten. The migration season of falcons is between September and November. He also explained that some species of falcons are used to hunt mountain rabbits and curlew birds. In this case, they are sheltered in a room on a stand and are fed pigeons. They get trained during the season for tricking mountain rabbits and curlew birds.

While discussing prices of various species of falcon, he stated that the average price is LE 2000 and 3000; Shaheen falcon ranges between LE 20000 and 30000, while the white falcon can reach LE 1000000 because it is an extremely rare bird to see. He also mentioned that gazelles have not been seen since the year 2000. As for licensing, it is made clear that hunters issue a permit for grazing and use it to go on shore and into the desert for their hunting trips.

As for other quail, it has been explained that hunters use voice machines that imitates the sound of quail to trick the birds. This sound is assumed to trick the entire swarm of birds which reaches 200-300 head. It is also explained that the Houbara Busters is decreasing in numbers, but is still used by Gulf princes for fine food ceremonies. Therefore, a prince from the Gulf area proposed MPA in the western north coast by which the hunting of this bird will be prohibited for five years and a park for the reproduction of Houbara Busters is established. Participants were regretting that such a project is rejected by the government «*It would have been a good opportunity to employ locals by the project on one hand and to reproduce the Bird on the other hand.....*» The MPA could have generated national income using local resources.... and it can be also replicated in other regions». They also mentioned a proposal for an open park for birds' reproduction on top of the hill called Ard El Gazala.



Figure 23: Equipment used for hunting falcons

6.2.3. Hunting challenges

There is some main challenges related to migrant birds' hunting in Sallum. On one hand, hunting is not only unlicensed, but is illegal. However, hunters do not care about that issue and confirm remaining hunting «*whatever it takes*». As a matter of fact, this hobby is very common and prestigious. Most hobby hunters are proud of their trips and the effort they do. «*I spare the money for my trips along the year... even if my children do not have anything to eat, I will preserve the money for my trips.... this is my life... and eating those birds is a medicine and cure*». In a meeting with one of the hobby hunters, he explained that this hobby is essential to many men in Sallum. They wait for the season and go out in groups. Wild birds are believed to be very healthy and nutritious; eating them is believed to be a sexual energizer for men. «*Nobody can prohibit us from hunting whatever measures are set... don't tell me about protected areas or environmental issues... we will remain hunting until we die*». Prohibiting the seasonal hunting of migrating birds will be a problematic matter in the management of the MPA.

6.3. Traditional activities versus newly introduced activities

Traditional activities in Sallum include:

- (i) grazing animals such as sheep, goats, cows and camels ;
- (ii) cultivation of watermelon, black grapes, figs, olives, cucumber, tomatoes, wheat, and barley ;
- (iii) handicrafts such as water or milk containers made from goats hide and (internal) tents and rugs woven from sheep and goats wool ;
- (iv) trading using camels for transportation or - more recently - modern highways.

Newly introduced activities are practiced by both Bedouin and new-comers alike, and include activities such as:

- (i) employment of educated people especially within the government and social services sectors;
- (ii) businesses supporting services as the building and running of hotels, coffee shops, grocery shops, restaurants, as well as businesses in currency exchange and transportation;
- (iii) smuggling of goods between Egypt and Libya⁵.

⁽⁵⁾ Nadine Marchall, Iman El Bastawisi, and Paul Marchall, Towards Marine Protected area Success: The Human dimensions of a prospective MPA in Sallum, Egypt, December 2007.



Figure 24: Small traditional Friday Souq in Sallum City

6.3.1. Interface trading

Within meetings and discussions with local authorities, it was made clear that about 50% of economically active persons are engaged in interface trading between Egypt and Libya. Smuggling of goods on the border is also perceived as a common livelihood in Sallum. Today after the closing of the border, neither trading nor smuggling of goods is made available. Not only during meetings but also during friendly talks with people on the street, it is widely complained that closing the border has caused a great recession in Sallum. *«Many families are now ruined having lost their livelihood»*. Therefore, many of those who were engaged in trading are migrating to Sid Barrani to set up new businesses, such as: digging of well, agricultural and grazing activities. Others migrate to Marsa Matrouh and start trade and resale activities, or set up small and medium enterprises, such as: transport and taxi business. It is also complained within discussions that the nature of soil in Sallum is muddy and does not enable much agricultural and grazing activities.

6.3.2. Grazing

According to the Head of Sallum City council, about 20 % of economically active people are engaged in grazing activities. However, most of them live in Sidi Barrani. Types of animals bred are mainly sheep and goats, followed by camels. Grazing of sheep and goats takes place on the coast and in the open desert in the winter and in the barns in the summer. In all cases, livestock is sheltered in the barns either beside the house or on the agricultural land, if any. The cost of fodder is estimated at LE 100 per head per month. About 30 % of the livestock is consumed locally, while almost 70 % is sent out to Alexandria. As for camels, grazing takes place between February and April in the open desert. The rest of the year, camels are bred fodder as per 5 kg per head per day. The cost of fodder is estimated at LE 400 per head per month. It is stated that the entire production of livestock is sent out to Alexandria and Aamreya. It is complained during discussions that there is no cooperatives for herdsmen in Sallum.



Figure 25: Grazing in the contiguous areas of the MPA

6.3.3. Government professions

Consultation with local authorities indicates that about 15% of economically active persons are engaged in governmental professions. This applies to men, women, Bedouins, and newcomers. Governmental professions include jobs such as: teachers and officers at local authorities, and local governmental agencies.

6.3.4. Agriculture

According to the Head of Sallum City Council, about 10 % of economically active people are engaged in agricultural

activities. Within discussions with farmers, they stated that the most common crop is barley, followed by figs, grapes, olives, and water melons. The average size of land plots ranges between 10 and 12 feddan, where the smallest plot in Sallum is one feddan, the majority of owners use labourer farmers to help them in cultivating the land. As for the consumption, it is explained that almost 30 % is consumed locally and about 70 % is sent out to Alexandria and El Behaira. Farmers also stated that they use natural sources for irrigation, e.g., rain and natural water reservoir tanks. However, the scarcity of water resources in Sallum is a great challenge to agriculture. The lack of fertilisers, pesticides, and an agricultural cooperative to assist farmers is also seen as great obstacles.



7. LOCAL DEVELOPMENT

Much of the population of Sallum is living in an impoverished state by international standards. Sallum lacks many social services and infrastructure, and those that do exist are of poor quality. Whilst many children will receive primary schooling, only few will attend secondary school. Only since Sallum has become important as a gateway into Libya has investment been made into the township in terms of paved Corniche road, electricity, potable water, communication and transportation, schools, health units, mosques and different governmental directories. Prior to this time, the region was severely neglected in terms of social structure and infrastructure. The region continues to suffer from a lack of a sewerage system or adequate disposal systems for solid waste. Despite the fact that Sallum receives different national and international visitors, hotels and cafes are of very poor quality and quantity. Other modern facilities have also been introduced into the region such as: communication systems, satellites and western television programs which are said to have raised peoples' awareness of the outside world and have increased the demand for western-style goods, many of which are smuggled into the area⁶.

7.1. Urban planning

Within the meeting with local authorities in Sallum and Marsa Matrouh, priorities for urban development were discussed. It was confirmed that the City of Sallum needs a development plan for local development and in particular a plan for tourism development. However, the Head of Sallum City stated the development for the City is mainly related to infrastructure and social services. First priority is the extension of electricity networks for main and internal lines, and the establishment of low voltage transformers. Second priority is meeting the needs of local residents for adequate potable water through the establishment of natural water reservoir tanks and increasing the capacity of water desalination plants, the extension of inner roads to improve the accessibility to villages and remote hamlets. This is followed by the improvement of local services and the local physical environment, in terms of: solid waste management, health care services, and education.

7.2. Tourism

Sallum is regarded as a gateway to Egypt as it sits close to the Libyan border and is the closest area in Egypt to the shores of Europe. According to Egypt State Information

Year Book 2006, Sallum used to receive up to 7,000 tourists in winter and up to 10,000 in summer out of a approximately 8 million visitors Egypt each year. Most visitors to the Sallum region come from the Arabic west countries (e.g. Libya, Tunisia, Algeria and Morocco) as well as from Germany, Italy, USA, and the UK. According to the European National Tourism Office, about 43 % of all foreign travellers in 2003 labelled themselves as green and that their main interests were visiting protected areas (78 %), historic sites (69 %), and ethnic communities (46 %). Sallum was identified as a key site for viewing the solar eclipse in March 2006, an event that attracted 60,000 tourists to the area. Whilst the town was unable to provide the necessary infrastructure, a major problem was the cultural attitude towards tourists.

