

ACRONYMS

AECID	Spanish Agency for International Cooperation for Development
CA	Collective Actions
CAA	Competent Administrative Agencies
CoM	Collaborative Management
DANIDA	Danish International Development Agency
EEAA	Egyptian Environmental Affairs Agency
GOPP	General Organization for Physical Planning
IAA	Integrated Agriculture-Aquaculture
ICOM	Integrated Coastal and Ocean Management
ICZM	Integrated Coastal Zone Management
IEIA	Integrated Environmental Impact Assessment
IWMD	Integrated Water Management District
IWRM	Integrated Water Resources Management
LCA	Local Competent Authority
MAP	Mediterranean Action Plan
MCO	Matruh Coastal Observatory
MICZMC	Matruh ICZM Committee
MRAG	Matruh Research Advisory Group
MRMP	Matruh Resources Management Project
MSICZM	Integrated Coastal Zone Management Plan for the coastal areas between Marsa Matruh and El Sallum
MSSD	Mediterranean Strategy for Sustainable Development
MWRI	Ministry of Water Resources and Irrigation
NWC	Northwest Coast
NWCIS	Northwest Coast Indicator System
NWCP	Northwest Coast Partnership
NWRP	National Water Resources Plan
PAP/RAC	Priority Actions Programmed Regional Activity Centre of the Mediterranean Action Plan
PPP	Public Private Partnership
PO	Policy Options
SEA	Strategic Environmental Assessment
SPA	Shoreline Protection Authority
TDA	Tourist Development Authority
TS	Technical Secretariat
UNEP	United Nations Environment Programme
WUA	Water User Association
WWII	World War II

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INTEGRATED COASTAL ZONE MANAGEMENT PLAN FOR THE COASTAL AREAS BETWEEN MARSA MATRUH AND EL SALLUM, EGYPT

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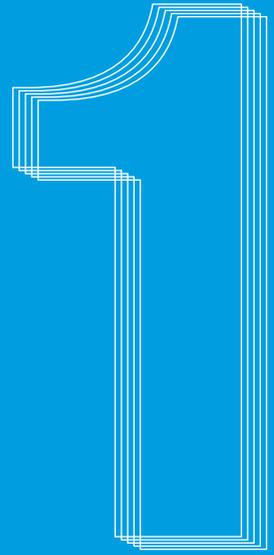


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GENERAL OVERVIEW



The present document, “ICZM Plan for the Northwest Coast”, was elaborated within the Project “Cooperation in the development of an ICZM Plan for the coastal areas between Marsa Matruh and El Sallum” funded by the Spanish Agency for International Cooperation and Development (AECID). This ICZM Plan is an outcome of the collaboration between Spain and Egypt in the framework of the Mediterranean Strategy for Sustainable Development and the Protocol on ICZM in the Mediterranean.

The Project lasted four years (2005-2009) and it comprised two phases. Phase I, which aimed to holistically analyse the coastal system of the study area and produce accessible baseline information for coastal managers (Coastal Diagnosis supported by a GIS and the SWOT Analysis), and Phase II in which these outcomes were used to launch the ICZM planning process. Afterwards, during Phase III of the Project, the final ICZM Plan is to be formally adopted and implemented during the next decade. This Phase is competency of the Egyptian partners.

The Project designed 3 complementary processes to promote integration of information and stakeholders, and encourage the wise use of planning practices. These are namely:

- The ICZM planning process
- The Public Participation process
- The Strategic Environmental Assessment process

These three processes, oriented to develop an ICZM Plan for the study area, were developed through the activities carried out during Phases I and II. Hence, the outcomes of these activities are the basis on which the ICZM Plan is structured.

The following section, Schedule of the Project, introduces these different process carried out during the Project implementation together with the major products developed. The last section of this Chapter introduces the structure of the document, which is made up of 7 Chapters and one Guidelines for the implementation of the Plan.

1.1. SCHEDULE OF THE PROJECT

As aforementioned, the schedule of the Project includes three phases to develop, approve, and implement an ICZM Plan for the coastal areas between Marsa Matruh and El Sallum (MSICZM Plan). Figure 1.1 illustrates the Project schedule which includes the major milestones of the three

complementary processes followed up during Project progression. These processes are briefly described as follow:

- **ICZM PLAN:** the technical work for the design of a management plan.
- **PP:** the continuous feedback of the key stakeholders involved in coastal management and coastal resources use and exploitation to enhance and validate the results of the technical work.
- **SEA:** the strategic environmental assessment to fully integrate the environmental considerations into the preparation and adoption of such plan.

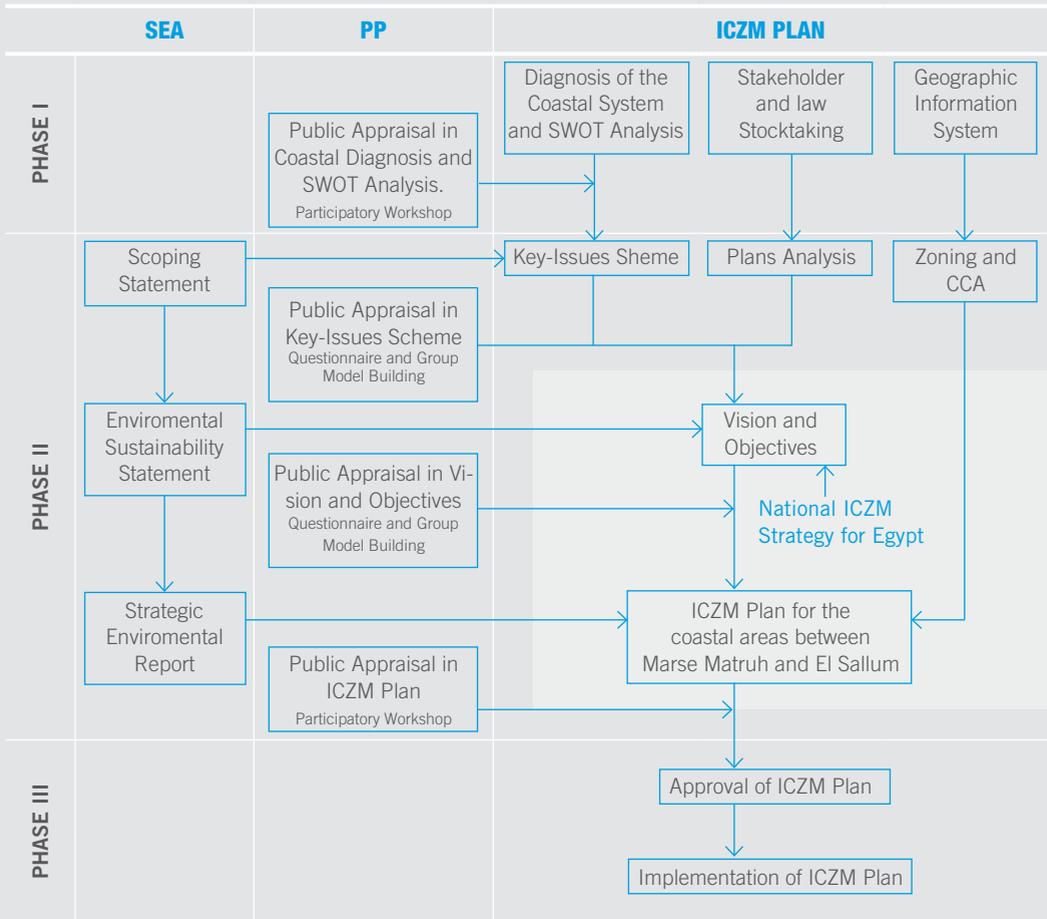


Figure 1.1. Schedule of the Project

During the Project development these processes were coordinated and interconnected to ensure the integration of information obtained in each process. The Project Schedule is explained in the following sections based on the processes developed.

1.1.1. Integrated Coastal Zone Management Planning

The methodologies applied during the ICZM planning process of the coastal areas between Marsa Matruh and El Sallum are based on the recommendations proposed by the Priority Actions Programme Regional Activity Centre (PAP/RAC) of the Mediterranean Action Plan (MAP)¹, part of the United Nations Environment Programme (UNEP), and on the Spanish methodology for the development of river basin and coastal management plans and strategies, adapted from the European Water Framework Directive² and the European Recommendation regarding the implementation of ICZM in Europe³.

In fact, the ICZM planning process carried out included four main steps:

- The integrated diagnosis of the coastal system, which included the analysis of the different coastal subsystems (i.e. physical, ecological, economy, social and administrative subsystems) to determine the major features of the study area compiled by the Diagnosis Factsheets, and summarized in the SWOT analysis, together with the stocktaking of stakeholders and laws to establish who is who regarding the coastal management of the study area.
- The analysis of those key-issues affecting the sustainable development of the study area, which were detected during the Diagnosis of the Coastal System. This analysis allowed identifying the constraining factors and proposing the desired changes in these constraining factors to strengthen the opportunities and reduce their threats.
- The assessment of the existing sectoral plans. This assessment detected conflicts and synergies with the analysed key-issues, and coherences and incoherencies between the sectoral plans and their implementation.
- The proposal of specific areas of activity and objectives. This step was especially important because it allowed introducing the necessary coherence between the ICZM Plan and the National ICZM Strategy for Egypt and the existing policy framework of Matruh Governorate.

(1) UNEP/MAP/PAP: Application of the “Conceptual Framework and Planning Guidelines for Integrated Coastal Areas and River Basin Management”, Split. 2000.

(2) RD 907/2007 regarding River Basin Planning; EU Water Framework Directive 2000/60/CE.

(3) Spanish Strategy in Coastal Sustainability; European Parliament and Council Recommendation concerning the implementation of Integrated Coastal Zone Management in Europe 2002/413/CE.

Additionally, three specific tools have been applied to support the ICZM Plan:

- **Geographic Information System, developed to support the collection, storage, management and analysis of data and information on the coastal zone. The technology allows the storage of the information in a unique geodatabase that can be queried by several users by means of a user-friendly Web Mapping application.**

- **Land-use and Zoning analysis, which detected conflicts and potential for land uses, prioritizing those areas suitable for specific developments, such as agriculture, tourism, natural protectorate or industry, based on the characteristics of the territory.**
- **Carrying Capacity Assessment, which evaluated the limits of the territory for those specific developments to avoid compromising the present and the future quality and quantity of coastal resources.**

The ICZM Plan herein presented includes the outcomes of the Public Participation and the Strategic Environmental Assessment processes and is framed by the National ICZM Strategy for Egypt (Chapter 3).

1.1.2. Public Participatory Process

The public participatory process was promoted to sustain the collaboration of the different stakeholders involved in the management, use and exploitation of the coastal resources. Moreover, public participation needs to be part of environmental decision-making, since⁴:

- participation ensures that local knowledge and experiences are integrated into the planning and management process, giving a better guarantee of the quality and reliability of the identified solutions.
- stakeholders are the best judges of their own interests and therefore should be able to participate in decisions affecting them.
- participation in decisions makes them more legitimate.

The participation and involvement of stakeholders can be carried out in different ways depending on the specific characteristics of the social and administrative system, actually the ICZM planning process requires taking into account the stakeholders' interests and perceptions, integrating them into the Plan.

The public participatory process included:

- Public appraisal on the Diagnosis of the Coastal System, on the Key-Issues Scheme and on the Preliminary ICZM Plan, in order to enhance their conclusions and validate their proposals. Two Participatory Workshops were held, one in Marsa Matruh (July 2007) and another one in Cairo (November 2009), to balance the recognition of both regional and central stakeholders; the Group Model Building exercise was also carried out at both levels to obtain regional and central mental shared models.
- Several individual and collective interviews with key-stakeholders in order to sustain the elaboration of the Diagnosis of the Coastal

(4) Human dimensions of coastal management in the Western Indian Ocean region. Editorial Ocean and Coastal Management 2004; 47: 299-307.

System, the Key-Issues Scheme, the Areas of Activity and Objectives and the Preliminary ICZM Plan during the planning progress. These individual and collective interviews were carried out both in Marsa Matruh and in Cairo to include central, regional and local stakeholders. The interviews aimed to explore and identify conflicts and synergies regarding the analysis and the proposals carried out.

Actually, public information and consultation activities were carried out during the entire planning process and its activities.



Figure 1.2. Public participation processes carried out during ICZM planning process

Public appraisals have been carried out in many different ways, such as Participatory Workshops, Questionnaires, Group Exercises, Key Interviews, depending on the information needed, the stakeholders targeted and the circumstances and goals of each public appraisal.

1.1.3. Strategic Environmental Assessment

The Strategic Environmental Assessment (SEA) is an evaluation of the planning process carried out and its results, integrating environmental, social and economic considerations into the final Plan.

The SEA, which is required in Europe and other world-wide regions before the final approval of policies, plans and programmes, started at the beginning of the planning process. Hence, the SEA ran parallel and complementarily to the ICZM planning process to evaluate the following:

- the relevant environmental aspects affected by the plan and their possible evolution,
- the contents and main objectives of the Plan related to other plans and programmes,
- the foreseen measures needed to prevent, reduce and counteract any significant environmental negative effects related to the plan implementation.

Three main deliverables have been produced during the SEA process. These are described as follows:

- Scoping Statement: it assisted in the analysis of the Key-Issues, and its objective was to explore the environmental component of the key-issues, identifying the presence or absence of interactions with the environmental conditions, with other sectoral plans and with the environmental protection commitments.
- Environmental Sustainability Statement: it contributed to the selection of the ICZM Plan objectives and actions, and its objective was to improve the analysis of the different management strategies, exploring their measures, environmental impacts, alternatives and environmental selection criteria.
- Strategic Environmental Report: it was conceived as part of the ICZM Plan. This report evaluated the SEA process, how their considerations have been integrated into the ICZM Plan, the public participation process which carried out and how their inputs have been incorporated into the ICZM Plan.

The Strategic Environmental Assessment evaluates not only the Plan but also the planning process itself, paying special attention to how the public participatory process was carried out and their inputs incorporated into the Plan.

1.2 STRUCTURE OF THE ICZM PLAN

The structure of the present Plan is inspired by the ICZM Plans and Strategies of several countries carried out by the Coastal Research Center of the University of Rhode Island⁵ in collaboration with the government of these countries.

(5) Coastal Resource Center/University of Rhode Island:
- National Integrated Coastal Environment Management Strategy of Tanzania.
- Towards Integrated Management and Sustainable development of Zanzibar's Coast.
- Coastal Zone Management Plan, Sri Lanka.
- Proposal for the coastal zoning and development of Ecuador.
- Strategy for the Management of Xcalak Zone, Quintana Roo, Mexico.

The MS ICZM Plan is then structured into eight Chapters. This first chapter introduced the schedule followed during the Project and the methodology applied during the elaboration of the ICZM Plan.

Chapter 2 characterizes the coastal system of the study area and its main constraining factors and key-issues. Chapter 3 presents the policy context of the ICZM Plan within the national and international framework and the analysis of the existing regional sectoral plans and its conclusions.

Chapter 4 describes the ICZM Plan, the model of nested governance system proposed together with the communication strategy for the ICZM process in the study area. Chapter 5 discusses the implementation process of the ICZM Plan through its Strategic and Operational Objectives, and illustrates it in several time-bounded roadmaps.

The evaluation and monitoring system developed for the adaptive management of the ICZM Plan is then described in Chapter 6, while Chapter 7 is the evaluation of the Strategic Environmental Assessment of the ICZM Plan carried out, according with EEAA, by an external institution to audit the planning process. Finally, the Guidelines for the implementation of the Plan compile the following information:

- the 50 Action Factsheets,
- the four Roadmaps for ICZM Plan implementation and their milestones,
- the breakdown of expenses and the estimated cost per year,
- the Northwest Coast Indicator System to monitor the sustainable development of the study area
- the ICZM Plan Progress Indicator System to evaluate the plan implementation.

2

STUDY AREA CHARACTERIZATION



Matruh is the North-Western Egyptian Governorate. It is a border Governorate and one of the largest in Egypt, since it extends along 450 km of the Mediterranean coast up to the Libyan border and 400 km deep into the southern desert. With a population approaching 270,000 inhabitants, a considerable portion of the population (62.75 %) lives in urban areas, while the rest still inhabit the rural areas. Nomads represent over 85% of the total population.



Figure 2.1 Study area

The study area encompasses the coastal zone between the cities of Marsa Matruh and Sallum on the Libyan border. This coastal stretch includes four marakhaz¹ of the Governorate, which are described in the following table:

District	Total Area (Km ²)	Populated Area (Km ²)	Population Number	Main Town Location	Relevant Economic Activity	Main Coastal Feature
Sallum	4 500	452	11 676	Coastal	Trade	Long beach
Sidi Barrani	7 500	6595	28 049	Coastal	Agriculture	Rocky outcrop
Neguila	2 200	1968	13 281	Inland	Agriculture	Rocky outcrop
Matruh	13 800	690	100 132	Coastal	Tourism	Lagoon
Total	0	1 998.3	0			

(1) Markhaz is an administrative unit similar to District. Marakhaz is the plural form.

Table 2.1. General Description of the study area (Final Coastal Diagnosis – Phase I)

2.1. COASTAL DIAGNOSIS

An exhaustive study of the coastal zone has been carried out during Phase I. The study included an analysis of the physical, ecological, social, economic and legal-administrative coastal subsystems in order to have a holistic view of the area. Actually, this analysis provided the preliminary diagnosis and the strengths, weaknesses, opportunities and threats of the coastal system, which are compiled in the Coastal Diagnosis (Annex I).

The main ideas and conclusions from the Coastal Diagnosis are presented in this section and they cover the following epigraphs:

- Physical subsystem
- Ecological subsystem
- Social subsystem
- Economic subsystem

The administrative and legal subsystem is not included in this section since it is discussed in Chapter 3 of this document.

2.1.1. Physical subsystem²

The Northwest Coast is characterized by ‘arid Mediterranean climate with mild winters’. The annual average values of temperature and precipitation are 19°C and 130mm and the scarce rainfall only occurs in the winter season. Important differences can be found between the inland and the coastal area of Matruh Governorate, since the proximity of the sea significantly reduces the temperature and increases precipitation in the entire study area. Most of the local settlements and economic activities are located within the first 10 kilometres of the shoreline. The Sahara desert is southwards of the study area, actually most of its southern limits are described as “transition to Sahara”.

(2) Chapter 2 - Coastal Diagnosis and SWOT Analysis – Annex I

(3) Photography courtesy of G.Codrón-Carracedo-Diego)



Figure 2.2. Sallum bay, coastal plain and Marmarica Plateau³.

The landscape of the Northwest Coast is distinguished by low reliefs and a mild topography. The main geomorphological units found between Marsa Matruh and Sallum areas are a northern low coastal plain and a southern elevated tableland (Marmarica Plateau). The tableland elevation varies from 80 to 120 metres above the current sea level and slopes gently north towards the sea and east to the Nile delta.

The absence of some natural resources such as water and fertile soils, the strict military control and the presence of WWII mines justify the absence of significant local settlements in the tableland.

The tableland is crisscrossed by an important number of torrential rivers (wadis), acting during the rainy seasons as active drainage arteries. The beds of these streams is occupied by thick alluvial deposits and constitute a subsidiary aquifer of limited potential. They are also some of the most fertile soils found in the study area.

Figure 2.3. Cement dike in developed wadi and construction of a rainwater harvesting tank⁴.



**Many of these wadi have been developed for rainwater harvesting and for agriculture production, even if many of them are still undeveloped wadi.
Only 2-5% of rainfall is utilized.**

The coastal plain occupies the area between the tableland to the south and the Mediterranean coast to the north. Its width varies from a few meters in the west, where the tableland reaches the shoreline and the coastal plain practically disappears, to 10 to 30 kilometres in the east. The plain slopes generally towards the north and exhibits elevation ranging from 13 meters above sea level to the mean sea level (MSL) and even slightly below.

The coastal plain is highly influenced by human activities. It has been used since ancient times for animal herding and currently agriculture practices are well spread along the plain. Most of the local settlements are herein located.

(4) Photography courtesy of Desert Research Center

Additionally, there are series of elongated ridges running parallel to the present shoreline. These ridges form elongated shallow depressions that act as collecting basins for the surface water runoff. These depressions are filled with alluvial deposits and favour the growth of natural vegetation being, in many cases, used for agriculture purposes. Towards the seafront, these depressions are occasionally flooded with seawater and end up as saline lagoons (*sabkhas*) where salt tolerant plants are widely distributed.



Figure 2.4. Maaten El-Negila and El Sallum sabkha³

The coast is generally sandy with rocky outcrops that enclose small sandy pocket beaches. Sidi Barrani is the only *markhaz* with a predominantly rocky shore. It is found in an area 10 km west and 40 km east of Sidi Barrani.



Figure 2.5. Sand dunes at Ras Umm El Rakham and Rocky outcrops at Neguila markhaz³.

There are three important stretches of long beaches backed by high and wide sand dunes. Two of these beaches are located west of Marsa Matruh, and the other one is east of Sallum. The typical sand of the coastal area is white carbonated and 'medium to fine' size grain, compared to that of the inland dunes, composed of reddish brown to yellow fine sand and alluvium derived from older sand formation coming from the tableland.

The dune system constitutes the major reservoir of sand, which drifts to the adjacent beaches by the strong westerly winds that predominate in the study area.

Shoreline erosion is quite obvious in specific stretches, being attributed to the halt of coastal sand movement, dune fixation and sand quarries.

2.1.2. Ecological subsystem⁵

Egypt is located in a crossroad between two continents (Africa and Asia) and two seas (Mediterranean and Red Sea). As a result, a vast flora biodiversity with many species belonging to four different phytogeographical regions (African Sudano-Zambesian, Asiatic Irano-Turanian, Afro-Asiatic Saharo-Sindian and Euro-Afro-Asiatic Mediterranean) exists.

In spite of the hard environmental conditions of the study area, many flora species have been registered in its different biotopes (coastal dunes, *sabkhas*, non-saline depressions, rocky ridges, *wadis*, inland siliceous deposits, reed swamps). The main flora biodiversity of the Northwest coast of Egypt belongs to the *Spermatophyta* Division, with the presence of 38 Families, encompassing more than 200 species.

The Matruh Resource Management Project (MRMP) identified almost 1070 taxa, representing almost half of the Egyptian flora, and concluded that 90% of the species are found within 25 km of the seashore, stressing the relevance of the coastal environment.

Coastal sand dunes play an important role in terms of biodiversity, protecting the coast from erosion and flooding, and concentrating fresh-water in the deeper layers. *Sabkhas* are highly productive ecosystems, containing a rich diversity of species, nutrient recycling capability and niche specialization. Moreover, these wetlands and depressions support a wide variety of wildlife (birds, plants and other animals) and they are the most important habitats for migratory birds.

(5) Chapter 3 - Coastal Diagnosis and SWOT Analysis – Annex I

Red foxes and some wild cats are reported to be in the area. The Egyptian Tortoise (*Testudo Kleinmanni*), one of the world's most endangered tortoises, is endemic of the study zone.



Figure 2.6. Terrestrial and marine biodiversity⁶

Sea turtles were found to nest in the study area. All tracks of emerging nesting turtles were identified to be loggerheads, *Caretta caretta*. These are the first records of sea turtle nesting in this part of the Mediterranean however nesting numbers were low when compared to other parts of the Mediterranean.

As for the marine environment, there are seagrass meadows of *Posidonia oceanica*, *Cymodocea nodosa* and *Halophila stipulacea*. Commercial sponge beds are lying in the inshore neritic zone within the continental shelf between 15 and 50 meters in depth.

Seagrass meadows are threatened, damaged or destroyed in many parts of the coastal areas down to 10m depth, due to human impacts caused by urban development, oil pollution, ballast water introduced from different tankers and extensive fishing activities.

The sponge fisheries are still suffering the consequences of the collapse occurred in 1988.

2.1.3. Social subsystem⁷

The population density in the study area is very low, although Matruh population growth rate is slightly higher (3%) than the national growth rate (2.8%). There are two different social groups: the Bedouins (native population) and the immigrants from the Nile Valley. The Bedouins, who used to be nomads, are nowadays mostly settled in rural areas and in the desert. The immigrants live in urban centers and are mainly employed in Government services.