7.2.1. Potential for local tourism

Sallum has notable natural beauty provided by its position on the Gulf of Sallum and in its contrast in colours between the seascape and the terrestrial landscape of the Plateau of Sallum. Most of the sandy shoreline that extends towards the east is undeveloped.

The western flank has numerous beautiful hills with valleys rich in fauna and flora. The area is one of the few places in Egypt where terrestrial wildlife such as foxes, fennecs, hyenas, gazelles, hares, jackals, hedgehogs, rats, jerboas, as well as many other species of reptiles (notably snakes such as vipers) can still be occasionally sighted. The area is famous for an historic large scale military cemetery from World War II and it is close to many archaeological sites, such as the ruins of a castle that was built to secure cultivation of wheat for the Roman Empire. The potential for tourism in Sallum can be listed as follows:

- Sallum is a virgin region with natural beauty that is not yet discovered ;
- Recreation tourism including beach tourism, swimming, snorkelling, diving and boat riding in the gulfs ;
- Desert tourism in terms of camping and safari in the open desert ;
- Environmental tourism in terms of observing migrating birds and animals during the season, open birds park, medical plants, and aquaculture ;
- Historical and archaeological tourism.

⁶ Nadine Marchall, Iman El Bastawisi, and Paul Marchall, *Towards Marine Protected area Success: The Human Dimensions of a Prospective MPA in Sallum, Egypt, December 2007.*

7.2.2 Tourism challenges

There are many aspects that put great challenges on the tourism development in Sallum. These can be grouped as follows:

- Lack of communication and coordination between planning authorities in Egypt in general and in the case of Sallum in particular. For example, there is Master Plan for Sallum City which is prepared by the General Organization for Physical Planning (GOPP) ; this plan is under preparation since many years (maybe since 2006 or so). Moreover, it is still locked in the drawers and not put in action. The local authorities do not have a copy of it and it was not made available to get a copy from GOPP. There is also another local Master Plan for tourism development which is prepared by General Directorate for Investment at Marsa Matrouh Governorate. Again, local authorities do not have a copy of it and it was not made available to get a copy from Matrouh Governorate.
- The Egyptian Tourism Development Agency does not own any land in Sallum. Because Sallum is a border city, the land in the City is falling under the Egyptian Armed Forces and the Border Army in Sallum for security and safety purposes. On the other hand, the private sector is not yet involved to invest in Sallum. However, if it is encouraged to do so, permits will be easily obtained from the Armed Forces as discussed and confirmed by Border Intelligence Guard office in Sallum.
- Transportation is also perceived as an obstacle. The high way from Cairo-Alexandria-Matrouh to Sallum is not always convenient and safe. The closest civil air port is located in Matrouh, about 225 km away from Sallum. There is also a military air port in Sidi Barrani that can host charter flights. Additionally, a BOT civil airport can be built in Alameen/El Dabaa to serve the tourism establishments along the North Coast. The closest civil air port on the Libyan side is in Tobroq, about 150 km far from Sallum.
- Lack of infrastructure services and tourism establishment is again a main challenge to tourism development. There are no proper hotels and/or restaurants in Sallum City. There are only three «poor» hotels with a limited number of rooms. Other services such as food suppliers, construction material and workers, ambulances and emergency hospitals, shops etc... are also a prerequisite for tourism development.



© RAC/SPA, EEAA, Environics
Sert Hotel



© RAC/SPA, EEAA, Environics
Beb Elbahr Hotel



© RAC/SPA, EEAA, Environics
El Wehda El Arabeya Hotel



© RAC/SPA, EEAA, Environics
Poor physical condition of hotels



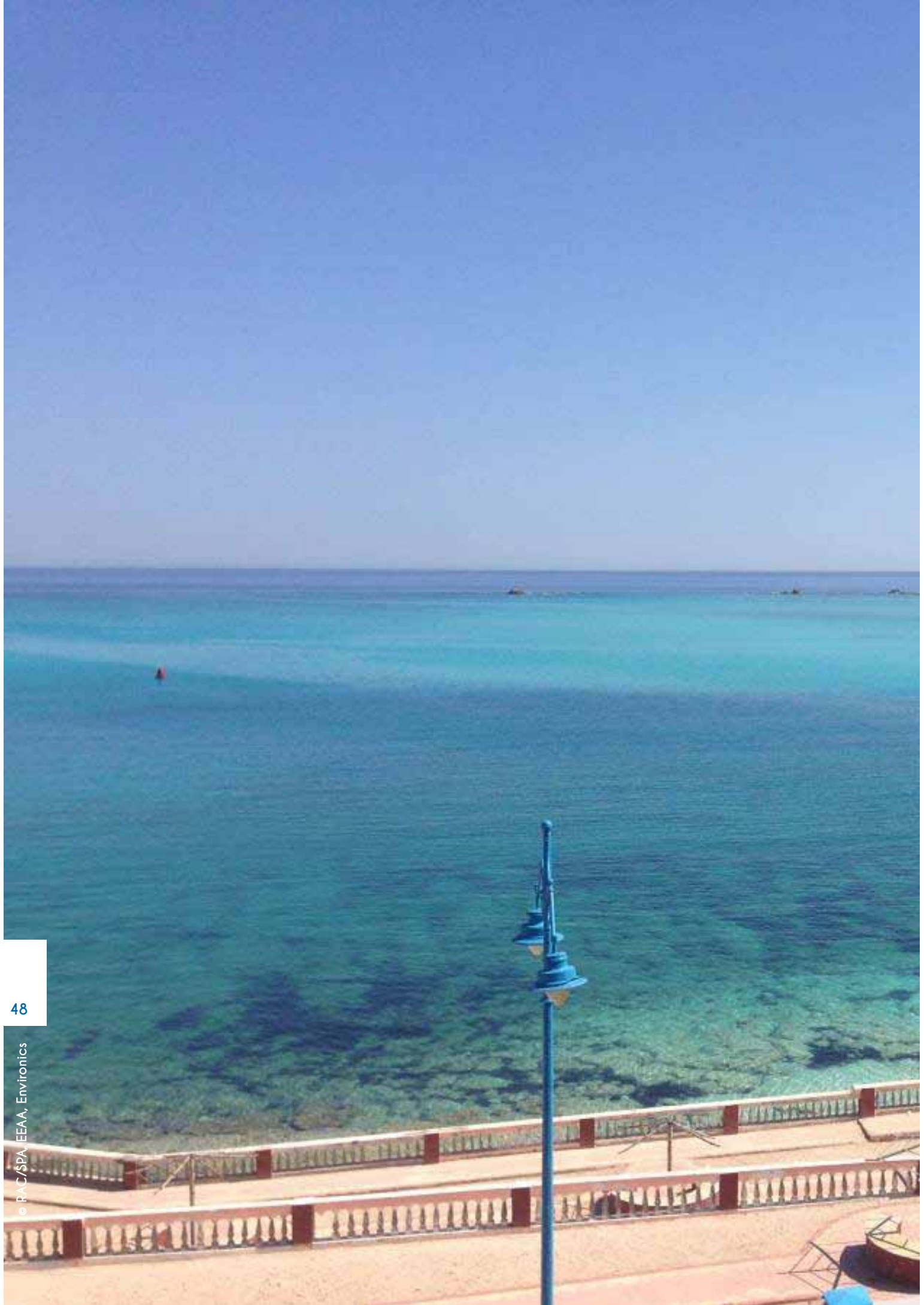
© RAC/SPA, EEAA, Environics
Poor standard of rooms in the hotels

Figure 26: Photo collection of existed Hotels in Sallum

- In addition to all above, literature indicates that one main challenge for tourism development in Sallum is the cultural intimidation as perceived by local residents. During a focus group discussion with fishermen (2007)⁷, one fisherman explained that tourism is often accompanied by the introduction of alcohol as well as inappropriate behaviours and appearances that will create an undesirable trend of change especially

amongst youngsters. People from both the fishing and Bedouin communities and of both genders, expressed their anxiety for what they thought would bring new negative habits into their conservative society. Another fisherman suggested that, tourists should learn about the local culture of Sallum if they want to come and must not hurt the eyes and feelings of the local residents with their behaviour⁸.