(6) Left photography courtesy of G.Codrón-Carracedo-Diego; right photography anonymous.

(7) Chapter 4 - Coastal Diagnosis and SWOT Analysis – Annex I

Bedouins maintain their inherited knowledge, both material (handicrafts, housing pattern, tools and clothing) and non-material (poetry, singing, dancing and culture).

Bedouin women play a crucial role in their communities, being responsible for maintaining the family affairs, managing the household income and many other related issues.

Social services for the local communities are generally sufficient, when considering the size of the population. But available staff, equipments and capacities are not prepared to meet neither the needs of the local communities nor the needs resulting from a harsh desert environment.

Electrical network is in place for the study area, although electricity is only supplied along the highroad, and many rural settlements, located far away from this communication road, are not supplied.

Drinking water is mainly distributed by trucks which are supplied by desalination plants located in Sidi Barrani and Sallum. Marsa Matruh is connected to Alexandria pipeline and most of the rural areas have rainwater harvesting tanks.

The statistics concerning the educational status of the population are: 2.3% of the population had a university degree, 18% received high school certificates, 46.7% were classified as “can read and write” and illiteracy rate was around 33%. The illiteracy rate is especially higher among adult women. It is worth noting that education has recently received considerable attention from the Government. Although the number of students attending schools has increased, the quality of educational services provided is lower than expected.



Figure 2.7. Bedouin farmers and Bedouin handicraft production⁸

Local communities are relatives of those existing in the Libyan border, therefore trade of goods and services is relatively common in the Sallum border. The strategic situation of the study area, next to Libya and to the sea, increases the presence of the Army, which actually is one important landowner in the region.

Mines and explosives from World War II (17.5 million landmines) can still be found in Sallum, Sidi Barrani, Marsa Matruh, Ra's Al-Hekma and Alamein areas.

Many development projects which could have addressed the growing population problem in the Governorate providing land for tourism, agriculture, herding or gas and oil processing, have failed due to the presence of mines and explosives.

2.1.4. Economic subsystem⁹

The economy of the study area mainly depends on traditional activities, such as agriculture and animal husbandry, although tourism is also a very important activity for the region, especially in Marsa Matruh.

Agriculture is essentially based on fruit trees such as olive and fig trees, on cereals such as barley and wheat, and vegetable growing. Agriculture production depends on water availability during the rainy season due to the scarce presence of irrigated crops, these being mainly vegetables. The irrigated lands are found scattered near wadi beds, non-saline inter-ridge depressions and coastal sand dunes, where water availability permits irrigation with underground resources.

The processing of agricultural products mainly includes dried figs, fig marmalade and olive pickles, which are produced by Bedouin women and represent a means for long term conservation of agricultural products and an extra source of income.

Livestock production, focusing on sheep and goats, is semi-nomadic and relies on natural vegetation. This semi-nomadic animal husbandry generates land use conflicts with agricultural activities. Animal husbandry of camels, horses and desert falcons, is also present in the region, and its production implies an added value on the price due to the animal strains, characters and even the necessary training. Presently, there are only a few Bedouin families with the ability and the know-how to carry out these traditional activities.

(9) Chapter 5 - Coastal Diagnosis and SWOT Analysis – Annex I

Tourism in Marsa Matruh is popular for Egyptians coming from the Nile delta. In fact, the warm climate, quality of the beaches and attractiveness of the seascape have led the North coast of Egypt to be one of the most demanded destinations for national tourism.

Nowadays, almost the entire coastal stretch between Alexandria and El Alamein has been sold to developers to construct numerous resort villages, and this trend has already reached the coastal areas surrounding Marsa Matruh.

Following the above-mentioned trend, the western coast of Marsa Matruh is being transformed into an important tourist destination and there are several second residences and hotel resorts. However, the tourist constructions growth only comprises the first 20 kms from the town of Marsa Matruh.



Figure 2.8. Residential construction on sand dunes and coastal defences¹⁰

Tourism in the Northwest Coast has registered an important growth during the last decade and doubles the population of Marsa Matruh during the summer, generating important economic revenues.

Fishing is carried out mostly in the form of small scale fisheries and does not represent a significant economical activity due to its scarce influence on the welfare of the population, in terms of income and labour force. Marsa Matruh and El Sallum are the only urban centres with fishing activity. Bedouins are not historically interested in marine resources and fishing is an activity recently encouraged by Government since there is an important fishery potential in the study area with 34 commercial species out of the 49 species recorded in 2000-01.

(10) Photography courtesy of Sanò-G.Riancho

Medicinal plants are very important for the local population, especially in remote areas, as they strongly rely on traditional remedies. Every local community has one or more *Hakims* (folk healers) and at least one member in each family has enough knowledge to use medicinal plants in emergency situations. This traditional knowledge has allowed many Bedouins to acquire the experience and skills to know the plant's names, the locations and the gathering methods. In many cases, children are in charge of collecting plants while herding the sheep and goats in the area. The *Hakims* however are the only ones that know the rare and endangered plants, as well as the habitats in which they grow, enabling their collection. Although the main purpose of gathering plants is medicinal or for the family's own use, they are also sold to herb dealers and druggists to obtain an extra source of income.

2.2. KEY-ISSUES ANALYSES

The I Participatory Workshop, held in Marsa Matruh, July 2007, validated with local and central stakeholders the Coastal Diagnosis and SWOT Analysis. Moreover, it determined a set of 28 Key-Issues influencing the current development of the study area (Table 2.2.)

Area of Interest	Key-issue Reference	Key-Issue	Area of Interest	Key-issue Reference	Key-Issue
Urban Development	1	Urban expansion	Natural Risks	15	Coastal erosion
	2	Shoreline development		16	Flooding
	3	Waste management		17	Climate change
	4	Water management	Environmental Management	18	Sabkhas and wetlands
	5	Energy supply		19	Beach and wadis
	6	Roads and transportation		20	Coastal dune systems
7	Agriculture	21		Marine areas and islets	
Opportunities for Economic Development	8	Fisheries and aquaculture	Sociocultural Issues	22	Traditional knowledge
	9	Industry		23	Properties rights
	10	Animal production		24	Military areas
	11	International tourism	25	Mine fields	
	12	Local tourism	Governance	26	Administrative coordination
	13	Renewable energies		27	Capacity building
	14	Family business		28	Stakeholders involvement

Table 2.2. Area of Interest and Key-Issues emerged during the I Participatory Workshop

These Key-Issues are to focus the ICZM efforts; however, the first ICZM Plan requires an initial small set of Key-Issues to focus energy and capabilities, in line with the draft National ICZM Strategy for Egypt.

Once the first ICZM policy cycle is finished, more issues shall be integrated into the following ICZM plan.

Different analyses were carried out to select the set of Key-Issues to be part of this ICZM Plan. The analyses included expert diagnoses and public consultation processes to balance expertise and stakeholders' perception and knowledge. These analyses, which are compiled in Annex II, are briefly described as follows:

- The Expert Diagnosis studied the current driving forces governing the economic development of the study area and how they should evolve to lead the existing development and the coastal resources use and exploitation to the principles of sustainability. It provided sound scientific knowledge in specific issues.
- The Analysis of Sectoral Plans revised existing plan objectives, measures and priorities. It detected conflicts and synergies between Key-Issues and sectoral plans and between sectoral plans to determine which issues require specific coordination measures and which ones need to be planned. This Analysis is further detailed in Chapter 3.
- The Key-Issues Questionnaires allowed analysing the stakeholders' perception regarding the importance and influence of each Key-Issue and it contributed to determine priorities for planning. Its results are shown in Figure 2.9. where the most important and influential Key-Issues are highlighted.
- The Group Model Building exercises helped to construct the shared mental model and focussed the analysis on the relationships between the key-issues identified. It allowed detecting the leverage points¹¹.

(11) Leverage Point is a sensitive sector which can trigger broader changes to the overall system.

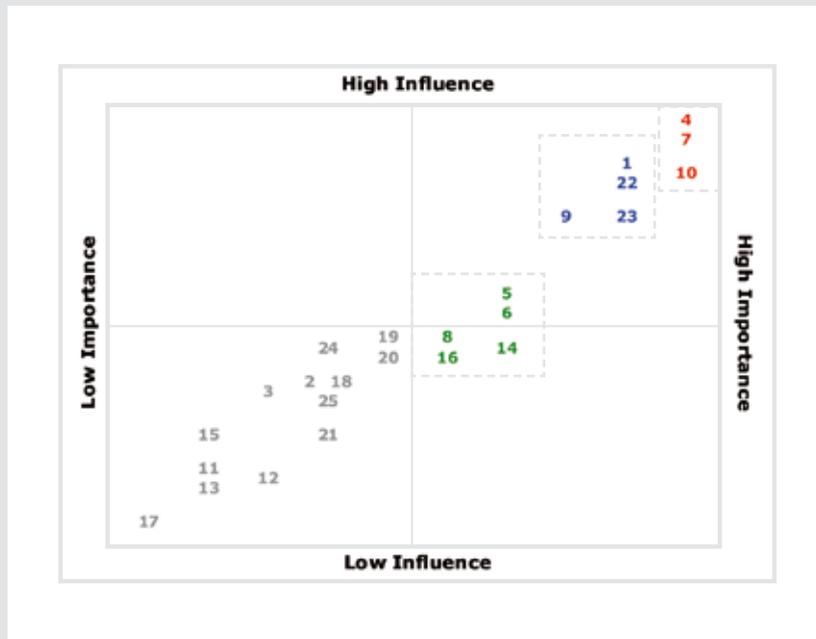


Figure 2.9. Stakeholders' perception regarding Importance and Influence

The conclusions of these analyses allowed building the final set of Key-Issues that are part of the ICZM Plan. These Key-Issues, which are described in the following sections, are as follows:

- Water Management
- Primary Activities
- Tourism Development
- Living Conditions in Southern Livelihoods
- Property Rights

2.2.1. Water Management

Water requirements in the study area are still not met. In fact, water drainage and wastewater treatment are the main deficits in urban areas, while ensuring safe water access and basic sanitation are the most urgent insufficiencies in rural communities. In addition, important economic activities in the study area are dependent on water availability and rainwater management. The Northwest Coast receives enough rainfall to improve local development and ensure water access nonetheless only 2-5% of total rainfall is harvested.

The Key-Issues Questionnaire concluded that Water, together with Agriculture and Animal Production, are the most relevant Key-Issues for the study area. Moreover, many sectoral studies and plans are addressing water resources (Drinking water, Sanitary water, Irrigation) and certain conflicts between these plans and studies were identified.

Water supply

Drinking water supply is covered in Marsa Matruh, Neguila, Sidi Barrani and Sallum, but only Marsa Matruh is connected to the Nile basin through the Alexandria pipeline. Sidi Barrani and Sallum have desalination plants. However, both are of an old design, are under-dimensioned and therefore need to be enlarged and improved. Additionally, the water supply does not cover the whole current urban area or other rural settlements within the markaz area. Therefore, water is supplied by trucks in the urban areas and the existing rainwater harvesting tanks and wells are the main source of drinking water for most of the rural settlements. In fact, isolated settlements are very vulnerable to droughts.

Sanitation

Water sanitation is also required in almost the entire study area. Sallum, Sidi Barrani and Neguila require treatment plants for wastewater. Marsa

Matruh has a wastewater treatment plant but it is under-dimensioned; actually some events of wastewater discharge affecting the bath quality of the lagoon water have been registered during the tourist season, when the floating population doubles the water treatment requirements. Besides, projections regarding demographic growth for the next 20 years in the study area are considering an increase of 400%¹². In conclusion, urban areas require an urgent modernization of water related infrastructures.

Rural settlements, especially isolated settlements, commonly require basic sanitation. Basic sanitation is the lowest-cost technology (such as public sewer connection, septic system connection, pour-flush latrine, simple pit latrine, ventilated improved pit latrine) ensuring hygienic excreta and sullage disposal and a clean and healthful living environment both at home and in the users neighborhood. Actually, access to basic sanitation includes safety and privacy in the use of these services¹³.

Natural Risks

Floods are frequent phenomena in the Northwest Coast since the rainfall pattern is torrential, and there are urban areas built on the existing wadi found in Marsa Matruh and Sallum. These vulnerable areas are well-known by the local population and they were highlighted during the workshops held with the zoning team. Actually, two different vulnerable areas were detected, one due to constructions on wadi and inter-ridge areas and the other one due to storm surges and sea level raise.

(12) Matruh Development Plan 2002 – 2022. Matruh Governorate.

(13) World Health Organization. Water Sanitation and Health Program. Health through safe drinking water and basic sanitation. http://www.who.int/water_sanitation_health/mdg1/en/index.html

The geographical information regarding areas vulnerable to floods are compiled in the Annex IV and included into the GIS developed during the Project.

- Urban areas
- Coastal erosion
- Sea level Rise
- Floods

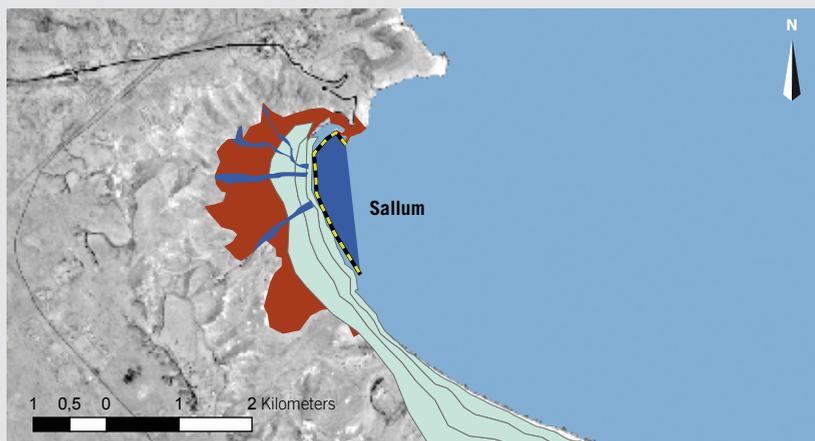


Figure 2.10. Flood risk areas in Sallum (GIS MSICZM PLAN)

Figure 2.10 shows the example of vulnerable areas of El Sallum, with an important percentage of urban area classified as vulnerable. Recommendations and policy proposals regarding urban land-use and zoning are found in Annex IV.

Economic uses

The main economic activities in the Northwest coast are also highly dependent on water availability, since agriculture is rainfed and livestock is needy of pasture lands, also reliant on rainwater. Current and potential industry is direct and indirectly dependent on rainwater since industrialization needs water for industrial processes and it is based on agriculture production.

2.2.2. Primary activities

Most of the local population is employed in primary activities, especially in agriculture and animal production. Actually, farming practices in the study area are considered mixed farming as they involve crops, livestock and trees. Crops and livestock production are still being promoted by the government and both have also been assisted by several international cooperation projects (World Bank and Food and Agriculture Organisation). Nevertheless, agricultural and animal production in these semi-arid lands are facing increasing challenges as a result of the progressive soil degradation, mainly due to decline in the soil organic matter caused by wind and water erosion, deterioration of the soil structure, salinization and acidification¹⁴.

The Key-Issues Questionnaire detected that the primary activities are between the major concerns of local population, in fact, Agriculture and Animal Production are two of the most relevant Key-Issues and Fisheries and Aquaculture are classified as relevant Key-Issues. Additionally, many sectoral studies and existing Plans are significantly affecting these activities, the local population's self-sufficiency in food production being one of the main targets for the study area.

Agriculture

The Northwest coast of Matruh has a significant agricultural potential compared to that of inland areas (Marmarica plateau and Qattara depression), nonetheless natural resources in the study area, such as water and soil productivity, are still limiting factors for agricultural production.

Irrigation water is not available in large parts of the four marakaz and rainfed crops and pasture yields are both low and uncertain,

(14) Koohafkan P & Stewart BA. Water and Cereals in Drylands. Food and Agriculture Organisation, 2008.

however, small amounts of additional water would significantly increase yields in drylands at very high water-use efficiencies, if other factors such as crop selection and plant nutrients availability were adequate⁹

The agricultural production is focuses mainly on four products, two ce-reals (barley and wheat) and two fruits (olive and figs). This agricultural production is appropriated for local conditions, although diversification in production, especially promoting vegetables garden, is recommended to encourage the achievement of self-sufficiency. However, during the zoning fieldtrip, different soil degradation processes due to salinization, acidification and erosion, were registered as a consequence of farming practices which were not adapted to local characteristics and conditions, exploitation of non suitable soils and overexploitation of groundwater re-sources. Furthermore, these degradation processes are also exacerbated due to the occurrence of droughts, characteristic of aridlands.

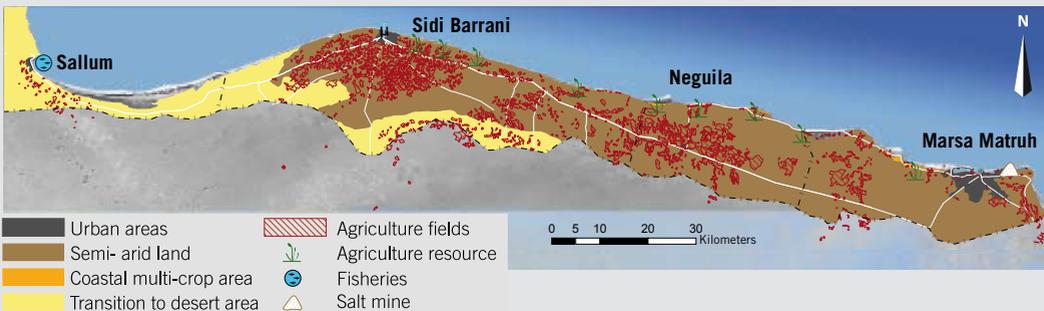


Figure 2.11. Agricultural resources. Land-use analysis (GIS MSICZM PLAN)

Additionally, the existing crop fields are planned to be enlarged, almost doubling the total agricultural surface and expanding current practices along the study area are to increase hunger and poverty because of the absence of large fertile soils suitable for extensive agriculture. Therefore, these measures instead of augmenting agriculture production are to contribute to soil degradation and increase the number of agriculture livelihoods vulnerable to droughts and hunger.

During the zoning fieldtrip specific conflicts were identified since the most productive soils (wadi deposits and interridge depressions) are in many cases being lost due to uncontrolled exploitations. Actually, effective zoning and land use allocation are required due to the scarce percentage of productive soil and their significance in supporting the local economy and welfare.

The major conflicts in productive lands are the urban sprawl close to Marsa Matruh and Neguila, the development of infrastructures interrupting natural freshwater flow in wadi and the overgrazing due to animal production.

Finally, soil management will ensure the agricultural activity and allow to increase the agricultural productivity if rainwater management increases water availability for agriculture activities. In fact, the Desert Research Center and the Matruh Resources Management Project of the World Bank have already achieved important results in community development through funding and supporting research and innovating activities on agriculture development, carrying out initiatives for sustainable watershed management, training local livelihoods for community development and diversification of economic activities and local productions. They have already successfully implemented pilot cases and local initiatives having achieved important local progress. And consequently, they are to play a key role in the Northwest Coast development since they can significantly contribute to a more sustainable development by means of a wiser resources use, respectful with local heritage and economically viable.

Animal Production

Animal production is one of the most traditional activities in the study area because of the semi-nomadic lifestyle of local populations. In fact, there is an indigenous sheep, called Barki sheep, adapted to aridlands and desert areas whose meat is very well-regarded in some Middle Eastern countries, such as Jordania and Saudi Arabia.

The production is mainly based on sheep and goats, which generally are inbred and occasionally present some genetic defects. Therefore, the diversification of animal production is recommended since it is too focused on only two species, and also the investment in research, promotion and processing of Barki production, which is to add value to local animal production.

Scarcity of appropriate pasture lands is threatening animal production, since during the zoning fieldtrip many overgrazed areas were observed and conflicts between local populations regarding the use of pasture lands were also registered in some of the local workshops held in the study area.

Aquaculture

Matruh development plans include the development of aquaculture, since it is regarded as a promising economic activity, either marine-

based, in the Gulf of Sallum, or land-based in the existing sabkhas. Actually, there is an aquaculture project in Sallum Gulf to develop 200 feddans for fish farms and regarding land-base aquaculture, there are currently rudimentary small-scale and primitive fish farms in the sabkha of Neguila which present a significant production, enough for self consumption and selling their surplus.

Provisions of Matruh Development Plan include the creation of fish farming units in most of the existing sabkhas. Hence, wise management practices and carrying capacity limits should be introduced into such developments since these sabkhas are providing important ecological services and they are one of the most fragile ecosystems in the study area.

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Fishing

Lack of traditional contact of local population with maritime activities impedes to achieve the potential involvement on fishing activity, in fact fishing is not an activity largely developed by local communities. There are only two local ports, in Marsa Matruh and El Sallum, and fishing resources are mostly exploited by fishermen coming from surrounding areas, such as the western Nile delta.

Local populations are not used to sailing nor do they take advantage of marine resources. Actually, Matruh Governorate is encouraging fishing activity since the deep water of Gulf of Sallum has a significant potential to support an increased fishing effort. Nonetheless this effort needs the introduction of the best available fishing practices (selection of gears, legal gears, keeping close season and protecting nursery areas).

The declaration of specific Natural Protectorates in highly sensitive areas, such as the canyon of Sallum Gulf; the sabkhas between Sallum and Sidi Barrani; the surrounding areas around Taifa and Ishaila islets, it is very important to ensure the ecological wealth of the local fisheries. In fact, these Natural Protectorates are to play an important role to ensure the maintenance of their environmental, social and economic fishing resources use and exploitation.

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Other factors influencing fishing activities are the open access regime, which is endangering the good health of the Gulf of Sallum ecosystem and impeding a sustainable fishing activity, and the absence of port facilities for fishing activity as refrigerators for the catch, which halt the development of a competitive fishing activity.

Agro-industry

Primary activities are the major potential for industrialization of the study area (agroindustry). Wadi deposits and interridge depressions are the most fertile soils in the study area, and they present enough farming potential for a small-scale agroindustrial development. In fact, there are several processing units of agricultural production, such as figs and tomato marmalade. Besides, local and tourist demand are under-exploited market for local production and they allow the creation of new jobs opportunities, new sources of incomes and auto-financing new development opportunities.

Local resources allow a self-sustained development, but diversification of local production should be a mid-term objective since the current model of local production is excessively based on five products (barley, wheat, figs, olives and barki sheep). Actually, diversification of production would increase the resilience of the local economic development, reducing their vulnerability to droughts and plagues.

2.2.3. Tourism Development

The Key-Issues Questionnaire showed that tourism is not perceived by stakeholders as important or influential in itself, however the Group Model Building exercise highlighted the relations that tourism activity has with many other key-issues of the study area. In fact, Tourism was identified as a leverage point of the Northwest coast. Two different groups of Key-Issues are affected by tourism. The following are classified as important and influent:

- Urban expansion
- Traditional knowledge
- Energy supply

- Roads and transportation
- Family business

The second group is made of those Key-Issues of medium influence and importance for the study area:

- Shoreline development
- Sabkhas and wetlands
- Beach and wadis
- Coastal dune systems

The analyses carried out during the coastal diagnosis and the participatory process concluded that tourism can significantly contribute to sustainable local development, since there are numerous natural and cultural resources for tourist development.

Current tourist activities are mostly focussed in the shoreline and based on the regular beach and sun products. In fact, the demand for tourism is growing and more coastal areas are being transformed by tourist related constructions.

Two different tourism developments are observed in the study area, “residential” and “service tourism”, and both are present in Marsa Matruh markaz. Residential tourism is present in a large portion of the Egyptian Mediterranean coast, from Alexandria to Alameen. This tourism consists of private resorts and villas made up of a number of privately owned chalets or flats, which are linear constructions parallel to the seashore. Helmy established some basic characteristics of this tourism model¹⁵:

- separate and functional tourist villages, isolating the tourist population from local urban areas and consequently limiting their economic incomes;
- most resorts cannot be used by other tourists as they are exclusive to owners of the resort units. So, they are only used a few weeks all the year around;
- provision of short run benefits to developers but few social and economic long-term benefits to local communities.

Residential tourism in the study area is mainly found on the eastern side of Marsa Matruh and surrounding the lagoons. On the other hand, service tourism is found in the urban area of Marsa Matruh and the western beaches as Obayeed. Service tourism is referred to accommodation and other marine activities and services required by tourists. This tourism is characterized by:

- more integrated constructions in urban areas or into the environment;

(15) Helmy Eman M. Tools for Tourism development in the Egyptian Northwest Coast: a Sustainable Development Approach. Egyptian Journal of Tourism & Hospitality, 2004: 9.

- sustaining other economic activities related to tourist market;
- important disruptions on job market and local economic activities provoked by seasonality in tourism.

During the zoning fieldtrip, different conflicts due to uncontrolled tourism development were observed. In fact, effective land-use policies shall be promoted to reduce land-use conflicts and increase synergies between economic market, local benefits, and environmental impacts.

Uncontrolled tourism development is creating conflicts because of:

- **not considering setback lines, installing many constructions in vulnerable areas to floods and erosion processes and in sediment reservoirs increasing erosion problems;**
- **consuming the scarce productive soils of the northwest coast, sabkha deposits and the interridge depressions;**
- **increasing pressure on common infrastructures, such us health system, wastewater treatment plant, transportation networks between the most demanded natural areas;**
- **threatening sensitive coastal ecosystems such as coastal dune systems and coastal lagoons.**

Besides, tourism development does not only have to ensure the provision of basic needs to their tourists but also should contribute to ensure that these basic needs are provided for a higher percentage of the local community. In fact, water, energy and social services need to be planned in advance to the creation of specific tourism developments.

On the other hand, ecotourism, which still is not present in the study area, is regarded as an option to ensure that tourism contributes to social and economic local development as well as promote environmental wise management of ecological sensitive systems.

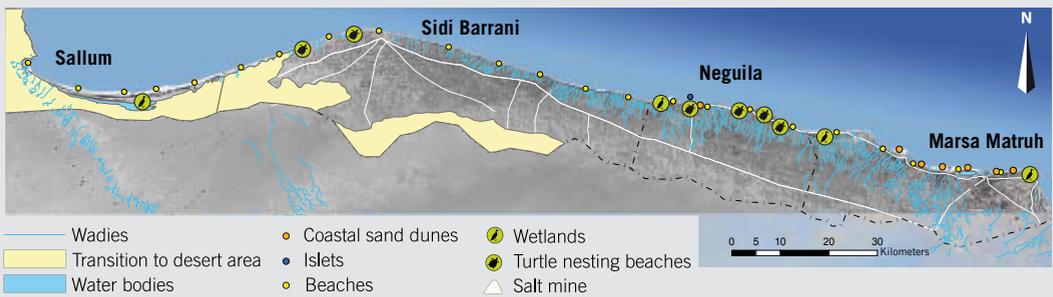


Figure 2.12. Tourist resources of the Northwest Coast (GIS MSICZM PLAN)

Ecotourism is responsible travel to natural areas while preserving the environment and trying to improve the well-being of local people¹⁶. Moreover, responsible ecotourism includes programs that minimize the negative aspects of conventional tourism on the environment and enhance the cultural integrity of the local population.

Since ecotourism is about uniting conservation, communities, and sustainable travel; this means that ecotourism development should fulfil the following principles:

- **Minimize impact**
- **Build environmental and cultural awareness and respect**
- **Provide positive experiences for both visitors and hosts**
- **Provide direct financial benefits for conservation**
- **Provide financial benefits and empowerment for local people**
- **Raise sensitivity to host countries' political, environmental, and social climate**

Ecotourism is an important opportunity since Matruh Governorate already has an internationally awarded ecotourism development in Siwa. Both destinations are complementary and synergies between both ecotourism initiatives are numerous since they share infrastructures (roads and airports) and cultural background (historical relationships) while offering different products (oasis and sea).

Finally, the importance of tourism in the Northwest coast should be stressed, since it is an emerging and growing economic activity. The study area is a mature destination for the national tourist market and an incipient one for the international market. The accelerated tourism development is threatening the pristine coastal system and it will create conflicts with local population due to cultural concerns and land reclamation issues.

2.2.4. Living conditions in southern livelihoods

The Participatory Workshop held in Marsa Matruh and the meetings with the local population and Matruh officers held in each urban center during the zoning fieldtrip showed a consensus regarding the need of the ICZM Plan to address the living conditions of the small settlements, mainly familiars, existing in the southern stretch of the study area due to their disfavoured situation.

There are many small-holders that operate and survive in this hazardous desert environment, where poverty conditions are widely spread since

(16) The International Ecotourism Society, 1990.
www.ecotourism.org

they are practically isolated from the main urban centers, located in the Northern stretch, because of the deficient transport and communication networks together with the existence of substantial military areas and mine fields, which are mostly spread out along the full length of the stretch.

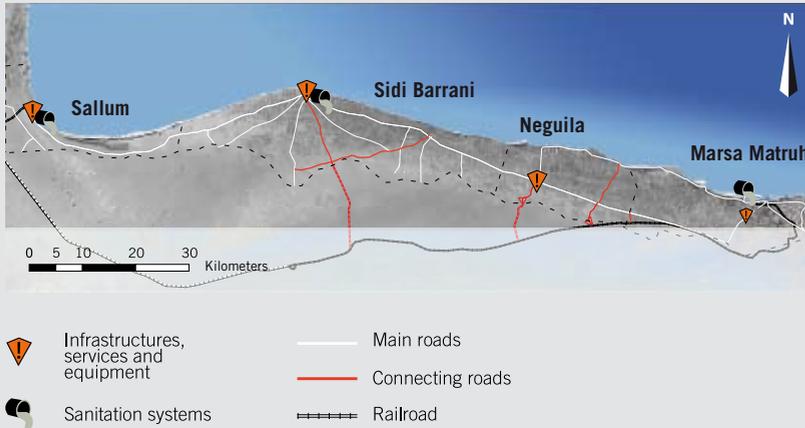


Figure 2.13. Connecting roads between coastal and inland Areas. (GIS MSCZM PLAN)

These rural communities are Bedouin and they are mainly found in small pastoral groups that largely depend on livestock and practice agricultural cultivation at a base camp. The absence of energy and water supply make these livelihoods more vulnerable to droughts and extreme weather conditions, which are commonly found in this stretch due to the proximity of the Sahara. Additionally, the over-expansion of crop areas with its corresponding demographic growth is increasing their vulnerability to hunger and diseases and also threatening the conservation of the local biodiversity.

These communities are not fully integrated into the Egyptian administrative system since there is no reliable information regarding births, deaths, marriage or even divorces.

These Bedouin livelihoods are practically invisible for public policies, and they have no rights and obligations recognized by law.

However, the local social system based on their tribal lifestyle is supporting many of these southern small-holders.

Most of the provisions of the sectoral plans analysed were negatively addressing traditional lifestyles, in contrast, the Plan usually considered desert and remote zones as being suitable and attractive areas for urban expansion, development of agriculture and animal production (Annex III).

Therefore, enhanced transportation and communication networks between northern stretch and southern one shall be promoted, and special attention should be paid to infrastructure development since transportation infrastructure should reduce its environmental impacts in wadi functioning and watershed management.

The railway infrastructure, almost abandoned, has strong potential to integrate these livelihoods reducing their vulnerability, ensuring access to basic needs such as water and energy, and facilitating their economic development through new jobs opportunities and new opening markets.

2.2.5. Property Rights

The Key-Issues Questionnaire highlighted this Key-Issue as one the most important and influential in the study area. It was raised by local representatives in the two participatory workshops held in Marsa Matruh and Cairo.

This issue comes from the independence times, when the new government of Egypt decided to nationalize the property of the land. Afterwards, most of the agricultural lands were given back to farmers but desert areas are still government owned. Many Governors of Matruh have actually led with this issue although small progress has been achieved.

The concept of land property is at the core of this issue. It can be briefly exposed as the conflict between Governmental and local conceptions. The Government has inherited the roman property conception from European culture, which allows any individual to own any material resource (even the land). In contrast, local communities still maintain their tribal concept, where the land property corresponds to the tribe and is shared by their members. Actually, land property right is a common issue in most African countries despite the fact that each one presents its own local traditions and its particular political and social decolonization process. So, there are many lessons that can inspire specific solutions for this national and local problem; anyhow, the solution has to ensure the harmonisation and recognition of both concepts and traditions.

This problem needs to be faced as soon as possible since it represents the major constraining factor for local development. In fact, some of its main consequences are:

- **Investors shall compensate the Bedouin population to develop**

their activities, so investors must pay twice.

- Local communities are not investing in their own development because of legal uncertainty of their investments.
- Traditional and historical owners cannot obtain benefits from selling the lands to developers, so they are losing an important source of incomes.
- Local population is discouraged since there are not motivations for developing their land, so their productivity is very low.

3

RATIONALE FOR AN ICZM PLAN



The concepts of “progress and development” are changing since current economic and social development standards are demonstrating they cannot be sustained much longer. As suggested by Daly (1996¹), qualitative development rather than quantitative growth is the path of future progress, especially if operational changes in economic policy and governmental priorities are to occur.

Nowadays, the existing problems and challenges that society is facing, especially concerning global change (desertification, climate change, sea level rise, alien species) and millennium development goals (to end poverty and hunger, universal education, gender equality, child health, environmental sustainability), require the involvement of the whole society. Governments, private sector, academia, local communities and NGOs have to facilitate dialogue, construct common consensus, share information and join efforts to progress towards a sustainable development.

The ICZM Plan is referring to management, integrated coastal management and governance. Although these concepts invoke similar ideas, some authors distinguish specific differences, which are very significant when dealing with complex issues

(1) Daly, H.E. Beyond Growth: The Economics of Sustainable Development. Beacon, Boston. 1996.

(2) Olsen, S.B.; Page, G.G. & Ochoa, E. The Analysis of Governance Responses to Ecosystem Change: A Handbook for Assembling a Baseline. LOICZ Reports & Studies No. 34. GKSS Research Center, Geesthacht, 2009; 87 pages.

(3) Olsen, S.B. Frameworks and indicators for assessing progress in integrated coastal management initiatives. Ocean & Coastal Management 2003; 46 (3-4): 347-361.

(4) Lane Marcus B. Towards integrated coastal management in Solomon Islands: Identifying strategic issues for governance reform. Ocean & Coastal Management 2006; 49: 421-441.

Olsen (2009²) differentiates management and governance as follow:

- Management is the process by which human and material resources are harnessed to achieve a known goal within a known institutional structure (business management, disaster management). The goals and the mechanisms of administration are well known and widely accepted.
- Governance, in contrast, addresses the values, policies, laws and institutions by which a set of issues are addressed. It probes the fundamental goals and the institutional processes and structures that are the basis for planning and decision-making.

In fact, governance sets the stage within which management occurs³

Lane (2006⁴) defined ICZM as the task of arranging and organizing the state organizations, private sector corporations, civil society and citizens who are active in and utilize the resources of the coastal zone, establishing incentives and parameters for their behaviour, and creating circumstances for collaborative behaviour.

The ICZM definition provided by Lane (2006) is very significant since it implicitly shows the interrelation of management and governance concepts, which is crucial for the successful practice of ICZM. In fact, the

Protocol on ICZM in the Mediterranean, which is in process to be signed by Egypt, in its preamble states *“the Contracting Parties are determined to stimulate national, regional and local initiatives through coordinated promotional action, cooperation and partnership with the various actors concerned with a view to promoting efficient governance for the purpose of integrated coastal zone management”*.

ICZM is closer to coastal governance than to formal management of coastal zones

This Chapter describes then the context in which the Marsa Matruh-El Sallum ICZM Plan was developed. Firstly, the ICZM context is explained, from the Mediterranean level to the Egyptian one. Understanding the context is very important to properly link the plan with the national and regional ICZM initiatives. Secondly, the analysis of the sectoral plans addressing the study area is described to better comprehend the particular needs regarding the existing policies and management priorities for the Northwest Coast.

3.1. ICZM CONTEXT

The development of an ICZM Plan in the Mediterranean coast of Egypt is an outcome of the international community commitment to progress towards the efficient coastal governance in the Mediterranean

In 1975, 16 Mediterranean countries and the European Community adopted the Mediterranean Action Plan (MAP), the first-ever Regional Seas Programme under UNEP’s umbrella. In 1976 these Parties adopted the Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention), amended and renamed as Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean in 1995.

Seven Protocols addressing specific aspects of Mediterranean environmental conservation complete the MAP legal framework. Although MAP’s initial efforts were focussed at marine pollution control, over the years, its mandate gradually widened to include integrated coastal zone planning and management.

Today, 30 years later, the Barcelona Convention and MAP are more active than ever. The Contracting Parties are now 22, and they are

determined to protect the Mediterranean marine and coastal environment while boosting regional and national plans to achieve sustainable development⁵.

Two international agreements have triggered the development of this ICZM Plan:

- 1. The Mediterranean Strategy for Sustainable Development**
- 2. The Protocol on ICZM in the Mediterranean**

3.1.1. The Mediterranean Strategy for Sustainable Development

The Mediterranean is an eco-region with a unique heritage and very specific features and its future depends on ensuring that development patterns are sustainable throughout the region. In fact, the Mediterranean is already a pioneer in environmental matters and sustainable development approaches⁶.

The first specific call for sustainable development through integrated planning and management is the Mediterranean Strategy for Sustainable Development (MSSD), endorsed by the Contracting Parties of the Barcelona Convention in 2002 at Athens⁷. This initiative clearly recognizes that Mediterranean people are becoming increasingly aware that it is just not possible to keep using resources, building up coastal areas and developing industries, especially tourism, without an adequate integrated planning framework, a reduction of North-South disparities and the necessary policy reforms.

The underlying principle of the MSSD is that sustainability shall be based on the interdependence of its three pillars: economic development, social equity and environmental protection; as well as on improved governance.

(5) www.unepmap.org

(6) Hoballah Arab. The Mediterranean Strategy for Sustainable Development: A Framework for Regional Partnership. Economy and Territory. Med. 2006.

(7) UNEP/MAP-MCSD, 2005. Mediterranean Strategy for Sustainable Development, a framework for environmental sustainability and shared prosperity.

Actually, the MSSD stresses that moving seriously towards and implementing efficiently sustainable development is to require adequate structural changes in economic, social, environmental and political sectors. Consequently serious actions are urgently required in response to reforming fiscal policies; decoupling environmental degradation and resource consumption from economic and social development; and reorienting and increasing public and private investment towards Sustainable Development.

3.1.2. The Protocol on ICZM in the Mediterranean

One of the priority actions detailed in the MSSD is to adopt by 2007 a Protocol for the Integrated Management of Mediterranean Coastal Zones, which is to implement the Mediterranean Strategy on ICZM by means of National Strategies and Regional Plans. In fact, the ICZM Protocol is the seventh Protocol in the framework of the Barcelona Convention and represents a crucial milestone in the history of MAP since it completes the set of Protocols for the Protection of the Marine Environment and the Coastal Mediterranean Region.

This Protocol is to encourage the Mediterranean countries to better manage and protect their coastal zones, as well as to deal with the emerging coastal environmental challenges, such as climate change. Indeed, the Protocol is forward-looking and proactive, since it aims at preventing and not only reacting to coastal problems. In fact, the Contracting Parties are to develop their national ICZM strategies as an outset for all other ICZM activities and prepare coastal implementation plans and programs.

The ICZM Protocol is a unique legal instrument on ICZM in the entire international community and could serve as model for other regional seas since it has defined a common regional framework for ICZM that is to allow the development of coherent policies for sustainable development in the whole Mediterranean basin.

3.1.3. National ICZM Strategy for Egypt

The signature of the Protocol by Egypt required specific changes in the Law for the Environment N°4/1994 to fully integrate the Protocol into the Egyptian legislation. In fact, the amendment to the Environmental Law was approved in 2009 and it included the explicit definitions of coastal zone, ICZM, coastal ecosystem and coastal plan and programmes. Additionally, five articles of the Protocol were also included in the Egyptian environmental legislation, which are:

- Article 5 Objectives of Integrated Coastal Management
- Article 6 General principles on integrated coastal zone management
- Article 7 Coordination
- Article 15 Mediterranean Strategy for Integrated Coastal Zone Management
- Article 16 National coastal strategies, plans and programmes

Furthermore, the adoption of the Protocol by Egypt encouraged the elaboration of the National ICZM Strategy for Egypt (from now on the ICZM Strategy), which was developed during 2009 and it is still pending of approval.

The approval and formal adoption of the Strategy is to establish the regulatory framework for the MSICZM Plan and contribute to link the international commitments as the ICZM Protocol for the Mediterranean with regional plan implementation

During its elaboration, three specific workshops were carried out to encourage the stakeholders' participation and to construct consensus regarding the Vision, Priorities and Roadmaps for implementation of the Strategy. These are described in the following sections.

Vision

After 20 years of collective and focused effort, Egypt should achieve the following ambitious but realistic ICZM objectives:

- Much of the previously deteriorated coastal waters support a thriving aquaculture economy which contributes significantly to the diversification of national exports.
- Coastal lagoons have recovered their ecological balance. Bardawer Lake is a major national protected area enjoyed by local visitors and international tourists alike.
- Along the Red Sea major coral reef areas have recovered their pristine prime.
- Urban sprawl is controlled by redeployment of a large number of the population as well as.

These achievements will be possible due to:

- Commitment of skilled human resources.
- Coordinated and timely financial support of international donors.
- Carefully planned land use policy anticipating the impact of climate change on sea level rise in the delta region, including adequate design of tourism infrastructures which contribute to reducing mitigation cost.
- Implementation of management measures on key sites: regular and extensive monitoring of environmental status of reefs allows for fine tuned and alternative allocation of diving areas.
- Quality of Egyptian research. Their research development is regularly internationally rewarded.

Priorities

Three major strategic objectives are retained that deserve dedicated attention over the next 20 years. These are strengthening

ICZM policy by better policy coordination, planning a sustainable use of coastal resources and promoting stakeholders' awareness.

The priorities established by the ICZM Strategy are described as follow:

I. Strengthening ICZM policy by better policy coordination

ICZM policy rests upon three key areas for its successful implementation:

- Integrated decision-making.
- Commitment of relevant stakeholders.
- Streamlining of pivotal existing laws and regulation.

First of all, coastal policies need to be further integrated at the planning stage to enhance chances of effective decision making processes at national, regional, and local levels. This will be achieved by improved horizontal coordination between agencies, sectors and especially decision-making committees. It will also require the establishment of governorate coastal groups to relay and implement inter-committee decisions at regional and local levels.

Second, the ICZM policy must also ensure that relevant stakeholders are involved in policy planning and development. That includes the participation of NGOs in ICZM Technical Secretariat in coastal Governorates.

Third, the ICZM Protocol, which is in process of being signed by Egypt and ratified by at least six Nation-Estates, will be a driving mechanism and incentive for strengthening ICZM policy at large in the country.

II. Planning a sustainable use of coastal resources

To ensure a sustainable use of coastal natural and human resources, coordinated planning upstream is required. This will be enacted by appropriate development of ICZM plans for each governorate/governorates (sub-national).

III. Promoting stakeholders' awareness

All coastal stakeholders (governmental "national and sub-national", local level, decision makers, NGO's and public) must be aware and understand the value of coastal resources and issues related to coastal area development. This will contribute to them taking the decisions to be committed to long term shared goals. This objective will ensure:

- Stakeholders are informed regularly at levels of governorates and community about sustainable coastal development.
- Quality of coordination collection and communication of information and data exchange between stakeholders.

- Promotion for a capacity building programmes for ICZM institutional forces at all levels.
- Dissemination of coastal management practices (guidelines, directives, codes of practice, etc.).

The adoption and implementation of the MSICZM Plan under the umbrella of the ICZM Strategy is to provide useful information in which develop new ICZM plans and programs, adapting these initiatives to each regional context and to the lessons-learned process

3.2. ANALYSIS OF SECTORAL PLANS

The analysis of the existing Sectoral Plans was carried out to understand which issues are already planned and how they are addressed by these plans. In fact, this analysis, included in the Annex III, provided the policy baseline information and allowed to better comprehend which specific actions are needed and which coordination mechanisms between the different administrations are to improve effective coastal management.

The Analysis of the Sectoral Plans aims to evaluate the level of integration between the different sectoral plans and studies, i.e. the coherence regarding sectoral priorities and the conflicts between the different plans.

The analysis was carried out by an Egyptian team of experts in planning and managing coastal resources, who filled in the factsheets provided to evaluate the following aspects of each plan:

- If they affect any key-issue.
- If they consider or not the affected key-issues at the time to produce the plan.
- If they present any provisions related to the key-issues affected by the plan.
- If social and environmental considerations are contemplated by the plan.
- If they take into account currents and foreseen threats to the study area.

Four different plans were analyzed, two are sectoral plans (the *Five Years Development Plan* and the *Shoreline Management Plan*) while the other two are integral plans (the *North Coast Development Plan* and the *Matruh Development and Investment Plan*). Additionally, several interviews and group meetings with local stakeholders allowed analyzing the development priorities and included them as another integral plan, the *Wish List of the Local Population*. These Plans analyzed are listed in the Table 3.1.

Plan Title	Sectoral Planning	Authority	Time framework
The North Coast Development Plan	Irrigation Water Study	GOPP	1997-2017
	Water Study	GOPP	1997-2017
	Sanitary Drainage for liquid waste Study	GOPP	1997-2017
	Urban Ecology Study	GOPP	1997-2017
	Communications Study	GOPP	1997-2017
	Urbanization Study	GOPP	1997-2017
	Economy Study	GOPP	1997-2017
	Fish Wealth Study	GOPP	1997-2017
	Industry Study	GOPP	1997-2017
	Animal Wealth Study	GOPP	1997-2017
	Agriculture Study	GOPP	1997-2017
Roads Study	GOPP	1997-2017	
Marsa Matrouh Development and Investment Plan	Integral Study	Matrouh Governorate	2002-2022
Five Years Development Plans	Budget Allocation Study	Ministry of Economical Planning	2007-2012
Shoreline Management Plan	Shoreline Study	SPA-EEAA-DANIDA	
Wish List of the Local Population	Integral Study	IH Cantabria	

Table 3.1. List of Plans analyzed.

Therefore, sixteen factsheets (Figure 3.1) one per plan or study, summarize the study of the plans. These factsheets gathered the relevant information regarding how the plans are addressing the Key-Issues, distinguishing the degree of impact (from 0 to 3) and its sense (positive or negative), and their objectives and data considered.

Finally, the more interrelated sectoral plans and studies were compared to detect the synergies and conflicts between the different plan provisions, as it is shown in Figure 3.2.

Actually, the matrixes created allowed identifying:

- Conflicts when all of them negatively impact any specific Key-Issue
- Synergies when all of them positively impact any specific Key-Issue
- Incoherencies when any Key-Issue is positively and negatively impacted

The groups analysed were as follow:

- Water management, comparing the Drinking Water, Sanitary, Irrigation, Agriculture and Animal Production factsheets.
- Agriculture development, comparing the Economy, Agriculture, Industry and Matruh Development Plan factsheets.
- Development model, comparing the Economy, Matruh Development Plan and Wish List.

In summary, the Analysis of Sectoral Plans evidenced the following conclusions:

- Most of the detected Key-Issues are already addressed by at least one Public Agency or Administration.
- Most of the objectives already set by the Sectoral Plans are promoting specific improvements towards a more sustainable development.
- None of the Plans have specific provisions regarding mechanisms neither for administrative coordination nor for promoting stakeholders' awareness.

However, the performance of interviews with local population, meetings with economic stakeholders and public authorities concluded that not so much of the provisions approved by the studied plans have been implemented. Actually, the reasons underlying this fact are mainly related to governance issues, such as the cooperation of a multiplicity of stakeholders (including government, citizens and private corporations), coordination of priorities and activities carried out by different governmental authorities and consensus-building regarding priorities for development between central, regional and local stakeholders. These issues, together with the absence of funding mechanisms and the weak capacity building and stakeholder awareness are crucial to succeed in achieving an effective coastal management of the northwest coast of Egypt.