^{7, 8)} Nadine Marchall, Iman El Bastawisi, and Paul Marchall, Towards Marine Protected area Success: The Human Dimensions of a Prospective MPA in Sallum, Egypt, December 2007.



8. MAIN FINDINGS AND RECOMMENDATIONS

This section builds first and foremost on the consultation with various stakeholders during the site visit. It aims to provide proposed solutions to challenges raised in the discussions as perceived by local residents and sensitive receptors.

8.1. Local perceptions and awareness

It has been made very obvious that participants in all meetings do not know about Sallum MPA at all, and those who know have mixed and misleading information. This applies for instance to almost all officials in the local authorities in Sallum and Matrouh, and to all sensitive receptors or MPA affected persons who are undertaking livelihood and land-based activities on Sallum MPA, e.g., fishermen and birds hunters. For instance, officials at the Regional Branch office, the Planning Directorate, and the Investment Directorate at Matrouh Governorate do not have clear information about Sallum MPA.

It is highly recommended to take some corrective actions and activities to rectify the situation as is today. These can be listed as follows:

- The MPA office at Sallum shall be operated as soon as possible, so the head and local staff can start immediately the consultation and awareness raising activities ;
- A communication Strategy including a Stakeholder Engagement Plan and a Proposals/ complaints Mechanism shall be developed to be set in action to ensure that information is disclosed in the right time and the right channel ;
- A package of training and awareness raising activities shall be designed. Training shall target different levels: local authorities in Sallum and Matrouh, natural leaders in Sallum, PAPs who have direct socio economic dealings with Sallum MPA, local residents, and pupils in Sallum schools and institutes ;
- Coordination activities on the national and regional level shall be designed for mutual transfer of experience.

8.2. Livelihood enhancement and community development

It has been made very obvious during the field visit that there are a number of challenges regarding livelihood and land-based activities as mentioned above. Therefore, it has been decided to consult participants on proposed practical solutions that are sound for them and that

contribute to the well-being of the community at the same time. Hence, proposed solutions are grouped in three focal domains as follows:

8.2.1. Livelihood enhancement for fishermen in Sallum MPA

As mentioned above, the number of fishermen in Sallum MPA is a small in count but great in importance. To start with, fishermen have mixed and misleading information about the MPA targets. Most of them think that fishing will be totally prohibited and they will lose their livelihood completely «*We are born fishermen after our grandfathers and fathers*»... «*Our lives will be ruined and our children will starve*».... «*This is our end here*...». It took quite a long time to rectify the information and explain to them that declaring the area as a marine protected area will not prohibit fishing activities; but will rather set some restrictions on fishing in the area, in terms of zoning and number and power horse of fishing boats to conservation the fish stocks in the area. During discussions a better understanding was reached and fishermen and their representatives started positively to propose various initiatives to enhancement the fishermen's livelihoods in Sallum MPA. These can be summarised as follows:

- Develop and improve fishing equipments, e.g., boats, nets, anchors.... etc. It is also proposed to provide a purse seine (Shanshulla boat) to enable fishermen to fish from the offshore. It is also wished to equip boats with lights to attract fish to the nets during the night ;
- Establish a dry dock to facilitate berthing of boats in the marina ;
- Control the mesh of fishing nets to avoid catching the fish fry to protect the fisheries in the MPA ;
- Launch workshops to build and maintain fishing boats, and provide training to local people to establish such industry in Sallum ;
- Open an ice factory to serve preserving the fish catch after berthing and before transferring it to the market ;
- Employ fishermen and their family members in the MPA, and provide needed trainings to capacitate them for the job opportunities available ;
- Launch a marine museum to revive environmental tourism in Sallum. It is mentioned within discussions that there are 2 large skeletons of sun fish (Shams fish) that were send out to Alexandria; one weights 150 kg and the second reaches 1050 kg ;

- Empower the fishermen cooperative through allocating a venue to host meeting, and mobilising resources to assist fishermen. It is explained that the cooperative is operating on informal and friendly basis so far ;
- Establish a fishermen syndicate to protect their rights.

8.2.2. Alternative recreational activities for bird hunting

As mentioned earlier, the hobby of hunting migrating birds is an authentic hobby in the north coast in general and in Sallum in particular. Some of these hunters do it for fun; others combine the fun with the assumed medical benefit of eating the catch. On the other hand, hunters have affirmed loudly not intending to obey to the prohibition of birds hunting in the area. Therefore, it has been decided to think out of the box to find creative alternatives at least for those who do it for pure fun and leisure. Proposed solutions can be listed as follows:

- Establish a shooting club for locals to practice their hobby. The Armed Forces has erected a huge social club that will be handed over to Sallum City council. The club has plenty of halls and large yards. It has been widely discussed to use this venue to launch a shooting club. Such an idea can be further investigated and developed ;
- Use local hunters in the central bird ringing programs through Sallum MPA. They can participate in awareness raising workshops and can receive training on the ringing tools and methods ;
- Carry out captive breeding and rehabilitation centres for birds with allowing hunting numbers of them ;
- Integrated coastal management.

8.2.3. Community development initiatives

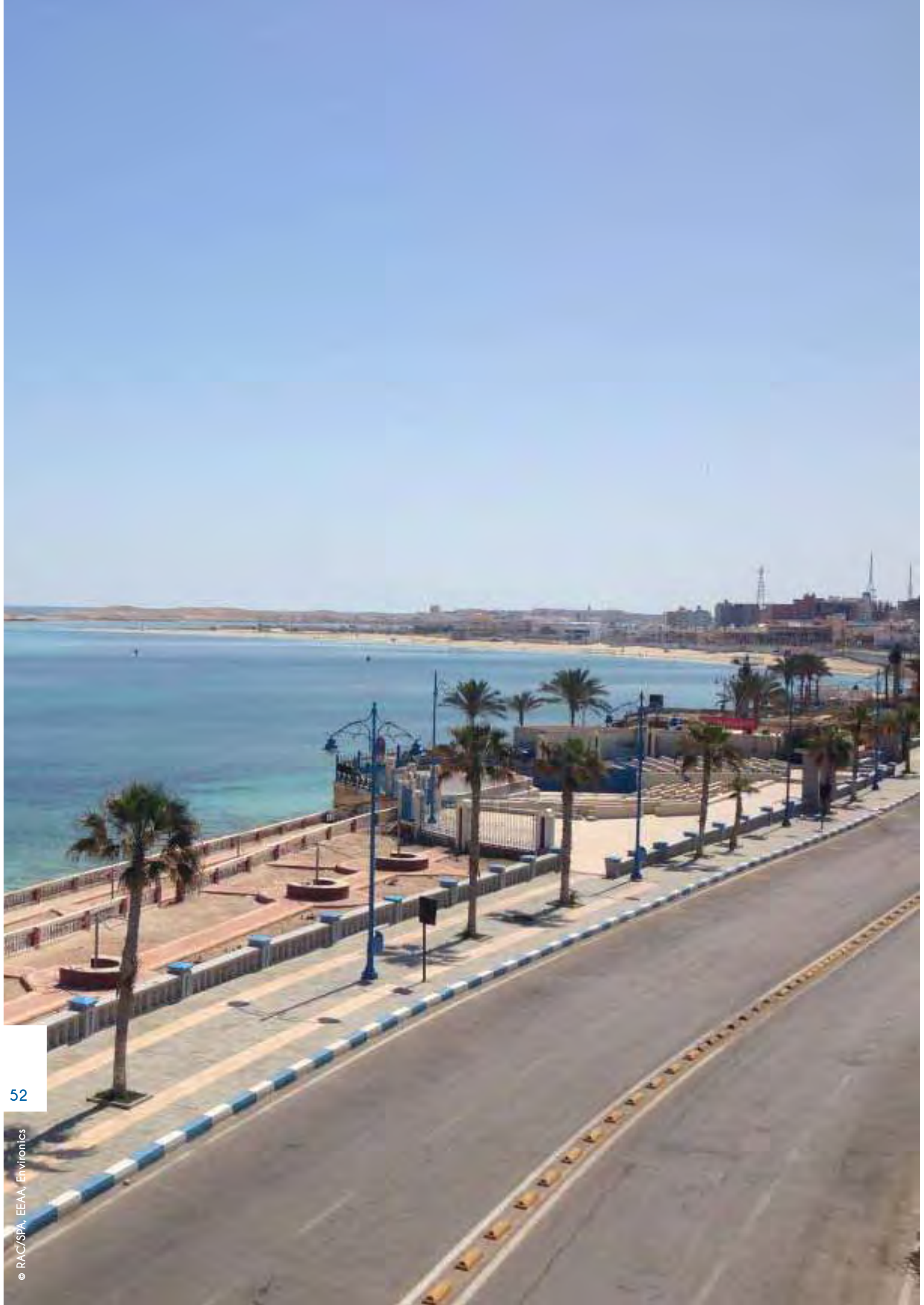
As mentioned previously, all proposed ideas or community development initiatives derive from discussions in meetings with various stakeholders. Almost all of the initiatives revolve around the idea of using local resources for local manufacturing and industry. Widely discussed are the following:

- Open training centres and workshops to train new generations on the production of rugs sheep and camels wool «*make use of old people to train younger generations*». It is also proposed to set up laundries for animal wool washing, because it is an important step in the rug production process; so far, wool is send out to Damanhour city to get washed before the rug production process begins ;
- Encourage the planting of olive trees and initiate at the same time the opening of olive pressing facilities to produce local virgin olive oil ;
- Invest in all kinds of vocational training in general and vocational education in the area of tourism and hotel management.



Figure 27: The Armed Forces social club in Sallum





9. FURTHER STEPS FOR EFFECTIVE MANAGEMENT OF SALLUM MPA

This section seeks to provide guidance to MPA management and stakeholder engagement. The description and assessment of the socio cultural and institutional context in the local community of Sallum helps the development of socially sound action plans and implantation mechanisms.

9.1. Stakeholder identification and engagement

Stakeholders' identification takes the nature and location of the MPA and the nature of potential impacts, as well as institutional, legal and managerial framework applicable to the MPA into account. Stakeholders identified fall into two main groups:

9.1.1. Primary stakeholders:

The beneficiaries by the development and who will be directly affected either positively or negatively. They include local populations (individuals and community-based organizations) in study area, in particular, poor and marginalized groups who have traditionally been excluded from participating in development efforts and outcomes.

These can be listed as follows:

- Fishermen and their households, fishermen Sheikh(s), fishermen Cooperative ;
- Migrant birds' hunters ;
- Farmers, labourer farmers, farmers households ;
- Herdsmen, herdsmen households ;
- Local residents in study area ;
- Local NGOs and CBOs.

9.1.2. Secondary stakeholders:

Agencies, experts, interested parties and anyone able to influence the outcome of the development, because of their ability to contribute with their knowledge or ideas to improve the design, or because of their ability to provide mitigations of environmental and social impacts, or because of their influence on the development; and also those might be indirectly affected by the MPA. They include Central Government, line ministries, local government/authorities, implementing agencies, MPA staff, civil society organisations, community based organizations, private sector firms, donors,

pertinent development agencies, Media, and Academia. These can be listed as follows:

- Armed Forces, Border Army, Ministry of Defence ;
- Ministry of Interior, Water Surfaces' Police ;
- Marsa Matrouh Governorate, Sallum Local Council ;
- Ministry of Environment, Egyptian Environmental Affairs Agency, Department of Coastal Zone Management, Matrouh Regional Branch Office ;
- Ministry of Agriculture and Land Reclamation, General Authority for Fish Resources Development ;
- Ministry of Water Resources and Irrigation, Cooperative Union of Water resources ;
- National Institute for Oceanography and Fisheries ;
- Ministry of Tourism ;
- Higher Council of Monuments, Higher Council of Culture ;
- Ministry of Transportation ;
- Ministry of Investment ;
- Donors, research Community (Experts, Consultants.... etc), national and local media.

9.1.3. Stakeholder engagement

Regular consultation with affected people allows MPA management to monitor the adequacy and effectiveness of development efforts and initiatives. However, due to the small number of affected people, there is no need for MPA to employ a community liaison representative with a budget specifically for the facilitation and management of consultation with PAPs. Alternatively, they can fully rely on Sallum MPA staff to further manage consultation with PAPs to ensure that affected people have access to information about the MPA and opportunities to seek redress of Proposals/ complaints relating to the MPA. The process can be supervised and monitored by an independent social development expert on regular basis.

9.2. Proposals / complaints management

The Sallum MPA management plan shall develop the proposals/ complaints mechanism which can be used by PAPs affected by resettlement who feel that they have been adversely impacted by the MPA.

The MPA staff shall develop a framework for Proposals/ complaints mechanism. The purpose of this Proposals/ complaints mechanism is to ensure that anyone with a proposals/ complaints or concern about the area can communicate it to the MPA office and get feedback on how this concern will be addressed. A proposals/ complaints can be defined as an actual or perceived problem giving ground for complaint. MPA staff shall provide a proposals/ complaints mechanism which should address concerns promptly, using an understandable and transparent process that is culturally appropriate and readily accessible to all segments of the affected communities, and at no cost and without retribution. To this end the proposals/ complaints mechanism guarantees confidentiality and specifies the time frames in which the proposals/ complaints should be resolved.

9.2.1. Management and tracking of Proposals/ complaints

The roll out of the proposals/ complaints mechanism to PAPs will be mainly the responsibility the MPA staff. This includes the explanations of the process to community members and further consultation activities to ensure that the Proposals/ complaints mechanism is made available to PAPs in a socially appropriate manner. Specific challenges to be addressed will be to ensure that:

- The proposals/ complaints mechanism is accessible to illiterate community PAPs and those with other special needs ;
- The proposals/ complaints mechanism is publicised using culturally relevant and inclusive media ;
- The proposals/ complaints process is accessible for local, national and international stakeholders ;
- Affected persons and community members are aware that they can use the Proposals/ complaints mechanism without retribution.

A **proposals/ complaints database system** will need to be set up by MPA staff before land acquisition starts. This database will need to be designed to make it easily possible to track individual proposals/ complaints, giving each proposals/ complaints a relevant ‘owner’ within the MPA, trigger deadlines for progress on proposals/ complaints communications and resolution as specified in the proposals/ complaints process. The proposals/ complaints database should specify where proposals/ complaints have been resolved and a statement of satisfaction has been signed by the complainant. Where it has not been possible to resolve proposals/ complaints to the satisfaction of both parties this should be specified in the database, and unresolved proposals/ complaints should be assessed during third party monitoring/ audit.

Monitoring and reporting of proposals/ complaints, the implementation of the proposals/ complaints mechanism will be subject to third party monitoring to ensure

that the MPA staff is performing effectively in its commitments to resolving community proposals/ complaints. This monitoring could be undertaken by an independent social / consultation Specialists. Third party monitors of the proposals/ complaints mechanism will need access to the proposals/ complaints database in order to audit performance. MPA staff will need to report on the performance in closing out proposals/ complaints (i.e., the number of proposals/ complaints resolved within agreed time frames) as part of the Annual Public Report and ensure that all stakeholders are aware of the proposals/ complaints process and reporting methods on the website and through leaflets accessible to PAPs and community leaders.

9.2.2. Proposals/ complaints management process

There are four proposed steps for the proposals/ complaints mechanism process as follows:

- **Step 1 Registration of proposals/ complaints**
Proposals/ complaints on any aspect of adverse impacts shall be lodged verbally or in written form to the MPA office. The proposals/ complaints can be discussed with relevant parties in an informal meeting. Proposals/ complaints will be filed promptly by the MPA staff in the proposals/ complaints database.
- **Step 2 Acknowledgement of proposals/ complaints**
Within 10 days the proposals/ complaints will be acknowledged in writing, specifying the contact at the MPA office and the proposals/ complaints number and outline the process and time line for proposals/ complaints investigation.
- **Step 3 Proposals/ complaints resolution**
MPA staff will be responsible for resolving the proposals/ complaints with a provision of feedback within 20 days of filing the complaint. If agreement on this resolution is achieved the proposals/ complaints will then be signed off by the director of the MPA and a letter of satisfaction will be signed by the complainant.
- **Step 4 Appeal**
If no solution to the proposals/ complaints can be agreed between the MPA staff and the affected person(s), the proposals/ complaints will be recorded in the proposals/ complaints database as ‘unresolved’ and will be assessed by the independent third party proposals/ complaints monitor. This can be done informally through local leaders in the community or formally through escalating the matter to the regional branch office in Matrouh Governorate.