In fact, the Strategy identified three big challenges for enhancing effective ICZM in Egypt which are strongly related to the aforementioned conclusions.

The ICZM challenges are:

- **INSTITUTIONAL CHALLENGE:** coordinated decision-making and implementation
- **LEVERAGE CHALLENGE:** balancing between management, legal and financial means
- **CAPACITY BUILDING CHALLENGE:** develop ICZM skills across sectors and levels of government

Basic plan information		Main Issues Addressed		Data included in plan								
title	Industry study Regional plan for northwestern coast development 2017	The poor industrial activity in the area and the irregular distribution of its production		1. General standards for the development of the area 2. General characteristics of the area under study 3. Current situation of industrial activities in the area 4. Definitions of environmental industries 5. Industry planning methodology 6. Industrial development plan 7. Proposed industrial areas at the coast 8. Estimated costs of the suggested Industrial development								
authority	General organization for physical planning	Main issues										
scope duration	Sectoral – regional 1997 – 2017	Overall objective	Making full use of resources and potentials to achieve an industrial leap in the area									
distribution		Sub-objectives	<ul style="list-style-type: none"> Setting up new development areas that rely on industrial activities in the region Redesigning industrial development by depending on renewable materials for environment conservation 									
Issues affect by the plan : (+3 positive a strong impact /-3 a strong negative impact)												
Main issues	Urban development		Investment opportunities	Natural hazards	Environmental resources management	Community's issues and traditions						
	Urban expansion	Waste management Water and energy Telecom network Coast protection agriculture fisheries and farming	Animal production tourism Salt production craftwork Renewable Energy Medical plants	floods Beach erosion Sea level rise Climate changes	Sabkhas and wetlands Shores and valleys Deserts and remote areas Sand dunes	Tribal life Culture and local legacy Ownership rights Participating in decision taking Borders Military zones Mines						
Sub issues												
results	+1	-1	+1	0	0	-1	0	-1	+2	+1	0	0
Economic industries impacted												
industry	impact		Plan nom		Impact (+ or -)		impact					
All industries	Restructuring and redistributing industrial activity in the area on all coast sectors.		+		+		The plan puts forward turning Salum to an industrial and commercial area besides its being a border crossing					
Agriculture and herding	connecting industrial activity with agricultural and herding activities since they are the dominant activities in the region as the plan aims at setting up industries which integrate with economic activities		-		-		The plan may negatively impact nomads' ownership rights and the nomadic life style					
All industries	Providing necessary services and utilities for establishing industry such as electricity, water, and other infrastructure facilities.		-		-		Industrial development may have a negative impact on environmental sensitivity in some desert areas					
Population and industry	Putting local population into consideration and giving them the priority on industrial development program since they are most capable to adapt to desert areas		+		+		The plan basically depends on other economic activities and parallel investment opportunities					
All economic industries at the western sector – population	The plan focused on the concentration of industry in central and eastern sectors which contradicts the plan which aim at equal distribution of industrial activities over all the sectors of the region		-		-		Industrial development needs all forms of energy, water, as well as infrastructure elements which may affect other plans if the industrial development plan does not integrate with them					
			+		+		New urban communities may be built due to industrial development					
COOPERATION IN THE DEVELOPMENT OF A PLAN FOR INTEGRATED COASTAL ZONE MANAGEMENT BETWEEN MARSA MATRUH AND EL SALLUM, EGYPT			Authority	Scope	Plan Code	PLANS INTEGRATION FACTSHEET						



Figure 3.1. Sectoral Plan Fachsheet

4

INTEGRATED COASTAL ZONE MANAGEMENT PLAN FOR THE COASTAL AREAS BETWEEN MARSA MATRUH AND EL SALLUM



This Chapter explains the Vision and Mission of the Marsa Matruh-El Sallum ICZM Plan, describes its scheme, based on Areas of Activity, Objectives and Actions, and illustrates the proposed governance structures together with the communication strategy designed to promote the effective coastal governance of the study area.

The MSICZM Plan is a management plan, i.e. it determines how the different authorities shall cooperate when they are planning a common issue and what needs to be done in those issues that are not addressed by any specific plan.

Besides, the MSICZM Plan also provide different policy recommendations and environmental objectives regarding the use of coastal resources to be considered by the corresponding authority.

As mentioned in previous chapters, the Marsa Matruh-El Sallum ICZM Plan is based on the outputs of all the activities carried out during the Project and the information produced is compiled in the Annexes of this Plan as follows:

- Annex I – Integral Diagnosis of the coastal areas between Marsa Matruh and El Sallum (2 volumes)
- Annex II – Key-Issues Scheme: Opportunities for Economic Development
- Annex III – Analysis of Sectoral Plans
- Annex IV – Land-use Analysis and Zoning Proposal
- Annex V – Carrying Capacity Assessment
- Annex VI – Strategic Environmental Assessment of the MSICZM Plan
- Annex VII – Public Participatory Process

Since the ICZM Plan is framed by the ICZM Protocol and the National Strategy, they have inspired the establishment of the areas of activity within the ICZM Plan. In fact, ensuring the coherence between the Protocol, the Strategy and the Plan allows the development of a nested governance system for the Mediterranean Northwest Coast of Egypt. This is defined as a situation in which management, power, and responsibility are shared cross-scale among a hierarchy of management institutions¹. Actually, these three policy initiatives urgently require formal institutional and regulatory frameworks to promote stakeholders' cooperation and collaboration for ICZM.

The ICZM Plan is built upon the consensus achieved during the participatory process of the ICZM Strategy.

Coordination and information sharing between both planning processes significantly contributed to the deliberation and development of the MSICZM Plan and ensured the coherence between both policy instruments (strategy and plan)

(1) A Handbook for Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management. IOC Manuals and Guides, 46; ICAM Dossier, 2, Paris. UNESCO. 2006.

4.1. VISION AND MISSION OF MS ICZM PLAN

The Vision and Mission of the ICZM Plan are inspired by the Protocol and the National Strategy and based on the specific needs of the study area and the contribution of local stakeholders.

4.1.1. Vision for the Northwest Coast

The Vision of this ICZM Plan is to have a coastal area in which the four marakaz take advantage of their coastal resources, protect them and sustain the resource base. Furthermore local communities should, with the strong support of the governorate administrations, actively create new jobs opportunities and participate in the implementation of the development model agreed upon by all the interested stakeholders (governorate and central administrations, private sector, local communities, academia, NGOs).

4.1.2. Mission of the ICZM Plan

The mission of the ICZM Plan is:

- to sustain the existing coastal economic opportunities and develop new ones that sustainably contribute to both local and national development and diversify employment opportunities for coastal communities;
- to create a consensus on the envisioned development model for the region and forge partnerships between the government and all other segments of Matruh society that are resource users (private sector, academia, local communities) to work together to realise the Vision.

4.1.3. Overall aim of the ICZM Plan

The overall aim of the ICZM Plan is to progress from the current coastal planning and management, which can be described as Government-driven, towards an effective coastal governance. Coastal governance is herein understood as the model which enables the involvement of inter-organisational networks, made up of governmental and societal stakeholders, and seeks out new means of cooperation so as to achieve specific policy objectives².

The proposed coastal governance is characterized by:

- **Coordination of government policy and action (vertically and horizontally)**

(2) Lane Marcus B. Strategic coastal governance issues in Fiji: The challenges of integration. Marine Policy 2008; 32: 856-866.

- **Collaboration of government and non-government stakeholders (including communities, private corporations and NGOs)**
- **Decentralization, referring to the transfer of certain central assets to regional decision-making bodies.**

4.1.4. Hypotheses for the success of the MSICZM Plan

The following hypotheses are supporting the MSICZM Plan:

- The Protocol and the upcoming Strategy create the enabling conditions to encourage the necessary political will to develop the ICZM Plan.
- The study area, its key-issues and constraining factors have been deeply studied and their conclusions call for specific measures to be implemented.
- The sectoral plans addressing the study area and the stakeholders that are to actively participate in the development of the ICZM Plan have been identified.

4.2. SCHEME OF THE ICZM PLAN

The structure of the ICZM Plan establishes four different levels: Areas of Activity, Strategic and Operational Objectives and Actions. The level of detail increases from the first level up to the last one. Figure 4.1 shows the ICZM Plan scheme, where the upper-left corner represents the general aims of the Plan and the lower right-corner correspond to clearly defined statements.



Figure 4.1. Structure of the ICZM Plan

The 3 axes of the ICZM Plan, herein referred to as Areas of Activity, are based on the objectives of the National ICZM Strategy to ensure the vertical coherence and coordination between national and regional policies. The 3 different Areas of Activity are developed through 9 Strategic Objectives, which target the priorities of the study area, as follows:

Area of Activity	Strategic Objective
A) Strengthening ICZM Policy	A.01) Maximizing COORDINATION AND COOPERATION between administrations and agencies
	A.02) Reconsidering existing LAWS AND REGULATIONS
	A.03) Ensuring stakeholder INVOLVEMENT
B) Planning a Sustainable Use of Coastal Resources	B.01) Implementing policies and measures included in the NATIONAL WATER RESOURCES PLAN
	B.02) Developing INTEGRATED PRIMARY ACTIVITIES MANAGEMENT
	B.03) Implementing SUSTAINABLE TOURISM ACTIVITIES
	B.04) Improving living conditions of SOUTHERN LIVELIHOODS
C) Promoting Stakeholders' Awareness	C.01) Promoting INSTITUTIONAL CAPACITY BUILDING in ICZM to strengthening effective coastal management
	C.02) Promoting PUBLIC EDUCATION AND AWARENESS programmes to create constituency for coastal management

Table 4.1. Areas of Activity and Strategic Objectives

The Strategic Objectives are developed through Operational Objectives, which better define the specific needs of the study area. These Operational Objectives are fulfilled through 50 proposed Actions, which are targeting these needs. Therefore, the ICZM Plan defined 27 Operational Objectives which are shown in the following tables.

Strategic Objectives	Operational Objectives
A.01) Maximizing COORDINATION AND COOPERATION between administrations and agencies	Increasing COORDINATION between Matruh Governorate and Central Administrations
	Developing a RESEARCH AGENDA of applied research to support policy-making and management decisions
	Establishing LONG-TERM FUNDING mechanisms
A.02) Reconsidering existing LAWS AND REGULATIONS	Improve distribution of COMPETENCIES
	Developing specific ICZM LAW OR REGULATION
	Simplifying REGULATIONS concerning resource use and exploitation
A.03) Ensuring stakeholder INVOLVEMENT	Developing effective MECHANISMS for stakeholders' involvement
	Developing CONFLICT RESOLUTION mechanisms
	Promoting COLLABORATIVE MANAGEMENT

Table 4.2. Area of Activity A: Strategic and Operational Objectives

Strategic Objectives	Operational Objectives
B.01) Implementing policies and measures included in the NATIONAL WATER RESOURCES PLAN	Creating CONSTITUENCY for water stewardship
	Developing Water COLLABORATIVE PLANNING
	Implementing Water COLLABORATIVE MANAGEMENT

Strategic Objectives	Operational Objectives
B.02) Developing INTEGRATED PRIMARY ACTIVITIES MANAGEMENT	Creating CONSTITUENCY for integrated primary activities stewardship
	Developing Integrated Primary Activities COLLABORATIVE PLANNING
	Implementing Integrated Farming COLLABORATIVE MANAGEMENT
B.03) Implementing SUSTAINABLE TOURISM ACTIVITIES	Creating CONSTITUENCY for tourism stewardship
	Developing Tourism COLLABORATIVE PLANNING
	Implementing Tourism COLLABORATIVE MANAGEMENT
B.04) Improving SOUTHERN LIVELIHOODS	Creating CONSTITUENCY for southern livelihoods stewardship
	Developing COLLABORATIVE PLANNING in southern livelihoods
	Implementing COLLABORATIVE MANAGEMENT in southern livelihoods

Table 4.3. Area of Activity B: Strategic and Operational Objectives

Strategic Objectives	Operational Objectives
C.01) Promoting INSTITUTIONAL CAPACITY BUILDING in ICZM to strengthening effective coastal management	Adapting ADMINISTRATIVE STRUCTURES to ICZM process
	Promoting ICZM CAPACITY BUILDING to technicians working in administrative authorities and public agencies
C.02) Promoting PUBLIC EDUCATION AND AWARENESS programmes to create constituency for coastal management	Increasing EDUCATION on sustainable development
	Providing CAPACITY BUILDING for collaborative and organizational development
	Improving the INVOLVEMENT OF LOCAL POPULATION in the decision-taking process

Table 4.4. Area of Activity C: Strategic and Operational Objectives

The proposed scheme for the MSICZM Plan has the advantage of matching the specific needs of the study area while ensuring their coherence with the national priorities established in the National ICZM Strategy. The Areas of Activity as well as the Strategic and Operational Objectives are explained in Chapter 5, Implementing the ICZM Plan. The Actions are thoroughly described by Action Factsheets, which are included in the Guidelines for the implementation of the Plan.

The Action Factsheets contain the following information related with each Action:

- Strategic and Operational Objectives
- Action name and code

- Roadmap
- Description
- Stakeholders involved
- Related actions
- Timeline
- Costs
- Progress and Results Indicators
- Policy considerations
- Environmental objectives

Four time-bounded roadmaps for the Plan implementation are also provided to group those Actions which are complementary and inclusive, although sometimes they may correspond to different Objectives and Areas of Activity.

While the actions are established according to the Objective definitions, the roadmaps proposed are associated with the ICZM Plan development process. In fact, the Roadmaps coordinate the implementation of the actions and ensure that enabling conditions are met before launching other related actions

Therefore, the Roadmaps ensure the temporal coherence of the MSICZM Plan implementation. These are defined as follows:

- Establishing an institutional and regulatory framework for effective ICZM
- Building local capacities for coastal governance
- Developing a research agenda
- Implementing coastal resource stewardship

ROADMAP02 – BUILDING LOCAL CAPACITIES FOR COASTAL GOVERNANCE											
Code Action	Action	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
C.02.50	Raising awareness campaign regarding stakeholder involvement in the decision-making processes										
C.02.49	Training local communities in organisational and technical capabilities										
A.03.16	Establishment of specific access to micro-credits for Collectives Actions implementation										
A.03.15	Establishment of the Northwest Coast Partnership (NWCP)										
A.03.18	Creation of Markaz-driven Working Groups in the Northwest Coast										
A.03.19	Establishment of Issue-driven Working Groups for ICZM Priorities										
C.02.47	Raising awareness campaigns on sustainable development in schools										
C.02.48	Establishment of an Annual Matruh Coastal Stewardship Award										

Table 4.5. Building local capacities for coastal governance Roadmap

Table 4.5 shows the scheme of the Roadmap *Building local capacities for coastal governance as an example*. The scheme includes the Code Action to easily link the action to the Area of Activity and the Strategic Objective to which it belongs. The Chapter 5, *Implementing the MSICZM Plan*, describes the four proposed Roadmaps, while the Guidelines for the implementation of the Plan compiles the four Roadmap schemes together with their contribution to the Objectives consecution.

Furthermore, the MSICZM Plan proposes a set of governance bodies to support the effective integrated management and governance of the study area, promoting administrative coordination and stakeholder involvement. This enables the collaborative management of the resources. These governance structures are described in the following section, once the structure of the Plan has been explained.

4.3 GOVERNANCE STRUCTURES

As mentioned above, the MSICZM Plan is to promote and encourage an overall change in coastal management according to the international commitments adopted by Egypt. In fact, the ICZM Plan frequently refers to the processes of planning and decision making in coastal areas as governance to reinforce the idea that it is increasingly necessary a reassessment of the fundamental goals and values of the society. Economies built upon conspicuous consumption and the prolific use of natural resources must give way to new values and new forms of social behaviour³.

Ecosystem governance initiatives, such as the MSICZM Plan, to be effective must:

- **be sustainable over long periods of time – usually many decades,**
- **be capable of being adapted to changing conditions and**
- **provide the mechanisms to encourage or require specific forms of resource use and collaborative behaviours among institutions and users. groups.**

(3) Olsen, S.B.; Page, G.G. & Ochoa, E. (2009): *The Analysis of Governance Responses to Ecosystem Change: A Handbook for Assembling a Baseline*. LOICZ Reports & Studies No. 34. GKSS Research Center, Geesthacht, 87 pages.

Much of the challenge therefore lies in achieving changes in the behaviour of the user groups and institutions. In fact, ecosystem-based governance integrates the best available science with a transparent, equitable and democratic approach to planning and decision making. Ecosystem-based management needs to be carried out in a strategic manner tailoring good practice principles to the culture and the specificities of local area.

According to Olsen in Figure 4.2, there are three mechanisms by which the processes of governance are expressed: the marketplace, the government, and the institutions and arrangements of civil society³.

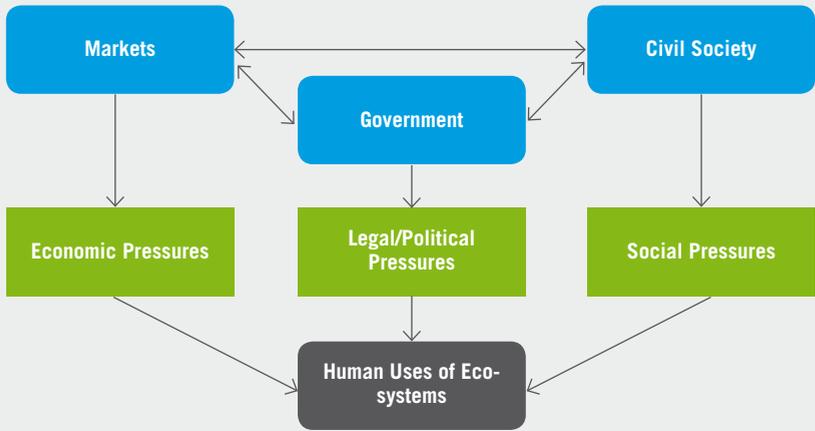


Figure 4.2. The principle sources and mechanisms of governance. (3)The principle sources and mechanisms of governance. Olsen et al, 2009.

These mechanisms interact with one another through complex and dynamic interrelationships that need to be examined and contrasted. Each of the three governance mechanisms alters behavioural patterns through measures such as those identified in Table 4.7.

Major Expressions of Governance		
Marketplace	Government	Civil Society: Organizations & Institutions
Profit seeking	Laws and regulations	Product choices
Ecosystem service valuation	Taxation and spending policies	Advocacy and lobbying
Cost-benefit analysis	Education and outreach	Vote casting
Eco-labeling and Green Products		Co-management
		Stewardship activities

Table 4.7. Major Expressions of Governance. Olsen, 20093

The failures and weaknesses in this relational-system detected through the Coastal Diagnosis, Key-Issues Scheme and Sectoral Plan Analysis include:

- lack of implementation of plan provisions
- conflicts between sectoral plans
- degradation of scarce worthy resources
- conflicts between economic activities regarding land-use
- limited local benefits (income, jobs creation) of existing economic activities
- restricted stakeholders' involvement in planning processes

The existing relational-system needs to look for a new power balance between these three mechanisms to progress towards effective coastal governance. Actually, they require adapting the afore-mentioned measures (Table 4.7) to a more sustainable approach, which is formally accepted and encouraged by the Egyptian Government by signing and ratifying international commitments such as the MSSD and the ICZ Protocol.

Therefore, the implementation of ICZM will consist of developing new procedures and mechanisms to allow integration of information, consensus-building and decision-making based on sound scientific knowledge. In fact, coordinating mechanisms, such as committees and advisory boards, with stakeholder representation are useful for the dissemination of information and solicitation of opinion and decision-making. In fact, the success of ICZM implementation is to depend on the integration of the different stakeholders' interests, even conflicting ones, so specific actions to create the enabling conditions for public involvement and decision-making integration will be promoted.

The different coordinating mechanisms proposed by the ICZM Plan are classified as follow:

- Administrative and executive structures, which include decision-making, planning authorities and the executive body responsible for implementing the ICZM Plan.
- Advisory boards, which encompasses the different structures created to enhance stakeholder participation, build consensus, support decision-making with sound scientific knowledge and share and integrate information.

Public participation and stakeholders' involvement in planning process and management are to ensure the thriving development of these governance structures. And these structures together with the institutional and regulatory frameworks to be developed are to effectively support the ICZM process in the Egyptian northwest coast

The following sections describe the aforementioned governance structures needed to fully implement ICZM in the study area, as well as the communication strategy which must exist between these structures to ensure the correct functioning of the ICZM process.

4.3.1. Administrative and Executive Structures

As mentioned before, the Administrative and Executive Structures include decision-makers, planning authorities and the executive bodies. These structures are in charge of solving one of the major problems in environ-

mental policy effectiveness, which is the lack of coordination among the multiple agencies of government and an absence of integration of policy, plans and implementation efforts of governments at different scales⁴.

The government coordination and cooperation present two different approaches:

- **Vertical coordination, referring to how national government relate to regional governments**
- **Horizontal coordination, among the multiple agencies of government with competencies and responsibilities at the coastal areas.**

The ICZM Plan considers both approaches and promotes the coordination and cooperation between the different administrative sectors to reduce conflicts and incoherencies between government policy and action. Therefore, in addition to the existing National ICZM Committee, the proposed administrative and executive structures include:

- The Matruh ICZM Committee, in line with the National ICZM Strategy, which is the forum for the main sectoral Matruh authorities to discuss and agree upon common positions and criteria. It is a policy-maker structure.
- The Technical Secretariat, in contrast, is the executive body of the Matruh ICZM Committee and is in charge of developing the ICZM Plan. Technicians and managers are part of this structure.

Figure 4.3 shows these governance structures and the information flow between them. It is important to note that these structures, which are further explained in the following sections, require legislative and regulatory frameworks to support their activities.

4 Sutton V. Custom, tradition and science in the South Pacific: Fiji's new Environmental Management Act and vanua. *Journal of South Pacific Law* 2005; 9: 19-27

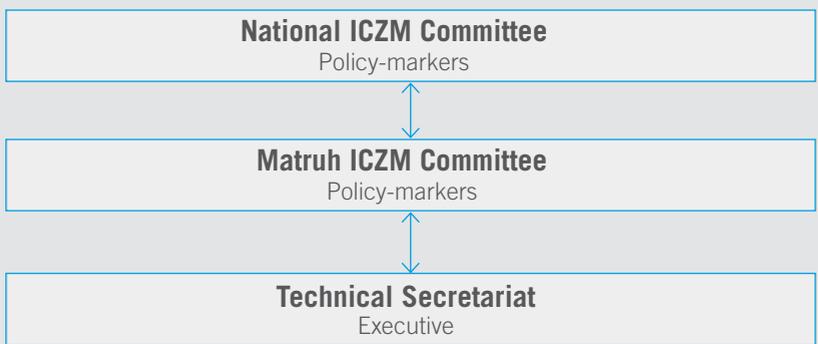


Figure 4.3. Administrative and Executive Structures

The Matruh ICZM Committee

The Matruh ICZM Committee (MICZMC) is to strengthen integrated and comprehensive approaches at the decision-making process. Furthermore, the MICZMC is the ICZM Focal Point of Matruh Governorate and it serves as a liaison with the National ICZM Committee.

The Committee will be formed by high-level policy makers and there will be a maximum of 6 components to facilitate discussions and agreements between the different components. The stakeholders forming part of the MICZMC are in charge of:

- Agreeing upon common criteria for the decision-making process, reducing conflicts and incoherencies between sectoral plans of different agencies and authorities.
- Ensuring a close coordination through joint consultative or joint decision-making procedures of coastal strategies, programmes and plans between national authorities and regional and local bodies.

Figure 4.4 shows the interactions of the Matruh ICZM Committee with the following structures:

- The National ICZM Committee, to discuss the policy and technical aspects of the ICZM Plan implementation process. In fact, Matruh and National ICZM Committees shall meet periodically to ensure a close collaboration. One representative of each Committee will be part of the other one, since reciprocity will ensure the information flow; promote coherence between national and regional policies and development priorities, contributing to ensure the vertical coherence between national and regional levels.
- The Technical Secretariat will periodically report to the MICZMC the activities carried out, the state of the ICZM process in Matruh and the major conflicts and incoherencies detected in the sectoral plans to be discussed within the Committee.
- The Northwest Coast Partnership will support the public debate between the stakeholders interested in the ICZM process. They provide priorities and consensus to be considered by the MICZMC.
- The Local Competent Authorities with competencies in Matruh coastal resources, to evaluate the integration of ICZM considerations into their Operational Plans and introduce their inputs into the MICZMC deliberations.