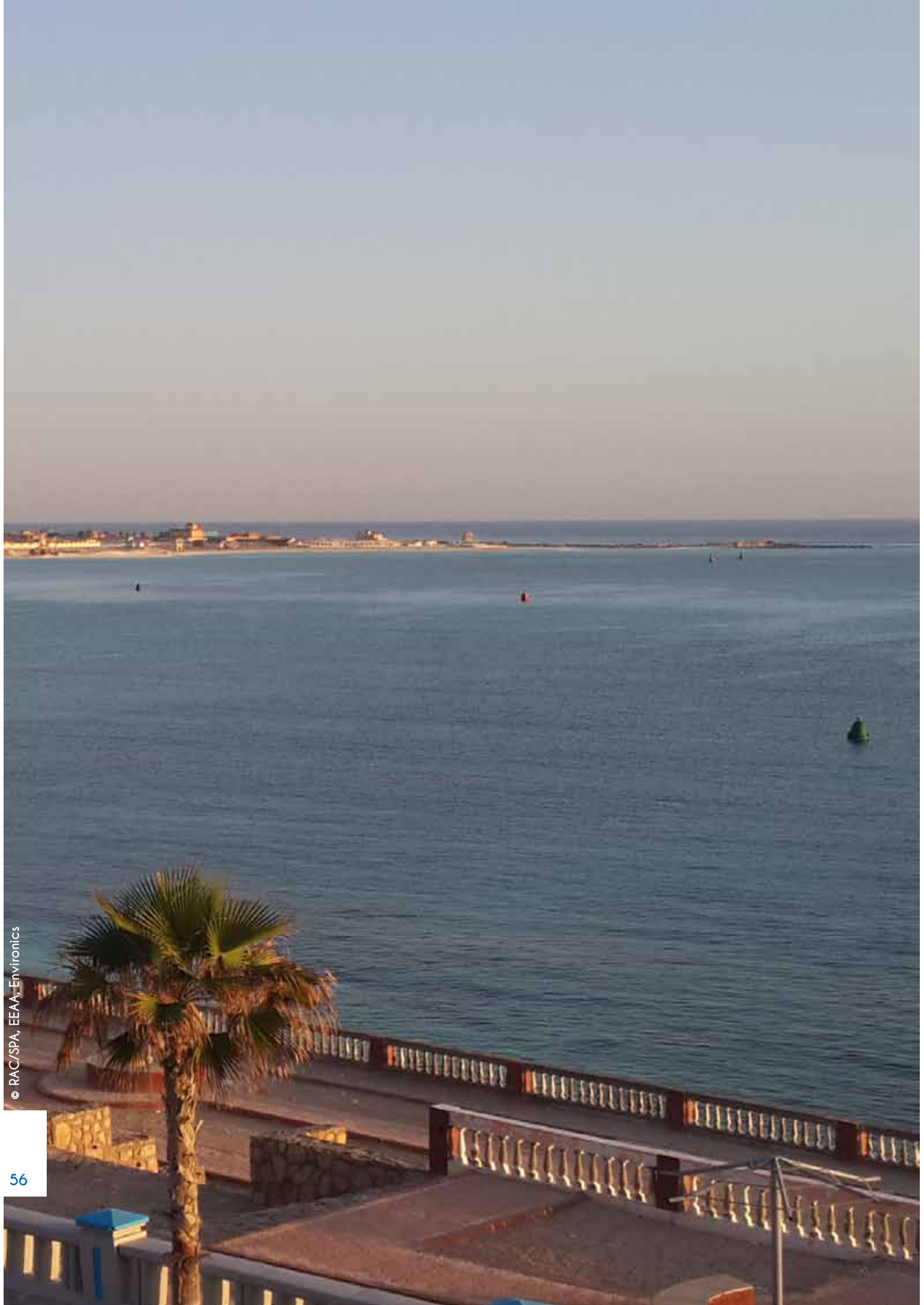
9.3. Institutional arrangements

As recommended above the Sallum MPA office shall be set in operation as soon as possible to commence various activities on the ground. In this regard it is highly recommended to take the following actions:

- Furnish and equip the office; it is understood during the visit that a flat is already rented as a venue for the office ;
- Hire and train local staff for the MPA office. Staff shall not only be trained on environmental matters, but also on communication and public consultation skills. Such skills are crucial to deal on the ground with various stakeholders with different interests and power ;
- Develop the communication strategy including the Stakeholder Engagement Plan (SEP) and the proposals/

complaints Mechanism, in addition to the Monitoring and Evaluation Scheme. These plans shall be reviewed, authenticated, and then put into operation ;

- Provide the MPA office with needed equipments for marine and birds monitoring ;
- Provide the MPA office with a four wheel drive vehicle and a motor boat including the crew to facilitate the inspection activities.



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ANNEX I: LIST OF KEY INFORMANTS INTERVIEWED

#	Name	Representation
Border Army		
1	Mohamed Saad	Head of Sallum Border Army Office
Livelihoods and land-based activities		
2	Mahmoud Atrees	Head of Sallum Fishermen Cooperative
3	Eissa Mohamed Nouh	Bird hunter and Ex City Councillor
4	Mahmoud Abdel Rahman	Falcon hunter
5	Essam Ali Ahmed Ali	Workers on the artificial water basin for birds hunting
6	Fathy Aboud	Farmer
7	Sherif Ismail Abdallah	Farmer
8	Gebriil Ismail Abdallah	Herdsman
9	Abdallah Abou Regela	Cattle tradesman and hunter
10	Mahmoud El Kholy	Construction contractor
Local authority		
11	Hussein El Sawy	Sallum City Councillor
12	Taher Moftah	Head of RBO, Matrouh Governorate
13	Ibrahim El Hafyan	Head of Urban Planning Directorate, Matrouh Governorate
14	Mohamed Abdel Halim	Vice head of Investment Directorate, Matrouh Governorate
15	Mohamed El Sayed	Head of Planning Directorate, Matrouh Governorate
16	Osama Abdel Hamid	Head of Economic Affairs, Matrouh Governorate
17	Mohamed Besar	Manager of Sallum MPA

1. Focus Group Guide – Fishermen

Background

Have you always been a fisherman? If not, what did you do previously? Why have you chosen to fish?

Educational background (especially literacy and numeracy skills - this determines someone's ability to sell / negotiate prices etc).

What other sources of income do you have aside from fishing? Indicate in order of importance.

Approximately what percentage of people in this area work in the fishing sector? Of these what percent are owners of a boat and/or fish farm and what percent are labourers?

Are the fishermen organized? If so, who represents fishing interests?

What are the three main challenges for fishing in this area?

Do women fish? (If so, continue to prompt for differences between men and women in the questions below on points related to location, equipment, etc.)

Fishing areas

Where do you fish? (Draw on a map.)

- Specify if fishermen with equipment (including boats) fish in different areas
- Specify areas for different types of fish if possible

Are there places you don't go to fish? (Also draw on the map.) Why?

Where do most people who fish live?

Do you have permits for fishing – what are the permit requirements, how much do they cost, how and when are they renewed? How are permits enforced?

EQUIPMENTS and Repairs

What kind of equipment do you use for fishing (nets (be specific), traps, etc.)?

Do you use boats? If so, what types of boats do you use (motor boat, rowboat, etc.)?

Where do get your boats and equipment maintained and repaired?

Fishing Effort

When are the low and high fishing seasons? (Return to map and ask if there are differences in location and catch during seasons.)

How many days a week do you go fishing? (Use Seasonal Calendar.)

- In the high season?
- In the low season?

How far do you go to fish? (in hours and distance) Provide a range if possible.

- In the high season?
- In the low season?

Fish Catch

Where do you land your catch? Why in this location?

Is the catch weighed? Is this recorded?

What are the most frequently caught fish species? (in decreasing order). Where are they caught?

What is the favored catch and why?

Approximately how much fish do you catch a week? (in kilos)

- High season?
- Low season?

Have you noticed any change in fish species or stocks over the time you have fished here?