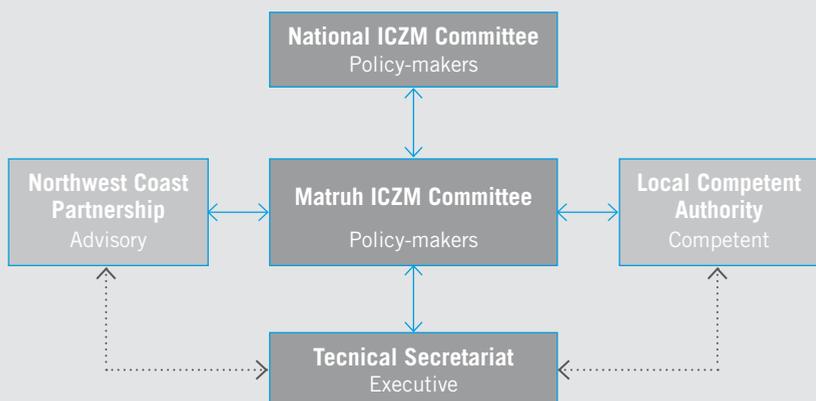


Figure 4.4. Relational System of the Matruh ICZM Committee

MATRUH ICZM COMMITTEE

Functions

- **Initiation of Regional ICZM process**
- **Promote administrative coordination in specific coastal and developmental issues**
- **Resolve specific conflicts**
- **Revision of Operational Plans**

Stakeholders

- **General Secretary of Matruh Governorate**
- **National ICZM Committee liason officer**
- **EEAA Branch Officer**
- **General Directorate of Planning**
- **General Directorate of Environmental Affairs**

The Technical Secretariat of Matruh ICZM Committee

The Technical Secretariat (TS) is the executive body of the Matruh ICZM Committee. It will lead the implementation of the ICZM Plan, although the body in charge is the MICZMC.

The TS is to require a multidisciplinary board to successfully carry out its numerous specialized activities, such as:

- Coordination of Sectoral Actions (development of institutional agreements, communicate and cooperate with sectoral agencies)
- Legislative Activities (revision of laws and resource use regulations, regulation of collaborative management)
- Financial activities (ensure international donors to maintain ICZM Plan, establishing specific access to micro-credits for Local Initiatives implementation)
- Awareness raising activities (campaigns regarding sustainable development and stakeholder involvement in ICZM)
- Capacity Building activities (adaptation of administrative structures to new competencies related to ICZM, training technical staff on ICZM process and tools, collaborative planning and management, conflict resolution techniques; technically support the creation of local partnerships and consortia).

Information for ICZM is to continuously flow through the relational-system of coastal governance and the TS is at the centre of these relations (Figure4.5), therefore being responsible for the communication and information flow. They are also in charge of summoning the different advisory boards and controlling the meetings agenda of the major part of these advisory boards.

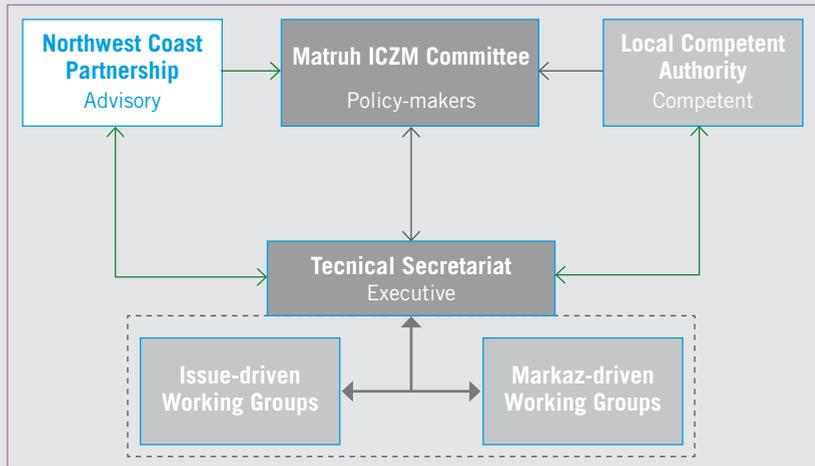


Figure 4.5. Relational system of the Technical Secretariat

The ICZM implementation process needs to be adapted to the learning outcomes, and monitoring the plan implementation is also the responsibility of the TS, since it will centralise the information. In fact, the TS is to ensure the adaptive learning process by implementing, communicating and analysing the progress indicator system (Chapter 6).

TECHNICAL SECRETARIAT OF MATRUH ICZM COMMITTEE

Functions

- Lead the ICZM process in Matruh
- Create and summon the Northwest Coast Partnership
- Promote collaborative planning in specific coastal issues
- Maintain communication channel with Local Competent Authority

Stakeholders

- Chaired by Senior Officer
- Technical ICZM staff
- ICZM Markaz Delegates

Working Groups

The Working Groups are locally driven public participation processes supported by the Technical Secretariat and the Northwest Coast Partnership and they channel the communication flow between the Administration and local population. The Working Groups are constituted through two different processes, i.e. Issue-Driven and Markaz-Driven Working Groups.

The Issue-Driven Working Groups are to technically and scientifically support the discussions held within the Markaz-Driven Working Group. They are chaired by or co-chaired by the local competent authority(ies) and they are open to any other representative of an involved public authority or agency, academia, private sector, local associations, local representative or NGOs. They are to analyze and discuss the management questions regarding the different issues of interest and they are supported by the Northwest Coast Partnership. User needs, cost and benefit assessments, best technology available, policy limitations and conflicts of interest will be discussed in these Working Groups.

The Markaz-Driven Working Groups have the scope of each markaz. They are chaired by the Markaz officer and formed by representative and influential people of each local society. The ICZM delegates, which are part of the Technical Secretariat, are supposed to support both economically and technically the Markaz-Driven Working Groups.

The conclusions of their work will be considered by the competent authority when developing a new Operational Plan.

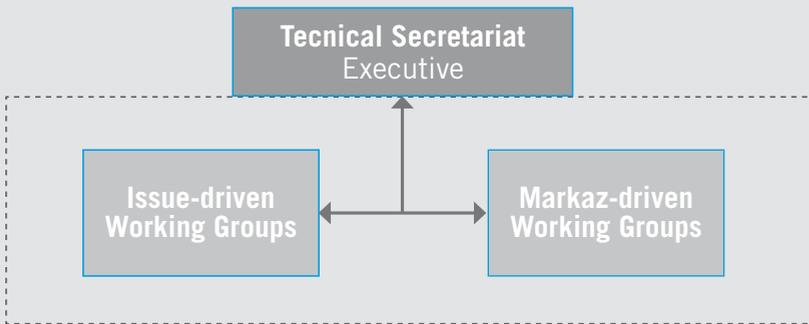


Figure 4.6. Relational system of the Technical Secretariat

Finally, the Working Groups play a very active role in creating social constituency, in encouraging behavioural changes and finally in promoting the success of the Collaborative Management within the ICZM Plan. Moreover, they allow direct communication between administrators and those administered, so they have to ensure that local needs are taken into consideration by policy-makers as well as for administrative actions.

WORKING GROUPS

Functions

- **Development of forums where local stakeholders can debate and expose their needs.**

- Local conflict mediation and resolution
- Provision of sound scientific knowledge regarding specific management questions
- Evaluation and development of policy measures based on the stakeholders' expertise and interest
- Definition of development priorities
- Recommendation of a set of policy proposals and collective actions

Stakeholders

- Chaired by Markaz representative
- Representative and influential people of local society
- Any local stakeholder willing to participate in the Plan, such as local entrepreneurs, research institutions, local associations, NGOs

4.3.2. Advisory Boards

As mentioned before, the Advisory Board encompasses the governance structures created to enhance stakeholder participation, build consensus, support decision-making with sound scientific knowledge and share and integrate information. Therefore, they are to facilitate and promote the public debate and the conciliation of stakeholders' conflicting interests.

According to the international commitments and the ICZM National Strategy, these boards will ensure:

- public participation and stakeholder involvement in the coastal resources governance of Matruh
- detection and resolution of existing conflicts
- integration of disciplines and provision of scientific knowledge into the decision-making process
- evaluation and monitoring of the coastal system to support adaptive learning and management

There are many instruments available, such as forums, workshops and working groups, to raise existing conflicts, develop common understanding and shared visions, create inter-organizational networks or groups of interest, discuss and agree upon long-term objectives, model of development or other management questions. Moreover, other tools, such as coastal observatories and specialized research groups are necessary to support sound scientific decision-making, enlighten management questions with the best available science, evaluate and monitor the progress in sustainable development achieved through ICZM.

Three different advisory boards should deal with the below mentioned goals:

- the Northwest Coast Partnership
- the Matruh Research Advisory Group
- the Matruh Coastal Observatory

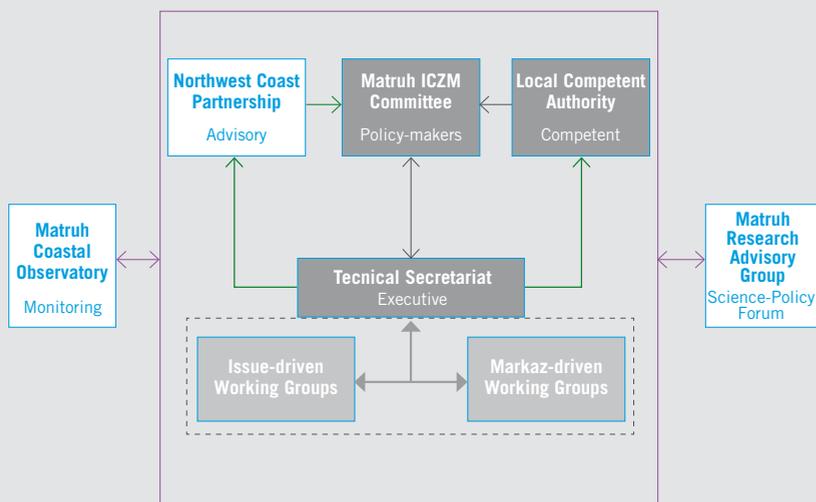


Figure 4.7. Advisory Boards

Northwest Coast Partnership

The Northwest Coast Partnership (NWCP) represents the democratic body of the nested governance system. It will be the forum of the ICZM process, where all the issues and priorities for coastal resource stewardship will be discussed. This partnership will embrace those stakeholders with interest in the study area, including administrations, research institutions, users, associations, private sectors and NGOs.

Progressions on consensus building and conflict resolution are important outputs of the Northwest Coast Partnership. This consensus is required during the definition of priorities, lines of action and issues to be agreed upon and to be proposed to Matruh ICZM Committee. It should therefore encourage the development of inter-organizational networks made up of social, economic and governmental stakeholders. These networks are to work on coastal resources management and create common agreements regarding resource uses and priorities for development.

The Technical Secretariat is in charge of calling the NWCP and developing its agenda. The correct functioning of the NWCP is also the responsibility of the TS, which has to ensure that the majority of the interests are represented

in the partnership, that all their stakeholders have the opportunity to defend their own interests, and that conflicts are discussed within the partnership. Within the NWCP, different Issue-driven Working Groups will be created. These Working Groups will analyze those specific interests agreed upon by the Partnership which are a priority for the development of the study area. At least four working groups will be created, one for each strategic objective belonging to the Area of Activity B (Planning a Sustainable Use of Coastal Resources) although this Plan recommends creating as many as necessary.

NORTHWEST COAST PARTNERSHIP

Functions

- **Agree on Matruh ICZM priorities**
- **Prioritize Matruh ICZM Agenda**
- **Create Issue-driven Working Group**
- **Conflict Mediation**

Stakeholders

- **Chaired by the Technical Secretariat of Matruh ICZM Committee**
- **Markaz representatives**
- **Public Administrations and Authorities**
- **Matruh Research Advisory Group**
- **Local associations**
- **Private sector / Entrepreneurs**
- **NGOs**

Matruh Coastal Observatory

The Matruh Coastal Observatory is to ensure the free flow of information on coastal issues in the study area. It will compile information from diverse sources to periodically update and publish the Northwest Coast Indicators System (Chapter 6).

The Northwest Coast Indicator System is to provide information regarding the environmental quality of coastal resources, economic activities, social welfare, conflict resolution and development of ICZM policies.

Therefore, the MCO will publish a bi-annual report to evaluate the achieved progression on ICZM and sustainable development in the Northwest Coast. This report should update the existing information and be accessible for all the interested stakeholders. This report will be discussed in a specific evaluation process forum of the NWCP.

MATRUH COASTAL OBSERVATORY

Functions

- **Compile the necessary information to update the Northwest Coast Indicator System**
- **Report progress made in coastal sustainability and ICZM activities in Matruh**
- **Make information available to any stakeholder**

Stakeholders

- **Chaired by Senior Officer**
- **Technical staff**

Matruh Research Advisory Group

The Matruh Research Advisory Group (MRAG) is the forum for the scientific community and the policy-makers of Matruh. It will promote the applied research in management questions for developing and innovating new techniques and technologies in terms of cost-benefit, efficiency, environmentally friendly and traditional acceptance.

The establishment of an active partnership within universities and the wider research community of Matruh will substantially increase the coordination and communication of the scientific community. Moreover, the TS and other sectoral agencies involved in research and innovation will also be part of the MRAG, thereby increasing communication between the research community (science providers) and coastal practitioners (science users).

The MRAG is specifically aimed to assist Matruh ICZM Committee to base their decision-making on sound scientific knowledge. Therefore, its main outcome is to encourage management activities and decision-making based upon the best available science. Academia and policy-makers are to take advantage of the synergies between research institutions and policy needs and promote applied research in benefit of the Northwest Coast social and economic development.

MATRUH RESEARCH ADVISORY GROUP

Functions

- **Establish a forum for science providers and science users**
- **Assist MICZMC to base their decisions on sound scientific knowledge**

- Discuss ICZM priorities and challenges with scientific applied research
- Develop joint ventures between scientific institutions to promote applied research

Stakeholders

- Technical staff
- Desert Research Center
- Coastal Research Institute
- Shore Protection Authority
- Alexandria University- Matruh Faculty
- National Institute of Oceanography and Fisheries
- Egyptian Environmental Affairs Agency
- Matruh officers

4.3.3. Communication Strategy

The communication strategy is very important to ensure the proper functioning of the governance structures. A good communication strategy would allow committees to perform better, and manage time and efforts more efficiently. The proposed communication strategy identifies information flows and is adapted to the national and local context to ensure the feasibility of the proposal.

The Figure 4.8 illustrates the whole model of governance and the communication strategy, in which the administrative and executive structures together with the advisory boards are shown.

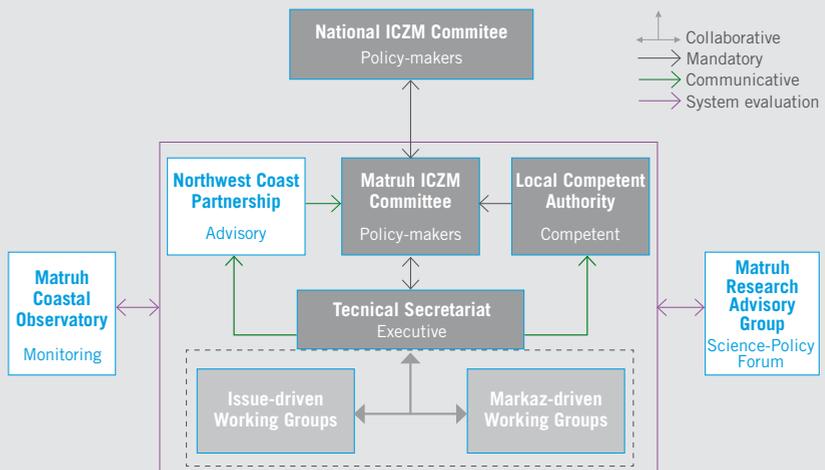


Figure 4.8. Communication Strategy

The Communication Strategy establishes four different types of communication channel which are differentiated by means of the colour legend:

- **Mandatory in blue**
- **Communicative in green**
- **Collaborative management in blue sky**
- **System evaluation in orange**

These different types of communication relationships are described below, as well as the singularities of the proposed relational system.

Relational system

The communication strategy is composed of three different relational subsystems, which are coordinated by the Matruh ICZM Committee and its Technical Secretariat. Each sub-relational system has its own timing and functions.

The first relational subsystem corresponds to National and Matruh ICZM Committees. They are to meet extraordinarily to establish common policy criteria and development priorities. This relational sub-system ensures vertical coordination and cooperation.

The second relational subsystem corresponds to the ICZM process carried out by the MICZMC, the NWCP, the LCA, the TS and the MRAG and MCO. This relational subsystem develops ICZM in the study area. Each of these organisms has their own periodicity although their functioning is coordinated by the Technical Secretariat.

The third relational subsystem is that of collaborative management. It is formed by Markaz-driven Working Groups and Issue-driven Working Groups and supported by the TS. They have to work together and share information and needs to successfully develop collaborative planning and management at the markaz level.

Mandatory relationship

The mandatory relation establishes the skeleton of the procedural system and they are required to maintain the ICZM Plan working. The governance structures involved in this relationship are the policy-makers and executive structures.

Communicative relationship

The communicative relation establishes the framework in which the Administration and society can meet and debate regarding local needs and

existing conflicts. They are necessary to ensure an effective coastal planning and to leverage plans implementation through consensus-building.

Collaborative relationship

The collaborative relation represents the local level where administration is closely working with those being administered. It is made of inter-organizational networks promoted by the Northwest Coast Partnership (Issue-driven Working Groups) and the Markaz-driven Working Groups. Collaborative management will create local constituency for effective coastal governance. In fact, collaborative relation is the base of societal behavioural changes towards sustainable development.

Evaluation system

The evaluation system (Figure 4.9) monitors the evolution of the coastal system of Matruh by means of the Northwest Coast Indicators System, a responsibility of the Matruh Coastal Observatory. The conclusions of such an evaluation are to provide useful information to be analyzed and discussed by the Matruh ICZM Committee and Northwest Coast Partnership.

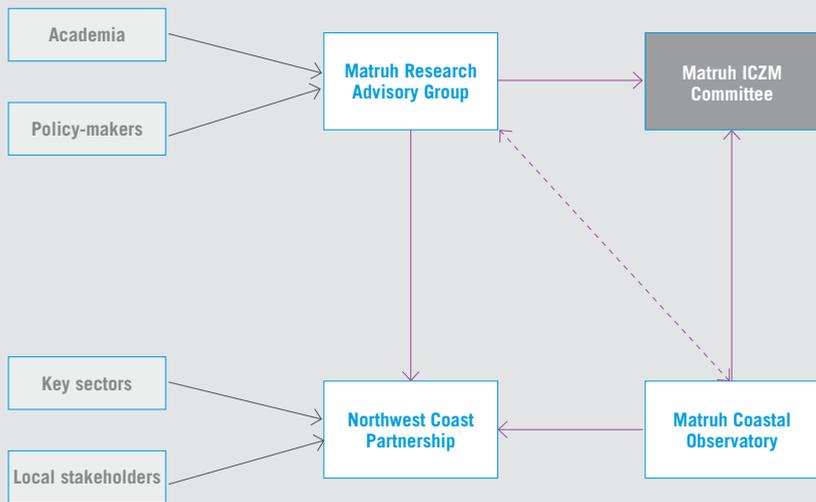


Figure 4.9. Evaluation System

The Matruh Research Advisory Group will also advise these governance structures regarding management options and priorities depending on the constraining factors hindering the sustainable development of Matruh

Moreover, Matruh Research Advisory Group and Matruh Coastal Observatory are to maintain close ties to facilitate data and information exchange to enhance their activities and recommendations for adaptive planning and management.



IMPLEMENTING THE ICZM PLAN



The implementation process of the ICZM Plan requires a strong commitment from public administrations and local population to responsibly manage coastal resources. Many actions need to be tackled and objectives achieved to collectively make progress on the shared vision and mission of the ICZM Plan.

The MSICZM Plan implementation requires to:

- **develop the ICZM legal framework**
- **regulate collaborative planning**
- **train and adapt Matruh administration**
- **build local capacities for effective coastal management**
- **build consensus and establish inter-organizational networks to develop local public-private initiatives**
- **support applied research to base management decisions on sound scientific knowledge**

As mentioned in Chapter 4, the MSICZM Plan is structured in three different Areas of Activity according to the ICZM Strategy to allow linking both initiatives, ensuring vertical coherence and developing the nested governance system for the northwest coast. Each Area of Activity establishes a comprehensive set of objectives (Strategic Objectives) determining specific strategies for actions (Operational Objectives) to be achieved through the implementation of 50 Actions.

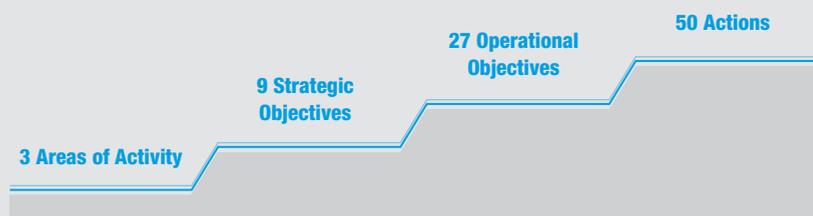


Figure 5.1. Structure of the ICZM Plan

These Operational Objectives are complementary and inclusive; therefore, several specific roadmaps are planned to ensure the concerted implementation of the Actions proposed by each Operational Objective.

The temporal framework of the ICZM Plan implementation, detailed in the Roadmaps, spans over a decade. In fact, these roadmaps ensure the temporal coherence of action implementations and guarantee that enabling conditions are built and specific milestones reached before implementing other specific actions. Moreover, monitoring the Action outcomes will contribute to adapt the ICZM Plan implementation, enabling adaptive planning and management.

This chapter is therefore structured in three major parts:

- Areas of Activity and Objectives, which explains what the ICZM Plan is aiming towards, paying special attention to the Areas of Activity and Objectives since the Actions are thoroughly described by Action Factsheets (Guidelines for the implementation of the Plan)
- Roadmaps for implementation, which elucidates the four Roadmaps proposed, specifying their main milestones and their contribution to Objectives achievement.
- Timescale and budget, which details the temporal framework and the estimated costs for the Marsa Matruh-El Sallum ICZM Plan implementation.

5.1. AREAS OF ACTIVITY, OBJECTIVES AND ACTIONS

The MSICZM Plan, as mentioned, is structured into three main Areas of Activity. These Areas of Activity are general aims to be applied to the Egyptian coastal areas since they are established by the ICZM Strategy. On the other hand, the Strategic Objectives proposed in each Area of Activity respond to the general needs of the study area, regarding those aims established at the central level. Finally, the Operational Objectives are more concise and detailed since they are addressing the specific requirements of the study area to fulfil the needs detected by the Strategic Objectives. Therefore, the ICZM Action Plans are emerging from these Operational Objectives.

In sum, the proposed structure of the MSICZM Plan ensures the establishment of a nested governance system coherent with both the National aims and the peculiarities of the study area.

The MSICZM plan achieves to progress towards general aims to specific actions highly focussed on local needs.

The Areas of Activity and their Strategic and Operational Objectives are explained in this point, while the Actions are thoroughly described in the Guidelines for the implementation of the Plan, through the Action Factsheets. The Areas of Activity are as follows:

- A. Strengthening ICZM Policies
- B. Planning for sustainable use of coastal resources
- C. Promoting stakeholders' awareness

Area of Activity A. Strengthening ICZM Policies

Coastal policies need to be further integrated at the planning stage to enhance effective decision-making processes which will be achieved

through improved horizontal coordination between sectoral agencies, especially by decision-making committees. So, to successfully develop ICZM policies the creation of an institutional framework is required.