Do you perceive any problems resulting from the quality of the fishing water on the quality of the fish catch in the local communities?

Do you think that the fishing water could have health impacts related to the consumption of the fish catch?

How much of the fish caught is used for personal consumption? All, more than half, half, less than half, none?

- High season?
- Low season?

How do fishermen perceive the quality implications of the water -where they fish- on the fish catch for personal consumption?

BRINGING CATCH TO THE MARKET

Where is the fish sold? (in decreasing order, if possible)

Do fishermen sell directly to the market or through tradesman? What is the value of the sale to the tradesman proportionate to final sale price?

How is the fish preserved and transported to where it is sold?

Does the quality of the local fishing water affect the quality of the catch, in terms growth, health, quality of fish meat...etc?

Does this affect their price?

FINANCE AND SUBSIDIES

What kinds of support do fishermen receive? (e.g., subsidized nets, fishing equipments, other)

Do fishermen have access to credit? (Where from/ what type). Is it sufficient? If not, why?

When do they pay it back? What kinds of debt do they hold?

Household Expenditure and Savings

What is the average income (daily / weekly) for boat owners and laborers? (in EGP or share of catch as appropriate; high season and low season)

Is the average income of fishermen sufficient to live and support the family? If not, what else must fishermen commonly do to support the family?

Do others (women, children...etc.) in the household find work to supplement income?

Have there been any changes in fishing over the last ten years?

What are the constraints, if any, to fishermen improving their income?

Health

What are the most common illnesses/injuries suffered by fishermen? Why / What are the causes of these?

Are there any illnesses that fishermen suffer that other groups do not?

How are illnesses diagnosed and at what point is assistance sought?

Where do fishermen commonly seek medical attention? Why?

What are the most common causes of death for fishermen?

What is the prevalence of time-limited illnesses?

What is the prevalence of chronic illnesses?

What is the impact of illness – including chronic illnesses - on the usual activities of the household? E.g. increased care requirements, loss of working days, loss of income, support mechanisms within the household and the village / fishing community.

Ask the following questions for produce for commercial use and household consumption:

Do fishermen see a link between illnesses and the quality of their environment?

Do fishermen see a link between illnesses and the quality of the water where they fish?

Do fishermen see a link between illnesses and the quality of local fish catch?

Do fishermen see a link between illnesses and the quality of the local agricultural produce?

Project

What do you know about KES Wastewater Expansion Project development projects in this area?

How do you think these projects might affect fishermen? (Prompt for socio-economic and health issues)

Opportunities?

Impacts?

What do you think can be done to minimize the negative effects and enhance the positive? (try not to focus on the potential disruption due to building works etc, but on the overall benefits of the project once completed)

In providing information to you about these projects, which types of media would be most useful? Is there some way that information is typically communicated to fishermen?

In discussing such projects with community leaders, who / which organisations should be involved in such discussions? Heads of fishermen associations?

Do you have any other comments you would like to add?

Seasonal Activities Calendar

The Seasonal Activities Calendar helps to identify economic and communal activities by season, intensity, participants' gender, and participants' age. The calendar provides a better understanding of community livelihood contexts and changes over time and/or seasons in terms of heavy work periods and seasonal peaks of environmental problems such as: waste accumulations, illnesses, animal diseases, droughts, floods, etc. It highlights gender roles, unequal workloads, and access and control of assets.

People are asked to describe:

- (1) Primary activities in each season ;
- (2) When their workload is heaviest or lightest ;
- (3) How activities have changed over time ;
- (4) Causes and consequences of any changes.

Information is presented on two axes. The horizontal axis represents economic activities while the vertical represents the seasons by the months of the year.

Economic Activity	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1-												
2-												
3-												
4-												
5-												
...												
...												

ANNEX III: LIST OF BIRDS RECORDED IN SALLUM MPA

Status codes are as follows: PV= passage visitor, WV= winter visitor, RB= resident breeder, MB= migrant breeder, CB= casual breeder, AV= accidental visitor; “?” denotes some uncertainty about status.

English name	Latin name	Local status
Ostrich	<i>Struthio camelus</i>	Extinct
Mediterranean Shearwater	<i>Puffinus yelkouan</i>	PV
Cory's Shearwater	<i>Calonectris diomedea</i>	PV
Cormorant	<i>Phalacrocorax carbo</i>	PV, WV
Shag	<i>Phalacrocorax aristotelis</i>	RB
Great-crested Grebe	<i>Podiceps cristatus</i>	WV
Black-necked Grebe	<i>Podiceps nigricollis</i>	WV
Eurasian Wigeon	<i>Anas penelope</i>	PV
Green-winged Teal	<i>Anas crecca</i>	PV
Mallard	<i>Anas platyrhynchos</i>	PV
Northern Pintail	<i>Anas acuta</i>	PV
Garganey	<i>Anas querquedula</i>	PV
Northern Shoveler	<i>Anas clypeata</i>	PV
Greater Flamingo	<i>Phoenicopterus ruber</i>	PV
Little Egret	<i>Egretta garzetta</i>	PV
Grey Heron	<i>Ardea cinerea</i>	PV
Purple Heron	<i>Ardea purpurea</i>	PV
Cattle Egret	<i>Bubulcus ibis</i>	PV
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	PV
Little Bittern	<i>Ixobrychus minutus</i>	PV
Glossy Ibis	<i>Plegadis falcinellus</i>	PV
White Stork	<i>Ciconia ciconia</i>	PV
Osprey	<i>Pandion haliaetus</i>	PV
European Honey-buzzard	<i>Pernis apivorus</i>	PV
Black Kite	<i>Milvus migrans</i>	PV
Western Marsh-Harrier	<i>Circus aeruginosus</i>	PV
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	PV
Common Buzzard	<i>Buteo buteo</i>	PV
Long-legged Buzzard	<i>Buteo rufinus</i>	PV
Eurasian Kestrel	<i>Falco tinnunculus</i>	WV
Red-footed Falcon	<i>Falco vespertinus</i>	RB, PV, WV
Merlin	<i>Falco columbarius</i>	PV
Eurasian Hobby	<i>Falco subbuteo</i>	WV
Lanner Falcon	<i>Falco biarmicus</i>	PV
Peregrine Falcon	<i>Falco peregrinus</i>	RB
Barbary Partridge	<i>Alectoris barbara</i>	PV
Common Quail	<i>Coturnix coturnix</i>	Extinct
Water Rail	<i>Rallus aquaticus</i>	PV
Corn Crake	<i>Crex crex</i>	PV

English name	Latin name	Local status
Spotted Crane	<i>Porzana porzana</i>	PV
Common Moorhen	<i>Gallinula chloropus</i>	PV
Eurasian Coot	<i>Fulica atra</i>	PV
Common Crane	<i>Grus grus</i>	PV
Houbara Bustard	<i>Chlamydotis undulata</i>	Extinct
Common Snipe	<i>Gallinago gallinago</i>	PV
Eurasian Curlew	<i>Numenius arquata</i>	WV
Spotted Redshank	<i>Tringa erythropus</i>	PV
Common Redshank	<i>Tringa totanus</i>	WV
Marsh Sandpiper	<i>Tringa stagnatilis</i>	PV
Common Greenshank	<i>Tringa nebularia</i>	PV
Green Sandpiper	<i>Tringa ochropus</i>	PV
Wood Sandpiper	<i>Tringa glareola</i>	PV
Common Sandpiper	<i>Actitis hypoleucos</i>	PV
Little Stint	<i>Calidris minuta</i>	PV, WV
Dunlin	<i>Calidris alpina</i>	PV, WV
Curlew Sandpiper	<i>Calidris ferruginea</i>	PV
Ruff	<i>Philomachus pugnax</i>	PV
Eurasian Thick-knee	<i>Burhinus oedicephalus</i>	RB
Black-winged Stilt	<i>Himantopus himantopus</i>	PV
Pied Avocet	<i>Recurvirostra avosetta</i>	PV
Cream-colored Courser	<i>Cursorius cursor</i>	PV, RB
Collared Pratincole	<i>Glareola pratincola</i>	PV
Black-bellied Plover	<i>Pluvialis squatarola</i>	PV, WV
Common Ringed Plover	<i>Charadrius hiaticula</i>	PV
Little Ringed Plover	<i>Charadrius dubius</i>	PV
Kentish Plover	<i>Charadrius alexandrinus</i>	RB, PV, WV
Eurasian Dotterel	<i>Charadrius morinellus</i>	WV
Northern Lapwing	<i>Vanellus vanellus</i>	PV
Lesser Black-backed Gull	<i>Larus fuscus</i>	PV, WV
Black-headed Gull	<i>Larus ridibundus</i>	PV
Audouin's Gull	<i>Larus audouinii</i>	WV, RB
Yellow-legged Gull	<i>Larus cachinnans</i>	WV, RB
Slender-billed Gull	<i>Larus genei</i>	PV, WV
Whiskered Tern	<i>Chlidonias hybridus</i>	PV
White-winged Tern	<i>Chlidonias leucopterus</i>	PV
Black Tern	<i>Chlidonias niger</i>	PV
Little Tern	<i>Sterna albifrons</i>	RB
Crowned Sandgrouse	<i>Pterocles coronatus</i>	RB
Rock Dove	<i>Columba livia</i>	RB
European Turtle-Dove	<i>Streptopelia turtur</i>	PV
Laughing Dove	<i>Streptopelia senegalensis</i>	RB
Common Cuckoo	<i>Cuculus canorus</i>	PV
Pharaoh Eagle-Owl	<i>Bubo ascalaphus</i>	RB
Little Owl	<i>Athene noctua</i>	RB
Short-eared Owl	<i>Asio flammeus</i>	PV
Eurasian Nightjar	<i>Caprimulgus europaeus</i>	PV
Common Swift	<i>Apus apus</i>	PV
Pallid Swift	<i>Apus pallidus</i>	PV, RB