The institutional framework is to enable:

- the development of ICZM policies
- the adaptation of the legal and regulatory system to support the ICZM local initiatives
- the development of specific participatory mechanisms to allow stakeholder involvement

Area of Activity	Strategic Objectives
A) Strengthening ICZM Policy	A.01) Maximizing COORDINATION AND COOPERATION between administrations and agencies
	A.02) Reconsidering existing LAWS AND REGULATIONS
	A.03) Ensuring stakeholder INVOLVEMENT

Table 5.1. Area of Activity A and Strategic Objectives

The expected outcomes of this Area of Activity are:

- establishing an institutional and regulatory framework to enable ICZM
- improving coordination and increasing cooperation between administrations
- ensuring the availability of long-term funding mechanisms
- guaranteeing stakeholders' involvement and reducing conflicts
- promoting that management options are based in sound scientific knowledge

Strategic Objective A.01) Maximizing coordination and cooperation between administrations and agencies

Maximizing coordination and cooperation between all the stakeholders with competencies in coastal resources is a fundamental base to successfully develop ICZM.

In fact, coordination committees and institutional agreements between administrations are necessary to strengthen coastal management by reducing conflicts and incoherencies and increasing synergies between government policy and action. What is more, distribution of competencies should be clear for public authorities and agencies addressing coastal area resources.

An **increased coordination** between line agencies will ensure that ICZM will no longer be perceived as a resource-demanding process, since it builds on existing government planning and management processes to

offer an integrated coordinating framework. Actually, ICZM policies are cost-effective since they avoid duplication of efforts of public authorities in coastal management and even reduce costs thanks to information sharing. Finally, this cooperation will allow optimizing the existing human and financial resources of line agencies.

Especially important in Matruh is the **institutional cooperation between governorate and military administrations**, since the Egyptian Army possesses a significant percentage of land in the Northwest Coast. Consequently, specific institutional agreements are necessary to ensure the common use of those areas of scarce strategic interest for the Army, and of special relevance for the proper development of the study area.

Another dimension of coordination and cooperation between public authorities is related to science providers (universities and other scientific institutions) and science users (administration and agencies). Public research and innovation capacities of Matruh Governorate are to contribute to the sustainable development of the northwest coast. Indeed, a **research agenda** is to support policy-making and coastal resource management decisions. Specific research projects concerning management questions and priorities for development should be promoted. The integration of disciplines and policy sectors are afterwards necessary to make sure that environmental policies reflect the inter-dependence of socio-economic and biophysical factors.

Finally, the number of activities, as well as the comprehensiveness, quality and timing of the ICZM program, depend on the availability of local resources. Nonetheless, when local resources are scarce, external donors and international cooperation can significantly contribute to **increase funding opportunities** and to maintain and improve the ICZM process in the long-term.

This Strategic Objective is then composed of the following 3 Operational Objectives, which shall be achieved through 9 Actions, listed in the following Table.

MAXIMIZING COORDINATION AND COOPERATION BETWEEN ADMINISTRATIONS AND AGENCIES		
Operational objectives	Action Code	Actions
Increasing COORDINATION between Matruh Governorate and Central Administrations	A.01.01	Establishment of the Matruh ICZM Committee and Technical Secretariat
	A.01.02	Formal adoption of ICZM policies and principles by Matruh Administration
	A.01.03	Coordination of competencies between administrations for the development of ICZM process
	A.01.04	Development of Institutional Agreements between Matruh Governorate and Ministry of Defence to promote common use of military infrastructures and urban coastal areas

Operational objectives	Action Code	Actions
Developing a RESEARCH AGENDA of applied research to support policy-making and management decisions	A.01.05	Organization of a High Level Workshop on ICZM in Arid Regions
	A.01.06	Establishment of the Matruh Coastal Observatory
	A.01.07	Creation of the Matruh Research Advisory Group
	A.01.08	Development of Specific Research Projects within the NWCP focussed on the Working Groups priorities
Establishing long-term funding mechanisms	A.01.09	Ensure International Donors to provide enough funds to maintain ICZM plan

Table 5.2. Operational Objectives and Actions of A.01)

This Strategic Objective entails the creation of the following governance structures:

- **Matruh ICZM Committee and its Technical Secretariat**
- **Matruh Coastal Observatory**
- **Matruh Research Advisory Group**

Strategic Objective A.02) Reconsidering existing laws and regulations

As mentioned in the previous Strategic Objective, coastal competencies need to be clarified between the involved public authorities (central, regional and local). Indeed it is urgently necessary to clarify the **distribution of competencies** in coastal areas to reduce conflicts and leverage governmental action. Current conflicts and foreseen challenges regarding administrative capacities, legal framework and financial resources of coastal authorities need to be discussed and agreed upon. This will create the conditions for an effective administrative action in coastal areas.

Moreover, the Egyptian regulatory apparatus has significantly grown during the last decades, producing on a daily basis a more complex system where conflicts between sectoral objectives and activities are frequently found. Actually, the centralized scheme adopted by Egypt has provoked that numerous regulations and laws provisions exert as constraining factors for specific local developments.

A revision of the existing regulations affecting the use and exploitation of the coastal resources of Marsa Matruh is therefore necessary, which will lead to the development of new means to facilitate the stakeholders' responsible use and consumption of these coastal resources. Actually, ICZM together with collaborative management are to contribute to the coastal resources sustainable exploitation, but they require a clear **legis-**

lative and regulatory framework to support both processes. This revision of coastal resource regulations should be a learning and adaptive process that should be maintained over time to ensure a progressively more open and responsible access of local initiatives to coastal resources use and exploitation.

Additionally, the establishment of a **Single-Point-of-Contact**, or One-Stop Shop, is to facilitate the communication between resource users and local competencies of public administrations encouraging the creation of jobs and increasing the economic and social benefits of coastal resources exploitation. Nonetheless, public administrations have to ensure that carrying capacity is not over exceeded and land-use regime is respected.

This Strategic Objective is therefore composed of 3 Operational Objectives to be achieved through the implementation of 5 Actions, which are listed in the following Table:

RECONSIDERING EXISTING LAWS AND REGULATIONS		
Operational objectives	Action Code	Actions
Improve distribution of competencias	A.02.10	Establishment of a Legislative Forum on Distribution of competences between Central and Regional administrations: Conflicts and Challenges
Developing specific ICZM LAW OR REGULATION	A.02.11	Development of ICZM regulation
	A.02.12	Incorporation of Collaborative Management into Matruh regulation
Simplifying REGULATIONS concerning resource use and exploitation	A.02.13	Establishment of a Single-Point-of-Contact in Matruh administration
	A.02.14	Development of specific regulations to solve detected problems and incoherencies during Collaborative Management implementation

Table 5.3. Operational Objectives and Actions of A.02

Strategic Objective A.03) Ensuring stakeholder involvement

This Strategic Objective aims to ensure the effective involvement of coastal stakeholders developing specific mechanisms for public participation, providing them with tools for conflict mediation and resolution and conferring an institutional framework to enable a reliable stakeholder participation in coastal resource management.

The specific mechanisms for **public participation** have to ensure not only the existence of specific forums -where Matruh administration, public agencies and authorities, private sectors and entrepreneurs, local associations, academia and NGOs can discuss development priorities- but also the existence of **financing mechanisms** to enable coastal stakehold-

ers to develop their own initiatives regarding sustainable coastal resources use and exploitation. In fact, micro-finance is to allow stakeholders to be fully engaged in coastal resources management through the development of joint ventures and local initiatives. It will help to overcome the limited economic resources and fund availability within the northwest coast.

The reasons underlying the needs for stakeholder involvement were mentioned above and the creation of forums and working groups of stakeholders with different interests will allow emerging conflicting interests that need to be solved to create confidence between coastal stakeholders and leverage sustainable development of the study area. The provision of **conflict resolution mechanisms** is hereby considered essential to progress towards societal and institutional behaviour changes enabling effective coastal governance.

Finally, **collaborative management** is at the centre of sustainable management and ICZM since they are based on the premise that management of coastal areas must be a collaborative effort among all stakeholders. The MSICZM Plan proposes a model of collaborative environmental management which is based mainly on the cooperation of local communities and associations, governorate administration and public agencies sectorally focused, private sector, academia community and NGOs. Nonetheless, stakeholder collaboration is not an end in itself; but just one of the strategies for achieving more sound and sustainable resources management. Indeed, collaborative environmental management requires the establishment of specific working groups, sectorally and territorially focused.

In fact, the MSICZM Plan aims to encourage the development of inter-organizational networks made up of social, economic and governmental stakeholders, which are to mobilize expertise and financial resources from the private sector through Public-Private Partnership (PPP) arrangements, improving the capacity of agencies and communities to deal with future problems.

This Strategic Objective is composed of 3 Operational Objectives to be achieved through the implementation of 5 Actions, which are listed in the following Table:

ENSURING STAKEHOLDER INVOLVEMENT		
Operational objectives	Action Code	Actions
Developing effective MECHANISMS for stakeholders' involvement	A.03.15	Establishment of Northwest Coast Partnership (NWCP)
	A.03.16	Establishment of specific access to micro-credits for Collective Actions Implementation

Operational objectives	Action Code	Actions
Developing CONFLICT RESOLUTION Tools	A.03.17	Development of Conflict Resolution Guidelines and Procedures
Promoting COLLABORATIVE MANAGEMENT	A.03.18	Creation of Markaz-Driven Working Groups in the Northwest Coast
	A.03.19	Establishment of Issue-Driven Working Groups for ICZM Priorities

Table 5.4. Operational Objectives and Actions of A.03

Area of Activity B) Planning for Sustainable Use of Coastal Resources

The objectives and actions herein proposed are not focused on regulating or planning any specific sector or particular issue, which are already addressed by the Competent Authority. On the contrary, they are thought to implement the model of governance that facilitates institutional coordination and cooperation, and enables the involvement of inter-organizational networks during collaborative planning and management. In fact, these inter-organizational networks will significantly contribute to the achievement of those specific objectives set up by sectoral plans. Consequently, the MSICZM Plan is to encourage the contribution of users and other interested stakeholders through Collaborative Planning and Management, which will leverage financial and management resources.

The creation of Public-Private Partnership (PPP) and local consortia are to strengthen economic activities, creating new job opportunities, supporting other economic activities and enhancing social welfare while maintaining and improving the ecological and cultural assets of the Northwest Coast.

The instruments for Collaborative Planning and Management considered by the MSICZM Plan are Collective Actions and Policy Options, described in the following:

- Collective Actions are defined as those actions taken by a group (either directly or on its behalf through an organization) in pursuit of members' perceived shared interests¹. The creation of inter-organizational networks made of local stakeholders, central and regional administration, academic institutions and NGOs will be promoted by ICZM delegates of the ICZM Technical Secretariat. They are as well to provide technical advice to these groups to better define their common interests and organize themselves.
- Policy Options will be raised by local stakeholders and partnerships, and channelled through ICZM delegates and therefore by the ICZM Technical Secretariat. They are to include identification of regulation

(1) Marshall, G. 1998. *A dictionary of sociology*. New York: Oxford University Press.

constraints, fiscal and financial incentives, land-use regimes and zoning proposals among others. These policy proposals will be considered by the sectoral competent authorities and their inclusion or rejection into their Operational Plan justified to the Matruh ICZM Committee.

This Area of Activity addresses most of the Key-Issues that emerged as priority as well as most of the Plans and Studies analyzed. In fact, the four strategic objectives have been identified during the planning process based on the outcomes of the Coastal Diagnosis, the Key-Issues Scheme, the Analysis of Sectoral Plans and the Land-use and Zoning Diagnosis.

Area of Activity	Strategic Objectives
B) Planning a Sustainable Use of Coastal Resources	B.01) Implementing policies and measures included in the NATIONAL WATER RESOURCES PLAN
	B.02) Developing INTEGRATED PRIMARY ACTIVITIES MANAGEMENT
	B.03) Implementing SUSTAINABLE TOURISM ACTIVITIES
	B.04) Improving SOUTHERN SMALL-HOLDERS

Table 5.5. Area of Activity B and Strategic Objectives

The Operational Objectives of this Area of Activity present the same structure:

- **creating constituency for coastal resources stewardship**
- **developing collaborative planning**
- **implementing collaborative management**

They aim therefore to create the enabling conditions to launch the effective collaborative planning and management of the coastal resources, whatever they are.

In fact, the Operational Objectives will encourage the participation of local stakeholders in the problem-solving process to leverage plan implementation.

In the study area, the Matruh Resources Management Program II and the Desert Research Center have an important role as key-stakeholders for the implementation of this Area of Activity because they are already contributing by dealing with the sustainable use of coastal resources (especially primary activities, water management, family business, industrialization) and they have achieved important local progress through pilot cases and local initiatives. What is more, the Matruh Resources Management Program II is to facilitate access to bank loans, and the Desert Research Center is to provide sound scientific knowledge to support local development and new initiatives. Therefore, their active role in the following Strategic Objectives shall be encouraged.

Strategic Objective B.01) Implementing policies and measures included in the National Water Resources Plan

The National Water Resources Plan (NWRP), developed in 2005, is based on the Integrated Water Resources Management (IWRM) approach. Actually, this Plan is an important opportunity to progress towards a more **sustainable use and management of water resources**. The IWRM promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems². Therefore, the NWRP takes into consideration not only the water user sectors but also all the components of Egypt's water resources system and services provided.

The NWRP was developed from a participatory approach and with the support of the inter-ministerial Technical Committee for Water Resources Management.

The resulting plan and policies have been discussed and agreed upon in these inter-ministerial Technical and High Committees for the National Water Resources Plan project.

The implementation process agreed upon by the NWRP, and detailed in Chapter 6.2 of the NWRP³, begins with the creation of a proper enabling environment for effective water management. Indeed the NWRP specifies the required changes in traditional water legislation, which has to include decentralization and privatization aspects. It defines the role of the stakeholders involved, enabling the government to act as a regulator and controller and support the development of Water Boards and Water Users Associations.

Therefore, the institutional roles are considered by the NWRP and they include the creation of effective coordination mechanisms between the different agencies and the development of financial structures that enable these agencies to efficiently perform their tasks.

The organism that should lead this process is the Institutional Reform Unit, established within the Ministry of Water Resources and Irrigation (MWRI)

Considering the aforementioned characteristics and provisions of the NWRP, the 3 Operational Objectives to be achieved through the implementation of 6 Actions are listed in the following table:

(2) World Health Organization. Water Sanitation and Health. Health through Integrated Water Resources Management. http://www.who.int/water_sanitation_health/mdg2/en/index.html

(3) National Water Resources Plan 2017 – Water for the Future. Ministry of Water Resources and Irrigation, Planning Sector. 2005

IMPLEMENTING POLICIES AND MEASURES INCLUDED IN THE NATIONAL WATER RESOURCES PLAN

Operational objectives	Action Code	Actions
Creating CONSTITUENCY for Water stewardship	B.01.20	Constitution of the Northwest Coast Water User Association
	B.01.21	Creation of the Integrated Water Management District in Matruh Governorate
Developing Water COLLABORATIVE PLANNING	B.01.22	Proposal of a set of Collective Actions for Integrated Water Management
	B.01.23	Proposal of Policy Options to be included into the Water Operational Plan
Implementing Water COLLABORATIVE MANAGEMENT	B.01.24	Implementation of Collective Actions for Integrated Water Management
	B.01.25	Monitor progress on water resources stewardship

Table 5.6. Operational Objectives and Actions of B.01

Strategic Objective B.02) Developing integrated primary activities management

The importance of the primary activities in the environmental, social and economic dimension of the Northwest Coast were analysed in Chapter 2. In fact, agriculture and animal production are competing for common resources, such as land-use and water, and creating conflicts between both activities, reducing the availability of these resources and threatening their sustainability.

Moreover, the major part of the study zone is presenting indicators of important soil degradation. Indeed the increasing soil degradation process is partially caused by the existing conflicts between livestock production and agriculture. Actually, there are many large areas of scarce soil productivity that has been put into agriculture, impeding the herds to graze in these areas, and causing overgrazing in the areas without agricultural practice.

Integrated Farming is urgently needed to reduce conflicts and increase synergies between agriculture and animal production.

Adapting crops and farming practices to climate conditions and animal production will contribute significantly to increasing synergies and reducing land-use conflicts. In fact, seed provision is currently centralized and supplied by the Ministry of Irrigation for free, but they neither are specific for the local environmental conditions nor available at the appropriate time (October / November) to take advantage of the autumn rainwater.

In fact, **successful dryland farming requires an integrated management of soil, water, crops and plant nutrients**⁴. This integrated management requires the development of local expertise regarding the water-use efficien-

(4) Koohafkan P & Stewart BA. Water and Cereals in Drylands. Food and Agriculture Organisation, 2008

cy (in situ water conservation, water harvesting and reducing evaporation), increasing soil organic matter content and fertility, and crop selection.

Integration of aquaculture with agricultural production (AAI) is also being promoted by government agencies in other parts of Matruh Governorate, as Siwa. Small scale production units could serve to diversify primary activities and productions and if agriculture and aquaculture were integrated⁵, small-scale fishfarming would increase the productivity of small vegetable gardens⁶. Therefore, AAI can facilitate the achievement of self-sufficiency of food production and reduce vulnerability of small livelihoods by reducing their dependence on limited agricultural and animal production, increasing their source of incomes. Unfortunately, local farmers are unaware of the benefits of developing Integrated Agriculture-Aquaculture Systems. Permits for land and water use and fairly short lease periods discourage many small investors from taking part in the aquaculture development. Besides, small scale farmers have limited access to financial resources to afford improvements in farm management efficiency and productivity.

The successful development of the primary activities requires their integration into a unique management system (livestock/agriculture and aquaculture/agriculture).

This Strategic Objective is made up of 3 Operational Objectives to be achieved through the implementation of 7 Actions which are listed in the following table:

DEVELOPING INTEGRATED PRIMARY ACTIVITIES MANAGEMENT		
Operational objectives	Action Code	Actions
Creating CONSTITUENCY for Integrated Primary Activities Stewardship	B.02.26	Constitution of the Northwest Coast Farmer Association
	B.02.27	Coordinating management of a seedbed adapted to Aridlands conditions
	B.02.28	Training farmers associations on Integrated Farming Management
Developing Integrated Primary Activities COLLABORATIVE PLANNING	B.02.29	Proposal of a set of Collective Actions for developing Integrated Primary Activities Management
	B.02.30	Proposal of Policy Options to be included into the Integrated Primary Activities Operational Plan
Implementing Integrated Primary Activities COLLABORATIVE MANAGEMENT	B.02.31	Implementation of Collective Actions on Integrated Primary Activities Management
	B.02.32	Monitor progress on Primary Activities Stewardship

(5) APPWM (Advisory Panel Project on Water Management). Conclusions of the Workshop on The use of Brackish Groundwater in Agriculture and Aquaculture: Seeking the Future. Cairo, 2-5 December, 2006.

(6) Brummett, R.E. & Noble, R. 1995a. Aquaculture for African smallholders. ICLARM Technical Reports 46.

Table 5.7. Operational Objectives and Actions of B.02

Strategic Objective B.03) Implementing sustainable tourism activities

The singularities found in the study area (culture and historical heritage, sabkhas and salines, beaches and desert areas, migratory birds) are the major strengths for tourism development. In fact, the **integration and harmonization of tourism** into the economic, social and ecological environments is a key element in the success of tourism development in the actual highly competitive international market⁷.

However, tourism is not currently developed taking into consideration the local community welfare as it should, at least ensure the provision of basic needs to local communities to avoid social conflicts and that local population is discouraged to take part in the tourism development.

The successful sustainable tourism development will help develop other economic and social activities which go in parallel and in harmony with tourism activities:

- **family business (falconry, tentmaker, medicinal plants, handicrafts, Bedouin food)**
- **environmental conservation and awareness (educational activities, bird watching, environmental volunteering activities)**
- **cultural and historical heritage (Bedouin traditions and celebrations, Ancient Egypt, scenarios of the WWII)**

There are many economic, cultural and social activities that should in turn be integrated into a comprehensive strategy for development and they need to be sustained by the corresponding Tourism Operational Plan, which shall include economic, social, cultural and ecological objectives.

Actually, the adaptation of tourism development into a sustainable development strategy for the Northwest coast requires the existence of dense local social networks. These networks are to enable the local population to improve their active involvement in the tourism development. Indeed, local social networks are important to:

- increase the interlocution capacity with public authorities, economic institutions and other groups and associations;
- diversify tourist products integrating other social and economic activities;
- create partnerships and consortia to develop specific activities;
- reduce conflicts and improve social and economic revenues;
- increase investment capacity to develop competitive products for international tourist market.

Sustainable tourism is to promote a local-based development, respectful with the cultural heritage and environmentally friendly.

(7) Helmy Eman M. Tools for Tourism development in the Egyptian Northwest Coast: a Sustainable Development Approach. Egyptian Journal of Tourism & Hospitality, 2004: 9.

This model of tourism development is to require a common vision and specific long-term objectives.

Therefore, building consensus between the different stakeholders needs to be promoted through participatory workshops and awareness raising campaigns. In fact, the establishment of a brand to identify this sustainable tourism development will significantly contribute towards consensus building, highlighting its strengths and opportunities and introducing the study area into the competitive international market.

This Strategic Objective is composed of 3 Operational Objectives to be achieved through the implementation of 6 Actions which are listed in the following table:

IMPLEMENTING SUSTAINABLE TOURISM ACTIVITIES		
Operational objectives	Action Code	Actions
Creating CONSTITUENCY for Tourism stewardship	B.03.33	Constitution of diverse Associations with interest in tourism development
	B.03.34	Public Workshops "Creation and Development of the brand Northwest Coast Tourism"
Developing Tourism COLLABORATIVE PLANNING	B.03.35	Proposal of a set of Collective Actions for Northwest Coast Tourism development
	B.03.36	Proposal of Policy Options to be included into the Operational Plan for Northwest Coast Tourism development
Implementing Tourism COLLABORATIVE MANAGEMENT	B.03.37	Implementation of Collective Actions for Northwest Coast Tourism development
	B.03.38	Monitor progress on Tourism STEWARDSHIP

Table 5.8. Operational Objectives and Actions of B.03

Strategic Objective B.04) Improving southern small-holders conditions

The MSICZM Plan refers to southern livelihoods as local communities that operate and survive in the nearby changeable and hazardous desert environment. These communities are frequently characterized by:

- **small-scale**
- **resource-poor**
- **subsistence-based farms**
- **infrastructure isolation**
- **lack of water supply**
- **energy shortage**
- **progressive extreme environmental conditions due to the Sahara presence**

These Bedouin communities are mainly semi-nomadic people, found in small pastoral groups that largely depend on livestock and practice agriculture at a base camp. Currently, the absence of water and energy security together with the problematical roads communication network makes these **communities highly vulnerable to droughts, diseases and hunger**. In fact, there is an increasing migration towards the settled communities near the main infrastructures that provide them with energy and water supply and easy road access. This migration will most surely progressively increase the number of land reclamation and property rights conflicting issues.

Actually, the ICZM Plan addressed this Strategic Objective because of the conditions found in the southern stretch of the study area and the particularity of the Bedouin communities living there. As mentioned in Chapter 2, these are voiceless communities in which specific measures to poverty alleviation are required.

This strategic objective aims then to create enough social and administrative constituencies to develop collaborative managing for poverty alleviation and vulnerability reduction.

Some previous international projects, mainly in rural areas and through the development of the Matruh Resources Management Program have achieved important progress in transportation, water harvesting, wadi development, animal production and female involvement. The Sustainable Development Center for Matruh Resources, partially funded with the above-mentioned projects, is a key stakeholder and will significantly contribute to providing sound knowledge regarding specific low-cost and low-risk measures to poverty alleviation, water harvesting, energy supply and efficiency-use methods. It also aims to provide specific training and technical support to small-holders.