English name	Latin name	Local status
European Bee-eater	<i>Merops apiaster</i>	PV
European Roller	<i>Coracias garrulus</i>	PV
Eurasian Hoopoe	<i>Upupa epops</i>	PV, RB
Eurasian Wryneck	<i>Jynx torquilla</i>	PV
Brown-necked Raven	<i>Corvus ruficollis</i>	RB
Eurasian Golden-Oriole	<i>Oriolus oriolus</i>	PV
Red-backed Shrike	<i>Lanius collurio</i>	PV
Lesser Grey Shrike	<i>Lanius minor</i>	PV
Southern Grey Shrike	<i>Lanius meridionalis</i>	RB
Woodchat Shrike	<i>Lanius senator</i>	PV
Rock-Thrush	<i>Monticola saxatilis</i>	PV
Blue Rock Thrush	<i>Monticola solitarius</i>	WV
Eurasian Blackbird	<i>Turdus merula</i>	PV, WV
Song Thrush	<i>Turdus philomelos</i>	PV, WV
Fielfare	<i>Turdus</i>	WV
Spotted Flycatcher	<i>Muscicapa striata</i>	PV
European Pied Flycatcher	<i>Ficedula hypoleuca</i>	PV
Collared Flycatcher	<i>Ficedula albicollis</i>	PV
European Robin	<i>Erithacus rubecula</i>	WV
Common Nightingale	<i>Luscinia megarhynchos</i>	PV
Bluethroat	<i>Luscinia svecica</i>	PV, WV
Rufous Bush-Robin	<i>Cercotrichas galactotes</i>	PV, RB
Black Redstart	<i>Phoenicurus ochrurus</i>	WV
Common Redstart	<i>Phoenicurus phoenicurus</i>	PV
Whinchat	<i>Saxicola rubetra</i>	PV
Stonechat	<i>Saxicola torquata</i>	WV
White-tailed Wheatear	<i>Oenanthe leucopyga</i>	RB
Northern Wheatear	<i>Oenanthe oenanthe</i>	PV
Mourning Wheatear	<i>Oenanthe lugens</i>	RB
Black-eared Wheatear	<i>Oenanthe hispanica</i>	PV
Desert Wheatear	<i>Oenanthe deserti</i>	WV, RB
Isabelline Wheatear	<i>Oenanthe isabellina</i>	WV
Red-rumped Wheatear	<i>Oenanthe moesta</i>	FB
Sand Martin	<i>Riparia riparia</i>	PV
Eurasian Crag-Martin	<i>Hirundo rupestris</i>	PV
Barn Swallow	<i>Hirundo rustica</i>	PV
Red-rumped Swallow	<i>Hirundo daurica</i>	PV
Common House-Martin	<i>Delichon urbica</i>	PV
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	PV, WV
Eurasian Reed-Warbler	<i>Acrocephalus scirpaceus</i>	PV
Marsh Warbler	<i>Acrocephalus palustris</i>	PV
Great Reed-Warbler	<i>Acrocephalus arundinaceus</i>	PV
Olivaceous Warbler	<i>Hippolais pallida</i>	PV
Willow Warbler	<i>Phylloscopus trochilus</i>	PV
Common Chiffchaff	<i>Phylloscopus collybita</i>	WV
Bonelli's Warbler	<i>Phylloscopus bonelli</i>	PV
Wood Warbler	<i>Phylloscopus sibilatrix</i>	PV
Blackcap	<i>Sylvia atricapilla</i>	PV
Greater Whitethroat	<i>Sylvia communis</i>	PV

English name	Latin name	Local status
Lesser Whitethroat	<i>Sylvia curruca</i>	PV
Rueppell's Warbler	<i>Sylvia rueppelli</i>	PV
Sardinian Warbler	<i>Sylvia melanocephala</i>	WV
Subalpine Warbler	<i>Sylvia cantillans</i>	PV
Spectacled Warbler	<i>Sylvia conspicillata</i>	WV
Marmora's Warbler	<i>Sylvia marmara</i>	AV
Bar-tailed Lark	<i>Ammomanes cincturus</i>	RB
Greater Hoopoe-Lark	<i>Alaemon alaudipes</i>	RB
Thick-billed Lark	<i>Ramphocoris clotbey</i>	RB
Bimaculated Lark	<i>Melanocorypha bimaculata</i>	PV
Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	PV
Lesser Short-toed Lark	<i>Calandrella rufescens</i>	RB
Dupont's Lark	<i>Chersophilus duponti</i>	RB
Crested Lark	<i>Galerida cristata</i>	RB
Thekla Lark	<i>Galerida theklae</i>	RB
Sky Lark	<i>Alauda arvensis</i>	WV
Temminck's Lark	<i>Eremophila bilopha</i>	RB
House Sparrow	<i>Passer domesticus</i>	RB
Spanish Sparrow	<i>Passer hispaniolensis</i>	PV, WV
White Wagtail	<i>Motacilla alba</i>	PV, WV
Yellow Wagtail	<i>Motacilla flava</i>	PV
Gray Wagtail	<i>Motacilla cinerea</i>	PV
Tawny Pipit	<i>Anthus campestris</i>	PV
Tree Pipit	<i>Anthus trivialis</i>	PV
Meadow Pipit	<i>Anthus pratensis</i>	WV
Red-throated Pipit	<i>Anthus cervinus</i>	PV, WV
Water Pipit	<i>Anthus spinoletta</i>	WV
Eurasian Linnet	<i>Carduelis cannabina</i>	WV
Ortolan Bunting	<i>Emberiza hortulana</i>	PV
Corn Bunting	<i>Emberiza calandra</i>	WV
Common Kingfisher	<i>Alcedo atthis</i>	PV
Blue-checked Bee-eater	<i>Merops persicus</i>	PV

ANNEX IV: LIST OF RECORDED FISH SPECIES DURING THE PERIOD BETWEEN 2003-2007 IN SALLUM

Group	Family	Scientific name	English name	Arabic name	May. 2003	Oct. 2004	May. 2005	Aug. 2007
Cartilaginous fish	Scyliorhinidae	<i>Scyliorhinus canicula</i>	Shark	قرش	x			x
	Triakidae	<i>Mustelus mustelus</i>	Smooth hound shark	مستولا				x
	Dasyatidae	<i>Dasyatis pastinaca</i>	Common Stingray	بقره مزركشة				x
		<i>Himantura uarnaka</i>	Honeycomb Stingray	بقره			x	x
	Myliobatidae	<i>Myliobatis aquilaa</i>	Common Eagle Ray	وطواط			x	
	Rajidae	<i>Raja miraletus</i>	Brown Ray	راي بعينين			x	
		<i>Raja radula</i>	Rough Ray	رايه		x	x	x
Bony fish	Apogonidae	<i>Apogon imberbis</i>	Cardinal Fish	أبجون			x	x
		<i>Apogon taeniatus</i>	Twobelt Cardinal	أبجون		x	x	
	Atherinidae	<i>Atherinomorus lacunosus</i>	Hardyhead Silverside	بساريا		x		
	Balastidae	<i>Balistes carolinensis</i>	Gray Tigger Fish	خنزير بثلاث شوكات			x	
	Blennidae	<i>Blenius ocellaris</i>	Butterfly Blennie	أبو قراع		x	x	x
		<i>Parablennius incognitus</i>	Blennie	أبو قراع			x	
	Bothidae	<i>Bothus podas</i>	White-Eyed Flounder	سنجتا	x	x	x	x
	Carangidae	<i>Trachurus mediterranean</i>	Blue Scad	شاخورة			x	x
	Centracanthidae	<i>Spicara flexuosa</i>	Picarel	موزة الجر	x		x	x
	Centracanthidae	<i>Spicara meana</i>	Plotched Picarel	موزة	x	x	x	
		<i>Spicara smaris</i>	Picarel	موزة	x	x	x	
	Citharidae	<i>Citharus linguatula</i>	Spotted Flounder	موسى منقطه	x	x	x	X
	Congridae	<i>Ariosoma balearicum</i>	Balearic Conger	ثعبان			x	X
	Engraulidae	<i>Engraulis encrasicolus</i>	Anchovy	أنشوجه				
	Fistularidae	<i>Fistularia commersonii</i>	Cornetfishes	ابو صفارة		x	x	X
	Gobiidae	<i>Gobius niger</i>	Black Goby	أبوكرش			x	
	Holocentridae	<i>Holocentrus rubrum</i>	Red Soldier Fish	جحاية	x			
	Labridae	<i>Coris julis</i>	Rainbow Wrasse	عروسه	x	x	x	
		<i>Pterogogus pelycus</i>	Sideburn Wrasse	عروسة بخت بنى			x	
		<i>Symphodus spp</i>		عرائس			x	
	<i>Xyrichtyus novacula</i>	Cleaver Wrasse	ببغاء	x	x		X	
Merluccidae	<i>Merluccius merluccius</i>	European Hake	نازلي	x			X	

Group	Family	Scientific name	English name	Arabic name	May. 2003	Oct. 2004	May. 2005	Aug. 2007
Bony fish	Monacanthidae	<i>Stephanolepis diaspros</i>	Leatherjacket	خنزير بشوكة	x	x		X
		<i>Stephanolepis hispidus</i>		خنزير بشوكة			x	
	Mullidae	<i>Mullus barbatus</i>	Striped Red Mullet	بربوني				X
		<i>Mullus surmuletus</i>	Striped Mullet	بربون حجر	x	x	x	X
		<i>Upeneus asymmetricus</i>	Golden Striped Goatfish	بربوني			x	
		<i>Upeneus francisi</i>		بربوني			x	X
	Pomacentridae	<i>Abudefduf sexfasciatus</i>	Scissortail Sergeant	دمسل		x		
		<i>Chromis chromis</i>	Damsel Fish	فناشة		x	x	X
	Scaridae	<i>Scarus cretensis</i>		مرزبان			x	X
		<i>Sparisoma cretense</i>	Parrot wrasse	مرزبان	x	x		X
	Scomberomoridae	<i>Scomberomorus commerson</i>	Spanish Mackerel	دراك			x	
	Scorpaenidae	<i>Scorpaena notata</i>	Small-Scaled Red Scorpionfish	عقرب أحمر	x	x	x	X
		<i>Scorpaena scrofa</i>	Red Scorpionfish	عقرب أحمر	x	x		X
		<i>Scorpaena porcus</i>	Small-Scaled Black Scorpionfish	عقرب بني	x			
	Serranidae	<i>Epiplatys aeneus</i>	White Grouper	وقار		x	x	
		<i>Epiplatys alexandrinus</i>	Golgen Grouper	وقار			x	
		<i>Serranus cabrilla</i>	Comber	شيخ	x	x	x	x
		<i>Serranus hepatus</i>	Brown Comber	شيخ	x	x	x	x
	Siganidae	<i>Siganus luridus</i>	Dusky Spinefoot	بطاطا	x	x		
		<i>Siganus rivulatus</i>	Marbled Spinefoot	بطاطا	x	x	x	x
	Solidae	<i>Microchirus ocellatus</i>	Thickback Sole	شبه موسى بدوائر		x	x	x
		<i>Solea aegyptiaca</i>	Egyptian Sole	موسى	x			
		<i>Solea impar</i>	Adriatic Sole	موسى			x	x
		<i>Solea nasuta</i>		موسى مزركشة			x	
		<i>Solea vulgaris</i>	Common Sole	موسى	x	x		x
	Sparidae	<i>Boops boops</i>	Bogue	موزة		x	x	x
		<i>Diplodus annularis</i>	Annular Sea Bream	سبارس				x
		<i>Diplodus bellottii</i>		وزانية	x			
		<i>Diplodus sargus</i>	Two-Banded Bream	شرغوش حر	x	x		
	Sparidae	<i>Diplodus vulgaris</i>	White Sea Bream	شرغوش رشيدى		x	x	x
		<i>Lithognathus mormyrus</i>	Striped Sea Bream	مرمار	x	x		x
		<i>Pagellus acarne</i>	Spanish Bream	غزيلة برونزية	x	x		x
		<i>Pagellus erythrinus</i>	Pandora	غزيلة حمراء	x	x	x	x
		<i>Pagrus pagrus</i>	Common Sea Bream	مرجان	x	x	x	x
		<i>Sarpa sarpa</i>	Salema	سرب				x
		<i>Sparus aurata</i>	Gilt-head Sea Bream	دنيس	x			

Group	Family	Scientific name	English name	Arabic name	May. 2003	Oct. 2004	May. 2005	Aug. 2007
Bony fish	Synodontidae	<i>Saurida undosquamis</i>	Brushtooth Lizard Fish	مكرونة مخططة	x		x	
		<i>Synodus sours</i>	Atlantic Lizard Fish	مكرونة صفراء	x	x		x
	Tetradontidae	<i>Lagocephalus sceleratus</i>		أرنب ببقع			x	
		<i>Lagocephalus spadiceus</i>	Half-Smooth Golden Bufferfish	أرنب		x	x	x
	Trachinidae	<i>Trachinus araneus</i>	Spotted Weaver	بلامة	x	x	x	
		<i>Trachinus draco</i>	Greater Weaver	بلامة	x	x		x
		<i>Trachinus radiatus</i>	Starry Weaver	بلامة		x	x	x
	Triglidae	<i>Lepidotrigla cavillone</i>	Large-Scaled Gurnard	فرخة			x	x
		<i>Trigloporus lastoviza</i>	Streaked Gurnard	فرخة حمراء	x	x		x
		<i>Trigla lucerna</i>	Tub Gurnard	فرخة		x		
		<i>Trigla lyra</i>	Piper Gurnard	فرخة		x		x
	Uranoscopidae	<i>Uranoscopus scaber</i>	Stargazer	قط	x	x	x	x
		Zeidae	<i>Zeus faber</i>	John Dory	عفريت	x	x	x
Mollusca	Loliginidae	<i>Loligo vulgaris</i>		كاليماي		x		x
	Sepiolidae	<i>Sepia officinalis</i>	Common cuttlefish	سبيط				x
	Sepiolidae	<i>Sepia elegans</i>		سبيط	x	x	x	x
	Octopodidae	<i>Octopus vulgaris</i>	Common octopus	أخطوبوط	x	x	x	
		<i>Eledone moschata</i>	Musky octopus	أخطوبوط				x
		<i>Octopus macropus</i>	Long-legged octopus	أخطوبوط				x
Crustacea	Penaeidae	<i>Trachypenaeus curvirostris</i>		جمبري عجوز (عقر)	x			x
	Portunidae	<i>Panulirus homzrus</i>		أستاكوزا		x		
	Scyllarides	<i>Scyllarus latus</i>	Medit. Locust lobster	استاكوزا				x
	Squillidae	<i>Squilla mantis</i>	Mantis shrimp	شكالة				x
		<i>Oratosquilla Massavensis</i>		شكاله			x	

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