This Strategic Objective is composed of 3 Operational Objectives to be achieved through the implementation of 5 Actions which are listed in the following table:

IMPROVING SOUTHERN SMALL-HOLDERS CONDITIONS		
Operational objectives	Action Code	Actions
Creating CONSTITUENCY for southern small-holders	B.04.39	Public Workshops “Improving Infrastructures and Living Conditions of southern small-holders”
Developing COLLABORATIVE PLANNING in southern small-holders	B.04.40	Proposal of a set of Collective Options for the improvement of Infrastructures and Living Conditions in southern small-holders
	B.04.41	Proposal of policy options to be included into the Operational Plan for Infrastructures and Living Conditions improvement in southern small-holders

Operational objectives	Action Code	Actions
Implementing COLLABORATIVE MANAGEMENT in southern small-holders	B.04.42	Implementation of Collective Actions for Infrastructures and Living Conditions improvement in southern small-holders
	B.04.43	Monitor progress on southern small-holders stewardship

Table 5.9. Operational Objectives and Actions of B.04

Area of Activity C) Promoting Stakeholders' Awareness

Promoting stakeholder awareness tackles the needs of increasing capacity building in ICZM at both individual and institutional levels. Actually, "capacity" refers to the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives⁸. Progression on these levels will leverage the plan implementation due to increased capacity and administrative cooperation.

On the other hand, public education and awareness programs are the basis for the development of a process through which the stakeholders influence and share control over development initiatives and the decisions about resources which affect them⁹.

Participation process requires working at two different levels, society and administration:

- **Local stakeholders are aware of the needs of a sustainable approach when dealing with natural resources management and their current possibilities to participate in the ICZM process within the study area. They also require capacity building programs to develop organizational and technical skills to enable them to effectively be part of the nested governance system**
- **Today the factors limiting the advance of integrated coastal management, as mentioned in Chapter III, are the capacity of existing institutions to make such practices operational and the weakness of constituencies both within and without the government that will actively support ICZM initiatives¹⁰**

(8) United Nations Development Programme. Supporting Capacity Development, the UNDP approach. 2009.

(9) Leeuwis C (with contributions from A. van del Ban). Communication for innovation in agriculture and resource management: building on the tradition of agricultural extension. Oxford: Blackwell Publishers; 2004.

(10) Olsen S.B. Educating for the governance of coastal ecosystems: the dimensions of the challenge. Ocean & Coastal Management 2000; 43: 331-341.

Two Strategic Objectives have been identified to Promote stakeholders' awareness in the Northwest Coast of Matruh.

Area of Activity	Strategic Objectives
C) Promoting Stakeholders' Awareness	C.01) Promoting INSTITUTIONAL CAPACITY BUILDING in ICZM to strengthening effective coastal management
	C.02) Promoting PUBLIC EDUCATION AND AWARENESS programmes to create constituency for coastal management

Table 5.10. Area of Activity C and Strategic Objectives

Strategic Objective C.01) Promoting institutional capacity building in ICZM to strengthening effective coastal management

Practicing ICZM is a new challenge for Matruh administration. The availability of human capabilities in Matruh for the planning, implementation and management of the ICZM program is crucial. Capacity building includes the development of human resources, organizational capacities and institutional and legal framework, although the institutional and legal frameworks are developed through the first Area of Activity (specifically Strategic Objective A.02).

Therefore, this Strategic Objective will deal with the existing organizational capacities and human resources and two different Operational Objectives are set.

- The first one is related to management structures, processes and procedures of Matruh governorate, which needs to be assessed to provide an in-depth evaluation of the current challenges that Matruh administration is facing to properly fulfil the new tasks and duties related to ICZM competencies.
- The second one is related to technical staff working in Matruh administration and other sectoral public authorities and agencies with competencies in coastal management. In fact, an ICZM process involves many administrative staff and they include a broad range of officers of different administrative bodies and technicians with different professional backgrounds. All of them need to be trained to successfully fulfill the requirements of ICZM. Hence, knowledge on ICZM planning and management concepts and tools is required, since practicing ICZM is to distinguish which ICZM tool is more appropriate in each particular case. Technicians and officers will need specific skills regarding new administrative coordination and cooperation mechanisms and these skills are the pillars in which the proposed coastal governance model is supported.

Collaborative management also requires building capacities on cooperation, negotiation and conflict management and resolution, since practicing collaborative management means dealing with conflicts and negotiations. Conflicts should be considered as opportunities to unblock difficult situations and achieve a real solution accepted by all the stakeholders, if possible

Therefore, the Strategic Objective is composed of 2 Operational Objectives to be achieved through the implementation of 3 Actions, which are listed in the following table:

**PROMOTING INSTITUTIONAL CAPACITY BUILDING IN ICZM
TO STRENGTHENING EFFECTIVE COASTAL MANAGEMENT**

Operational objectives	Action Code	Actions
Adaptation of administrative structures to ICZM process driven by the National ICZM Committee	C.01.44	Assessment in Capacity Needs of public administrations to successfully develop ICZM processes
Promoting ICZM capacity building to technicians working in administrative authorities and public agencies	C.01.45	Training of technical staff in ICZM
	C.01.46	Training of technical staff in Collaborative Management

Table 5.11. Operational Objectives and Actions of C.01

Strategic Objective C.02) Promoting public education and awareness programs to create constituency for coastal management

The ICZM Plan implies an increased participation of the local population in coastal management and economic development. Indeed, local population will have the opportunity to raise their standards of life on their own and they will actively participate not only in planning their needs, but also in implementing, investing and monitoring their implementation process. Nonetheless, it is required to create the enabling conditions in the local population and to equip them with the necessary knowledge and skills to perform their new responsibilities.

The enabling conditions include a better knowledge regarding sustainable development and environmental crisis, promoting behavioural change in northwest coast society and willingness of local stakeholders to participate in the ICZM

Therefore, this strategic objective aims to increase awareness in local population and to capacitate them to perform their new social responsibilities through the following Operational Objectives and Actions:

**PROMOTING PUBLIC EDUCATION AND AWARENESS PROGRAMMES
TO CREATE CONSTITUENCY FOR COASTAL MANAGEMENT**

Operational objectives	Action Code	Actions
Increasing education on sustainable development	C.02.47	Raising awareness campaigns on sustainable development in schools
	C.02.48	Establishment of an Annual Matruh Coastal Stewardship Award
Providing capacity building for collaborative and organizational development	C.02.49	Training local communities in organisational and technical capabilities
Improving the involvement of local population in the decision-taking process	C.02.50	Raising awareness campaign regarding stakeholder involvement in the decision-making processes

Table 5.12. Operational Objectives and Actions of C.02

5.2. ROADMAPS FOR MS ICZM PLAN IMPLEMENTATION

As previously mentioned, the Operational Objectives are complementary and inclusive and many of them propose specific Actions that need to be implemented in concert. Therefore, the MSICZM Plan provides four roadmaps, included in the Guidelines for the implementation of the Plan, to ensure the temporal coherence of the Plan implementation. Besides, these roadmaps establish the temporal framework and facilitate the adaptive ICZM process, since the successful implementations of specific actions are to determine if the required enabling conditions for the following ones are met.

The main objectives of the roadmaps are to:

- introduce temporal coherence between actions, ensuring that enabling conditions have been reached to launch specific actions
- group those actions strongly related to different areas of activity and strategic objectives and structuring their implementation into a coherent temporal sequence
- allow controlling the future management needs during ICZM Plan progression (adaptive process)

The MSICZM Plan includes four time-bounded roadmaps, namely as follow:

- Establishing an Institutional and Regulatory Framework for ICZM
- Building Local Capacities for Coastal Governance
- Developing a Research Agenda
- Implementing Coastal Stewardship of the Northwest Coast

These Roadmaps are summarized as Figure 5.2 and Table 5.13 shown. The figure represents the temporal schedule of the Roadmap and includes the following information:

- Code of Action
- Action
- Timeline

ROADMAP02 – BUILDING LOCAL CAPACITIES FOR COASTAL GOVERNANCE											
Code Action	Action	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
C.02.50	Raising awareness campaign regarding stakeholder involvement in the decision-making processes										
C.02.49	Training local communities in organisational and technical capabilities										
A.03.16	Establishment of specific access to micro-credits for Collectives Actions implementation										
A.03.15	Establishment of the Northwest Coast Partnership (NWCP)										
A.03.18	Creation of Markaz-driven Working Groups in the Northwest Coast										
A.03.19	Establishment of Issue-driven Working Groups for ICZM Priorities										
C.02.47	Raising awareness campaigns on sustainable development in schools										
C.02.48	Establishment of an Annual Matruh Coastal Stewardship Award										

Figure 5.2. Roadmap Building local capacities for coastal governance

On the other hand, the table gives information on the contribution of each Roadmap to the achievement of the MSICZM Plan Strategic Objectives and Areas of Activity.

Operational Objectives developed through RM02	Strategic Objectives achieved	Area of Activity
Developing effective MECHANISMS for stakeholders' involvement	66% A.03: Ensuring stakeholder INVOLVEMENT	A – Strengthening ICZM policies
Promoting COLLABORATIVE MANAGEMENT		
Increasing EDUCATION ON SUSTAINABLE development	100% C.02: Promoting PUBLIC EDUCATION AND AWARENESS programmes to create constituency for coastal management	C – Promoting stakeholder's awareness
Providing CAPACITY BUILDING for collaborative and organizational development		
Improving the INVOLVEMENT OF LOCAL population in the decision-taking process		

Table 5.13. Roadmap contribution to Objectives achievement

As mentioned, the Roadmaps are included in the Guidelines for the implementation of the Plan; however the four Roadmaps are described in the follow sections:

RM01. Establishing an Institutional and Regulatory Framework for ICZM

This Roadmap aims to adopt the regulatory framework, management procedures, funding mechanisms and institutional capacity building for effective ICZM process. This process should be long-term financed and cost-effective, since it aims to join efforts and reduce overlapping of competencies. Besides, monitoring the policy cycle is part of the process and the adaptation of the regulatory framework to solve those problems and incoherencies detected during the implementation is included at the end of this Roadmap.

RM02. Building Local Capacities for Coastal Governance

This Roadmap aims to ensure that local communities and all involved coastal stakeholders have the technical, organizational and financing capacities to fully participate in the ICZM process. The creation of the Northwest Coast Partnership will allow stakeholders' to access information and contacts, foment new collaboration opportunities and mobilise community involvement in decision-making providing a neutral platform for debate. Moreover, it encourages behavioural changes through specific awareness

campaigns and the establishment of an annual Award for those initiatives promoting the sustainable development of the study area.

RM03. Developing a Research Agenda

This Roadmap aims to encourage the development of specific research projects applied to management questions in the Northwest Coast of Matruh. In fact, scientists are to play a more prominent role in the policy-making process, since frequently many policies and regulations require the definition of specific targets and the establishment of socioeconomic and environmental status. Actually, the creation of the Matruh Research Advisory Board is the communication platform to facilitate communication between scientists and decision-makers. The development of a Research Agenda, or Strategy, for the Northwest Coast of Matruh shall be created in association with academia and other organisations and agencies with research interests in the coastal zone and be intended as a guide in developing collaborative geographically-based research within the interest of the Northwest Coast Partnership¹¹.

RM04. Implementation of Coastal Stewardship

This Roadmap coincides with Area of Activity B since it is related to coastal resources use and management. In fact, implementing coastal stewardship requires a proper institutional and regulatory framework and the full involvement of local communities in coastal resources management. This Roadmap therefore deals with four different coastal issues, as does Area of Activity B, and it aims to implement wise coastal practices for a more sustainable development in the Northwest Coast.

In the MSICZM Plan, the concept used is Coastal Stewardship, which is the attitude of voluntary compliance demonstrated by a strong commitment and willing participation in initiatives or efforts to ensure the sound and sustainable use of coastal resources¹².

(11) Stojanovic TA et al. The role of research networks for science-policy collaboration in coastal areas. *Marine Policy* 2009; 6: 901-911.

(12) UNESCO, 2002. Wise practices for conflict prevention and resolution in small islands. Results of a workshop on 'Furthering coastal stewardship in small islands', Dominica, 4-6 July 2001. Coastal region and small island papers 11, UNESCO, Paris, 70 pp.

Therefore, coastal stewardship should focus on conservation and sustainable use of coastal and marine environments so that future generations will be able to benefit from the coastal and marine environments as do people today.

Stewardship implies collective responsibility for coastal resources. Every individual should play a role in the implementation of wise coastal practices, which should not necessarily be dominated by financial goals.

5.3 TIMESCALE AND TOTAL COST

The Timescale of the MSICZM Plan is one decade, which is the estimation time needed to carry out the first ICZM policy cycle. Nonetheless, outputs from adaptive management and learning-by-doing processes might adapt the temporal framework of the ICZM Plan.

The estimated Total Cost of the MSICZM Plan is 11,300,000.00 EGP

The costs are estimated according to each action, as shown in Table 5.14. The detailed description of each cost is provided in the Guidelines for the implementation of the Plan, and these costs are calculated based on the following expenses:

- Installation expenses
- Employees
- Operational expenses
- Office equipment
- Meeting expenses
- Travel expenses
- Others

Code Action	Action	Timeline	Total Cost (10 ³ EGP)
A.01.01	Establishment of the Matruh ICZM Committee and Technical Secretariat	10	1,730
A.01.02	Formal adoption of ICZM policies and principles by Matruh Administration	1	0
A.01.03	Coordination of competencies between administrations for the development of ICZM process	6	276
A.01.04	Development of Institutional Agreements between Matruh Governorate and Ministry of Defence to promote common use of military infrastructures and urban coastal areas	8	120
A.01.05	Organization of a High Level Workshop on IZCM in Arid Regions	1	400
A.01.06	Establishment of the Matruh Coastal Observatory	9	874
A.01.07	Establishment of the Matruh Research Advisory Group	8	320
A.01.08	Development of Specific Research Projects within the NWCP focussed on the priorities of the Working Groups	8	800
A.01.09	Ensure International Donors to provide enough funds to maintain ICZM plan	9	162
A.02.10	Establishment of a Legislative Forum on Distribution of competences between Central and Regional administrations: Conflicts and Challenges	1	75
A.02.11	Development of ICZM regulation	1	0
A.02.12	Incorporation of Collaborative Management into Matruh regulation	1	0
A.02.13	Establishment of a Single-Point-of-Contact in Matruh administration	7	82
A.02.14	Development of specific regulations to solve detected problems and incoherencies during Collaborative Management implementation	4	20
A.03.15	Establishment of Northwest Coast Partnership (NWCP)	8	200
A.03.16	Establishment of specific access to micro-credits for Collective Actions Implementation	8	1,600
A.03.17	Development of Conflict Resolution Guidelines and Procedures	1	15

A.03.18	Creation of Markaz-driven Working Groups in the Northwest Coast	3	152
A.03.19	Establishment of Issue-driven Working Groups for ICZM Priorities	3	152
B.01.20	Constitution of the Northwest Coast Water User Association	8	85
B.01.21	Creation of the Integrated Water Management District in Matruh Governorate	8	0
B.01.22	Proposal of a set of Collective Actions for Integrated Water Management	2	40
B.01.23	Proposal of Policy Options to be included into the Water Operational Plan	2	40
B.01.24	Implementation of Collective Actions for Integrated Water Management	5	0
B.01.25	Monitor progress on Water Resources Stewardship	4	260
B.02.26	Constitution of the Northwest Coast Farmers Association	8	210
B.02.27	Coordinating management of a seedbed adapted to Aridlands conditions	7	175
B.02.28	Training farmers associations on Integrated Farming Management	3	87
B.02.29	Proposal of a set of Collective Actions for developing Integrated Primary Activities Management	2	40
B.02.30	Proposal of Policy Options to be included into the Integrated Primary Activities Operational Plan	2	40
B.02.31	Implementation of Collective Actions for Integrated Primary Activities Management	5	0
B.02.32	Monitor progress on Integrated Primary Activities Stewardship	4	260
B.03.33	Constitution of diverse Associations with interest in tourism development	3	120
B.03.34	Public Workshops "Creation and Development of the brand Northwest Coast Tourism"	1	120
B.03.35	Proposal of a set of Collective Actions for Northwest Coast Tourism development	2	40
B.03.36	Proposal of Policy Options to be included into the Operational Plan for Northwest Coast Tourism development	2	40
B.03.37	Implementation of Collective Actions for Northwest Coast Tourism development	5	0
B.03.38	Monitor progress on Tourism Stewardship	4	260
B.04.39	Public Workshops "Improving Infrastructures and Living Conditions of southern small-holders"	1	120
B.04.40	Proposal of a set of Collective Actions for the improvement of Infrastructures and Living Conditions in southern small-holders	2	40
B.04.41	Proposal of Policy Options to be included into the Operational Plan for Infrastructures and Living Conditions improvement in southern small-holders	2	40
B.04.42	Implementation of Collective Actions for Infrastructures and Living Conditions improvement in southern small-holders	5	0
B.04.43	Monitor progress on southern small-holders stewardship	4	260
C.01.44	Assessment in Capacity Needs of public administrations to successfully develop ICZM processes	1	20
C.01.45	Training of technical staff in ICZM	2	70
C.01.46	Training of technical staff in Collaborative Management	3	105
C.02.47	Raising awareness campaigns on sustainable development in schools	7	700
C.02.48	Establishment of an Annual Matruh Coastal Stewardship Award	7	700
C.02.49	Training local communities in organisational and technical capabilities	4	400
C.02.50	Raising awareness campaign regarding stakeholder involvement in the decision-making processes	2	50
TOTAL	10 YEARS		11,300

Table 5.14. Estimated Cost of the MSICZM Plan

6

MONITORING THE ICZM PLAN



This Chapter introduces the monitoring procedure for the ICZM Plan implementation which should be subjected to regular evaluation as a way to continually improve the ICZM process. Two different Indicator Systems are herein described, the Northwest Coast Indicator System and the MSICZM Plan Progress Indicator System. At the end of this Chapter, the contribution of the MSICZM Plan Progress Indicator System to the process of adaptive learning is also explained.

Monitoring is the continuous or periodic process of collecting and analyzing data to measure the performance of a programme, project or activity¹. It provides managers and stakeholders with regular feedback on implementation and progress towards the attainment of environmental objectives.

Monitoring enables managers to take appropriate corrective actions to achieve the expected results, i.e. evaluating the progress of the ICZM process and improving its development.

Indicators are used for monitoring, since they are quantitative or qualitative statements or measured/observed parameters that can be used to describe existing situations and measure changes or trends over time¹. They have three main functions, which are simplification, quantification and communication.

From a scientific perspective, effective indicators should have the following characteristics:

- Representative of the parameter at hand
- Readily measurable: available data sources, using existing instruments...
- Cost effective: cost included in plan implementation
- Concrete: directly observable and measurable
- Easy to interpret and understood by many stakeholders
- Grounded on scientific theory
- Sensitive to changes in the properties monitored
- Responsive: measure the effects of management actions
- Specific: respond to the properties intended

Additionally, from a management perspective, indicators should be:

- Relevant to management objectives
- Clearly linked to the outcome being monitored
- Developed with all those involved in management
- Part of the management process and not an end in themselves.

(1) A Handbook for Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management. IOC Manuals and Guides, 46; ICAM Dossier, 2, Paris. UNESCO. 2006.

ICZM indicators should take into account that coastal ecosystems support complex social, cultural and economic human systems.

In fact, human activities have both direct and indirect impacts on the health and productivity of coastal and marine ecosystems, which in turn affect the quality of life and economies of users.

Effective management of anthropogenic pressures affecting the coastal zone should result in improved environmental quality and reduction of adverse impacts.

This, in turn, should yield socioeconomic benefits in the longer term.

Actually, the indicators to monitor the ICZM process requires to consider the ecological, socioeconomic and governance dimensions of the coastal system and therefore the following indicators should be included in the monitoring process:

- Governance indicators, which measure the performance of program components (e.g., status of planning and implementation), as well as the progress and quality of interventions and of the ICZM governance process itself;
- Ecological indicators, which reflect trends in the state of the environment.
- Socioeconomic indicators, which reflect the state of the human component of coastal ecosystems (e.g. economic activity) and are an essential element in the development of ICZM Plans. They help measure the extent to which ICZM is successful in managing human pressures in a way that results not only in an improved natural environment, but also in improved quality of life in coastal areas, as well as in sustainable socioeconomic benefits.

Considering the three above-mentioned types of indicators, two different indicator systems are proposed to regularly monitor the study area and the ICZM Plan implementation:

- **The Northwest Coast Indicator System**, which is related to the state of the coastal system of the study area, based on the key-issues detected during Phase I and analyzed during the planning stage of Phase II. It is mainly composed of ecological and socioeconomic indicators.
- **The MS ICZM Plan Progress Indicator System**, which is related to the progress of the ICZM Plan implementation, based on the consecution of its Strategic and Operational Objectives. It is mainly composed of governance indicators

These two proposed indicator systems are presented as follows, both of them being adapted to the distinctiveness of the different ecological, socioeconomic and socio-political realities of Egypt and its Northwest Coast.

6.1. THE NORTHWEST COAST INDICATOR SYSTEM

The Northwest Coast Indicator System (NWCIS) provides a dynamic and useful instrument aiming at bringing critical ICZM issues periodically to the attention of policy and decision makers and potential end users.

The approach developed in this Project in selecting indicators for ICZM in the Northwest Coast² is based on:

- Understanding the key-issues of the study area
- Reviewing and analyzing indicators
- Adjusting a set of indicators that can achieve management objectives, taking the key-issues into account, and following simple selection criteria and the “bottom-up” approach³
- Considering that most indicators are produced by other national or local agencies in achieving other objectives.

Besides, a successful selection of indicators will basically guarantee fair monitoring and evaluation of the coastal zone management and the local changes and impacts that are to occur.

The selected set of indicators addresses the key-issues detected in the study area (Chapter 2.2) and provides the needed information to support decision-making process.

This NWCIS is composed of 20 indicators and is presented in the Guidelines for the implementation of the Plan through a set of factsheets, one for each indicator. Every factsheet, as shown in Figure 6.1, provides basic information on a single indicator including:

- the name of the indicator,
- the measurements,
- its meaning or indication,
- the actual parameters that will be measured,
- the data source.

The Matruh Coastal Observatory is to develop reporting products regarding the NWCIS to ensure the exchange of information among users and dissemination of research results to the wider community. These reporting products are to contribute to common understanding regarding the state of the coastal system and consequently facilitate consensus-building regarding long-term environmental and socio-economic objectives.

(2) Strategic Environmental Assessment, Scoping Statement, Deliverable II. MS ICZM Indicators. ENVIRONICS, 2009.

(3) The bottom-up approach involves the establishment of Ecosystem Based Management objectives based on a review of the human activities that may have significant impacts on the ecosystem, and identification of those ecosystem components or properties that may be impacted by them.

Indicator	
Coastal demographic change	
Measurements	
1	No. of inhabitants live in the coastal zone, No. of inhabitants per unit area, growth rate of inhabitants
1	Ratio of rural vs. urban populations
Indication of measurements	
This indicator should provide information on the demographic changes associated with the implementation of the integrated coastal zone management plan. Using the indicator will help monitoring changes in the No. of inhabitant living in the project area as well as their quality of life. The indicator provides information on pressure and impacts on coastal resources. In addition, it could provide indirect information on economic growth. Once the area is developed, the population is expected to increase.	
Parameters	
i	No. of inhabitants living in the coastal zone
ii	No. of inhabitants per unit area, or density of population
iii	Growth rate of inhabitants
iv	Proportion of people living in urban areas versus people living in rural areas
Data Source	
The Central Agency for Public Mobilization and Statistics performs a general population census every 10 years. The Census data are published and posted over the internet as well via the agency's website: http://www.msrintranet.capmas.gov.eg/pls/fdl/msr_intr . In addition, some agencies may perform census for other management objectives; example is NCS within protected areas.	

Table 6.1. Northwest Coast Indicator System – Indicator Factsheet.

6.2. THE MSICZM PLAN PROGRESS INDICATOR SYSTEM

The selection of indicators to monitor the ICZM Plan implementation has been preceded by the study of the different analytical frameworks to identify the relevant elements.

Different conceptual frameworks for the application of indicators in ICZM initiatives exist in the literature. The most relevant frameworks are DPSIR (Drivers, Pressures, State, Impacts and Responses), Policy cycle, Logical framework, Orders of outcomes and Ecosystem-based approach⁴.

The MSICZM Plan Progress Indicator System is inspired in two of these conceptual frameworks:

- **the Policy cycle, which aims to assess the status and results of a programme or project through the implementation of the different steps of the programme or project cycle and the relevant progress markers and performance measures of the ICZM process,**
- **the Orders of outcomes, to measure programme and project progress and effectiveness through the achievement of intermediate and final outcomes.**

(4) A Handbook for Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management. IOC Manuals and Guides, 46; ICAM Dossier, 2, Paris. UNESCO. 2006.

The MSICZM Plan Progress Indicator System shall monitor continuously the implementation process of the MSICZM Plan. This Plan includes

9 Strategic Objectives, 27 Operational Objectives and 50 Actions to be implemented over the next decade, corresponding to one ICZM policy cycle. Therefore, the Progress Indicator System is based on the achievement of Plan's Strategic and Operational Objectives.

The implementation of the different Actions is to control the Objective's achievement. Moreover the MSICZM Plan proposes a sum of 126 indicators to monitor the Plan implementation. These indicators correspond to the 50 Actions of the Plan, which are included in the Action Factsheets, and are classified as:

- Progress indicators (P): assess the progress/ development of the action.
- Result indicators (R): assess the final products obtained because of the actions.

The 126 Action indicators were thoroughly analyzed to select those indicators suitable to inform about the progression of the Objectives' achievement. Finally, a set of 45 indicators were selected and used to build one Progress Index for each Strategic and Operational Objective.

The 126 Action indicators were thoroughly analyzed to select those indicators suitable to inform about the progression of the Objectives' achievement.

Finally, a set of 45 indicators were selected and used to construct one Progress Index per each Strategic and Operational Objective.

The MSICZM Plan Progress Indicator System information is also summarized in factsheets, one per operational objective (Figure 6.2). These factsheets provide the following information:

- Name of the Operational Objective,
- Name of the Indicator,
- Related Action,
- Indicator Code
- Weight of the indicator in relation to its Operational and Strategic Objective
- Values and Thresholds of the indicator,
- Source of information

The Weight of the indicator is based on its importance for the Plan implementation and estimates its contribution to the Objectives' achievement.

Each value is as a fraction of unity.

The Values and Thresholds of each indicator provide semi-qualitative information regarding successful achievement in the implementation of the Actions.

Each value is comprised between 1 and 3, meaning the highest value a successful implementation

Additionally, the MSICZM Plan Progress Indicator System has a Progress Index for each Strategic Objective to monitor the implementation of the ICZM Plan and its successful development. These Progress Indexes are explained in the Guidelines for the implementation of the Plan.

Operational objective		
Increasing COORDINATION between Matruh Governorate and Central Administrations		
Indicator	Budget approval for the Technical Secretariat	Functions and actors clearly defined by legislation or administrative acts
Related action	Establishment of the MICZMC and Technical Secretariat	Coordination of competences between administrations for the development of ICZM process
Code	I.01	I.02
Weight 0.0	50%	50%
Weight S.0	25%	25%
Thresholds	Measure: L.E. addressed to the Technical Secretariat 1: Not approved 2: Approved but less than 60% EGP 3: Approved and more than 60% EGP	1: Not defined 2: Only drafted 3: Clearly defined
Data Source	Technical Secretariat	General Secretary of Matruh

Figure 6.2. MS ICZM Plan Progress Indicator

6.3. ADAPTIVE LEARNING AND MANAGEMENT

ICZM processes require a program of adaptive management and the MSICZM Plan Progress Indicator System allows the continuous assessment of the progression of Plan implementation. These evaluations are to be used by managers to improve their own performance (adaptive management) as well as for reporting (accountability) or as lessons learned to improve future planning.

Adaptive learning and management will allow adapting actions, priorities and even the indicator system to enhance plan implementation.

In fact, the conclusions provided by the Indicator System are to detect possible bottlenecks and unexpected deficiencies in the Plan implementation.

Actually, the representation of the nine strategic indexes easily shows those Strategic objectives that require special attention because of a deficient implementation. The representation also enables us to delve into each Strategic Objective to evaluate the contribution of each operational objective to the overall status of such strategic objective.

The analyses of these Progress Indexes together with the temporal framework provided by the MSICZM Plan ensure the adaptive learning process of the MSICZM Plan implementation and evaluation.

Moreover, to successfully complete the policy cycle the major evaluation outcomes of the MSICZM Plan implementation progress must be introduced into the ICZM process itself.

7

STRATEGIC ENVIRONMENTAL ASSESSMENT OF THE MSICZM PLAN



The Strategic Environmental Assessment carried out during the ICZM planning process is briefly described in Chapter 1 and the full document produced during the SEA is compiled in Annex VII.

This Chapter is the last Deliverable of the SEA process and it summarizes the process followed, the major findings and the evaluation of the planning process and of the integration of the SEA conclusions into the Plan provisions.

7.1. INTRODUCTION

Strategic Environmental Assessments (SEA) is defined as a systematic process for integrating environmental dimensions into strategic decision-making processes during the formulation of policies, plans or programmes.

The early 1990s witnessed a growing recognition that conventional Environmental Impact Assessment (EIA) at a project level could not adequately address or influence decisions made at more strategic levels. This is because the scope for discussing alternatives to the planned actions at EIA level is limited.

Thus, SEA of programmes, plans and policies was advocated. Since then, different approaches to SEA have been developed and evolved. SEA practice still has considerable challenges; however, research in this field has been growing rapidly over the last decade.

Despite the fact that the Egyptian legal framework does not embrace implementation of SEA to the MSICZM plan; thus the process has been carried out based mainly on the EU regulations (Directive 2001/42/EC). SEA process aimed at assessing the potential environmental impact of decision making relevant to the MSICZMP.

Guidelines of SEA methodologies, approaches, and outputs designed by IH Cantabria have been developed by Environics to provide an effective evaluation of the MSICZMP and continuously provide feedback to the planning team to contribute towards meeting the specific commitments of Sustainable Development; improve the quality of MSICZMP; and help explain why an action is necessary and that the proposed response is an appropriate choice or, on the contrary, demonstrate why no action should be taken.

In fact, SEA has been used as a useful tool to create a balance between the social, environmental and economic dimensions of MSICZMP and

to identify decisions which could immediately or subsequently lead to an inappropriate impact on the environment. Accordingly, SEA has provided potential mitigation measures to control any likely impacts of the MSICZMP. In addition, SEA proposes indicators to monitor the state of the environment and the progress of the plan.

This report summarizes the different phases of the SEA process including methodologies, approaches, and final outputs.

7.2. LEGAL FRAMEWORK

The Environment law No. 4/1994 and its Executive Regulations (as amended by Prime Minister's Decree No. 1741 of 2005) are Egypt's primary environmental protection and Environmental Impact Assessment (EIA) legal statute. They repeal all previous environmental legislation which contradict their provisions, with the exception of Law No. 48 of 1982.

Law No. 9 of 2009 repeals and amends some sections of Law No. 4 of 1994, particularly the provision of EIA process. Additionally, a new article has been added, which dictates the establishment of a national ICZM strategy.

Some Competent Administrative Agencies (CAA) require Integrated Environmental Impact Assessments (IEIA) for certain projects. For instance, the Tourist Development Authority (TDA) requires IEIA for tourist projects that exceed an area of 500,000 m². The IEIA assesses environmental impacts on more strategic level for large project; however, it is not comparable to SEA.

Although the Egyptian legal framework supports the preparation of the MSICZM as national and international commitments to which Egypt is a signatory body, it does not require entities to conduct SEA for plans, programs or policies.

Article (1) of the EU Directive 2001/42/EC aims to provide a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes. All of this is carried out to promote a sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment.

Article (2) provides the basic definitions used in the directive, of which the purpose of the directive including in section (a) “plans and programmes” that are co-financed by the European Community, which is the case of MSICZMP.

The procedure of carrying out the SEA has been stated in the following articles 3, 5, 6, 8, 10 of the directive including Scoping, Environmental Report, Consultation, Decision making, and Monitoring respectively.

7.3. GENERAL METHODOLOGY

The general methodology has been developed by Environics based on the IH Cantabria “Guidelines for the Preparation of an ICZM Plan between Marsa Matrouh and El Sallum”.

7.3.1. Procedure

SEA process is often conducted in two years; nonetheless, in this case the SEA was conducted within ten months. Accordingly, adaptation of the European SEA process has been designed to meet the Egyptian circumstances and, in particular, those of the MSICZMP Project.

In order to fulfill the SEA provisions within the proposed timeline, IH Cantabria and Environics have been discussing and agreeing on the SEA design, which includes three milestones: Scoping Statement, Environmental Sustainability Statement, and Strategic Environmental Reporting.

The Scoping Statement began once the Coastal Diagnosis Summary was completed and the key-issues were identified. The objective of the Scoping Statement is to explore the environmental dimension of the key-issues to identify the presence or absence of integration with the environmental conditions, other sectoral plans and the environmental protection commitments.

The Environmental Sustainability Statement was carried out in parallel to the preparation of the Preliminary ICZM Plan. Its objective is to improve the analysis of the management actions exploring their measures, environmental impacts, alternatives and environmental selection criteria.

The Strategic Environmental Reporting started after the Public Consultation on the Preliminary Plan had been carried out. This report evaluates

the SEA process and how their public concerns have been integrated into the ICZM Plan.

7.3.2. Contents

A. Scoping Statement

The Scoping Statement contains the following provisions:

- International, national and regional objectives and commitments on environmental protection.
- Relevant aspects of the actual environmental situation, specifying the environmental reference conditions.
- Foreseen effects on the strategic elements of the territory, on other sectoral plans and on regulations of interest.

B. Environmental Sustainability Statement

The Environmental Sustainability Statement consults for the following contents:

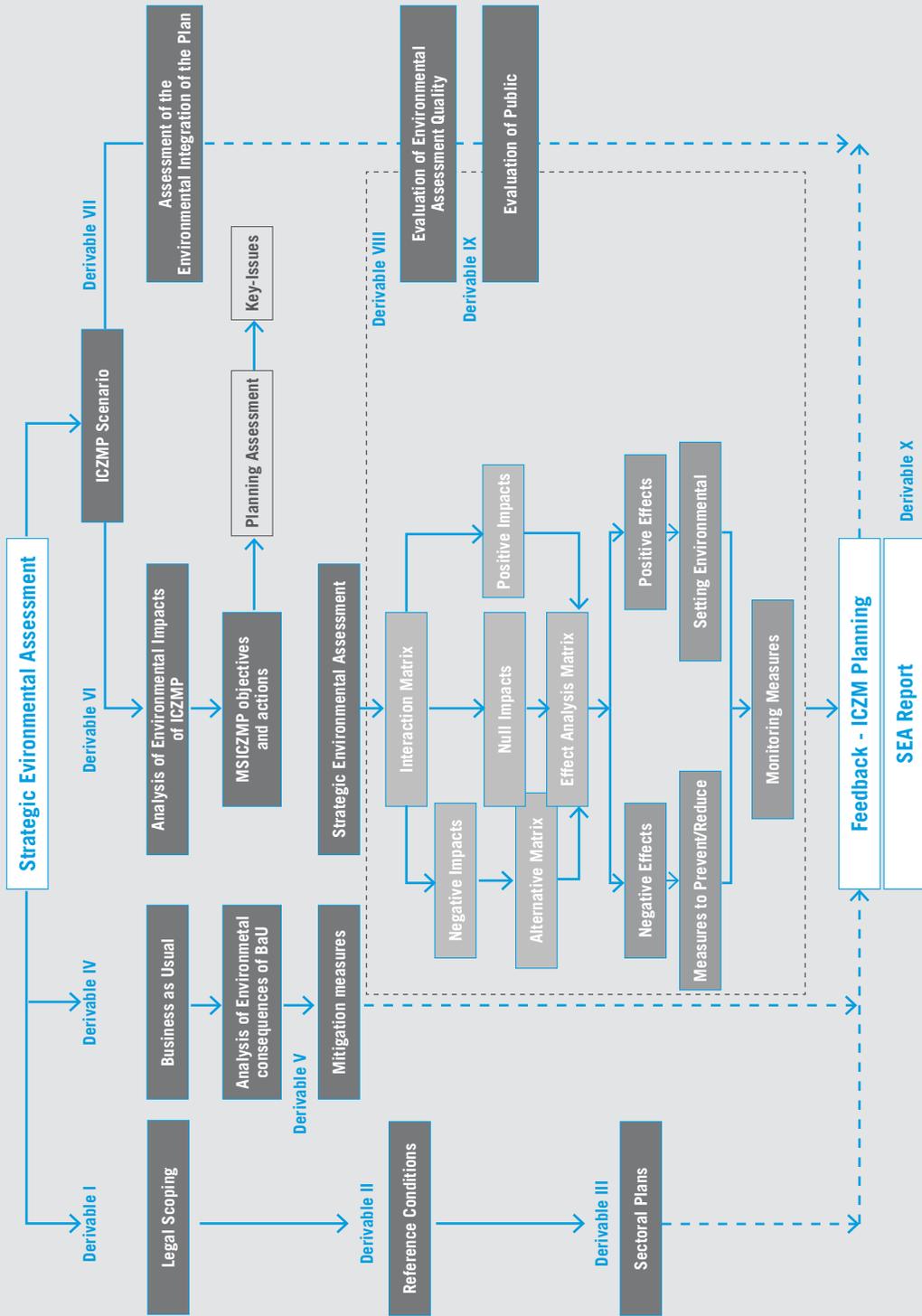
- Relevant aspects of the actual situation of the environment and its probable evolution in case of non implementation of the plan.
- Probable significant effects of the management strategy measures on the environment.
- Possible alternatives of those measures with negative environmental effects, and foreseen measures to prevent, reduce and, when possible, counteract any significant negative environmental effects due to the plan's implementation.
- Specific environmental objectives of those measures with positive effects on the environment.
- Selection criteria for the prioritization of the management strategy measures.
- A description of the foreseen environmental monitoring measures.

C. Strategic Environmental Report

The Strategic Environmental Report includes:

- An evaluation of the integration of the environmental aspects of the plan.
- An analysis of the assessment process, the Environmental Sustainability Statement and their quality.
- An assessment of the inputs of the public participation process carried out and how they have been considered.
- The final determinations that should be incorporated into the plan proposal.

The following graph shows the whole process, and the relevant deliverables.



7.4. SCOPING STATEMENT

The scoping statement includes a review and analysis of the area to validate the feasibility and justifications of the proposed plan.

7.4.1. Legal Scope

A. Approach and Methodology

The legal environmental commitment and objectives of Egypt towards environmental protection have been reviewed at international, regional, and national scale.

B. Findings and Conclusion

Egypt is in process of signing the Mediterranean protocol on ICZM. Moreover, following the establishment of the Mediterranean Union in 2008, Egypt and France co-chair the rotating presidency of the union for the first two years (2009-2011). Accordingly, the Government of Egypt aims to develop and adopt ICZM strategies and plans aiming to protect and sustainably use the Mediterranean resources.

Moreover, Egypt is a signatory body to many international and regional conventions that obligate the GoE to adopt policies and plans to promote the conservation of biological diversity, a sustainable use of environmental resources, the protection of species and species of global concerns, while protecting the cultural heritage.

There are also a number of national laws, action plans, and strategies that promote protection and wise use of natural resources. The law of environment (law 4/1994) has established the national committee of the integrated coastal zone management which includes governmental authorities, members of the private sector, and NGO's.

In 1996, the framework program of ICZM was issued to set the basis of ICZM in Egypt. The program promotes the importance of the ICZM while encouraging a participatory approach in the coastal planning process. The EEAA with the corporation of Priority Actions Program /Mediterranean Regional Activity Centre (PAP/RAC) has recently developed the national draft on ICZM strategy.

Thus, legal foundation to establish ICZM in Egypt is supportive; although constraints might include conflicts of interest among agencies, lack of law enforcement, inadequate institutional and financial capacity.

7.4.2. Reference Environmental Conditions

Defining the reference environmental conditions in the project area is vital when monitoring environmental changes using environmental, social, and economic indicators. These indicators provide data on the existing conditions, and must be measured periodically to give information on environmental conditions and changes.

A. Approach and Methodology

Indicator parameters should be cost-effective. The approach, therefore takes into account common indicators that are generated periodically by other national or local agencies to achieve their own management objectives. For instance, population census is a national task that is performed every decade. Water quality indicators, another example, are measured yearly by the EEAA.

Three international indicator systems have been reviewed and analyzed in detail including the Mediterranean sustainable development indicators, UNESCO Integrated Coastal and Ocean Management (ICOM) indicators, and “Développement Durable des Zones Côtières Européennes” or (DEDUCE) indicators.

The Project area natural and social environments in relation to key-issues have been reviewed. Accordingly, international indicator systems have been used to generate local indicators for the MSICZ, which adapt to local conditions. The new hybrid system has a simple numerical code ranging from 1 to 20, with letters indicating its type (E = environment, S= social, and E=economic). Additionally, 20 factsheets have been provided, one for each indicator. Each factsheet includes the name of indicator, the measurements, the indication of measurements, and the parameters to be measured. Moreover, the factsheet contains reference to data sources for easy data collection. These factsheets are provided in the Guidelines for the implementation of the Plan.

7.4.3. Analysis of Development Sectoral Plans

The development of sectoral plans has been reviewed and analyzed to identify their impacts. The purpose is to highlight synergies and conflicts between the sectoral plans and the MSICZMP key-issues and as a contribution to MSICZMP a series of recommendations have been proposed.

A. Sectoral Plans

The (GoE) has proposed many sectoral plans, which aim to develop the

Mediterranean Western North Coast of Egypt including the Regional Plan (1997-2017) for the Development of the Western North Coast developed by (GOPP), and Matrouh Governorate Development Plan (to 2022);

B. Findings

SEA has defined the main synergies and conflicts of these sectoral plans. Most sectoral plans will impact and be impacted by Socio-cultural issues (tribal life and cultural heritage). Many of the them do not take into consideration important aspects, such as the population growth rate or the carrying capacity of the area's natural habitats and ecosystems. Besides, minefields will impact the economic development of the area.

C. Recommendations Provided

A list of potential approaches to address conflicts between sectoral plans and the key issues has been proposed. Recommendations are classified thematically to cover the main key-issues of the MSICZMP.

• Urban Development

A zoning plan, and a solidwaste management scheme or strategy should be proposed.

• Natural Resources

Management plans to deal with human impacts on natural resources, **and tools** for nature protection such as law enforcement and monitoring of natural resources, should also be implemented. **Monitoring of exotic species**, the creation of a **strategy to establish restoration plans for infrastructure projects to restore the likely to be damaged natural areas, or the monitoring of fishing** not to fish endangered species for handicrafts are all activities which should be undertaken.

• Social Issues

A strategy to support indigenous heritage preservation should be prepared to monitor changes in social life and social organization of target groups, a strategy to deal with ownership or property rights, propose special land acquisition programs to manage issues such as ownership rights, acquiring sensitive lands and historical sites for preservation, raise public awareness for water and energy issues, have best management practices for water and energy conservation, establish cooperation mechanism between security agencies and sectoral governmental entities such as fisheries authority, enforce environmental regulations and guidelines related to coastal development activities.

• Economic Opportunities

to the study also proposes to encourage sustainable tourism such as

ecotourism, geotourism, agrotourism, prepare policy guidelines for tourism to support other economic opportunities in the area, design the Road network not to impact natural flow of waterways, develop traditional low water demanding crops, maximize agriculture on rainfall, promote natural pastures while managing grazing to preserve local medicinal plants, inventory medicinal plants should be inventoried, promote livestock of traditional animals in animal production projects instead of introducing other Nile valley animals (buffalos. and cows), monitor air quality to keep gas releases in acceptable levels, enforce environmental regulations as well as mitigate environmental impacts of industries proposed, provide incentives for investors as a means of compensation for not providing sanitation(e.g. lower tax for few years)

- **Complementary Strategies**

In all cases, implementing sectoral plans requires other strategies including a strategy for communication and/or a strategy of public awareness.

7.5. ENVIRONMENTAL SUSTAINABILITY STATEMENT

The environmental sustainability statement aims to review the two different scenarios: business as usual scenario, and the MSICZMP scenario. Accordingly, the two scenarios have been reviewed and analyzed to assess their consequences and impacts posed by each scenario.

7.5.1. Analysis of the Business as Usual (BaU) Scenario

A. Approach and Methodology

The BaU scenario is a conceptual baseline which projects what would happen in Marsa Matrouh-Sallum sector if there were no changes. The scenario assumes that current land use, sectoral plans, and governmental policies that affect the area development would remain the same. It also presumes that the current trend of economic activities continues. Moreover, this scenario takes into account the potential development projects which would be implemented as planned.

B. Findings

The impacts of business as usual scenario have been classified to address the key-issues. The main finding is that the BaU scenario will severely impact the area's natural and social environment consequently. Urban ecology as a planning approach will have positive environmental impacts on the area.

• Urban Development

It was found that urban development will be accelerated by inputs such as population, economic growth, and tourism adding pressure and demand to available resources, increasing solid waste generation, inducing shoreline alteration, threatening biodiversity, and generally impacting the environmental quality.

• Opportunities for Economic Development

The economic development plan will improve investment opportunities; however, a foster economic development of the area would not create a stable and sustainable economy. Potential conflict in land use is expected because of an inexistence of a zoning plan and ordinance. A shoreline protection plan may reduce other investment opportunities that would take place in setback areas such as agriculture on rainfall, fisheries and aquaculture, animal production and medicinal plants. Proposed industries may threat environmental quality. Fishing might reduce biodiversity, and impact traditional tourism. Animal production impacts natural pasture and increases competition of water resources. Planned massive tourism directly and indirectly impacts natural resources, as well as traditional and cultural heritages. Existing sectoral plans do not encourage renewable energy. Locals of the area have high social resilience; they will adapt easily to the change. Local handicrafts and medicinal plants will, however, be threatened by new industries

• Natural Risks

Development of fisheries as well as upgrading harbor scales will cause local change to coast and cause coastal erosion. Climate change will have impacts on fisheries development in the area resulting from an increase in seawater temperature and pH of. This may cause a shift in species distribution, community structure, and pathogenic spread. Sea-level rise will impact water front buildings within the next few decades, particularly those planned on low laying land.

• Management of Natural Areas

Economic development will change most natural areas due to urbanism and economic activities. Agriculture practices development will impact soil and introduce exotic species to the area. Infrastructure networks will have temporary and permanent impacts on natural areas. Threats to natural resources will increase due to the anthropogenic impacts, and the increased demand for more resources. The nearby economic development will impact the health and biodiversity of wetlands and sabkhas reducing their values for resident and migratory avifauna. The nearby economic development such as tourism will impact the dune system, which in turn will impact beaches and cause beach erosion.

- **Socio-cultural Issues**

Local communities will probably change their lifestyle once the area is developed. Tribal life will impact and be impacted by economic fostering in a negative way. This may cause total/or partial loss of cultural and traditional knowledge. The introduction of overseas fishing companies will impact the organizational structure of local communities and their tribal lifestyle. Tourist areas may develop large communities of second home owners and expatriates, alterations to religious codes and ethics, and rise in social problems.

- **Administrative coordination**

The administrative coordination requires to address conflicts among administrative agencies is potentially high and needs high level of efforts.

7.5.2. Planning Criteria

Once the preliminary MSICZMP has been drafted, SEA has assisted to facilitate the planning process by providing criteria for the planning team. This entailed assessing the proposed planning objectives, their environmental impacts, proposing mitigations measures for those actions that would have negative environmental impacts, setting environmental objectives for actions that have positive environmental impacts, and establishing monitoring indicators for the performance of the plan implementation.

Approach and Methodology

Direct assessment of the MSICZMP proposed objectives and actions has been carried out through two steps:

- **Planning Assessment.**

This includes evaluation of the proposed planning objectives and actions to confirm that they address the identified key-issues.

- **Environmental Assessment of the Preliminary Management Actions**

MSICZMP objectives and actions are assessed against the main environmental factors including air, water, soil, biodiversity, fauna, flora, landscape, human population and wealth, climatic factors, cultural heritage, and material goods.

Results

- **Planning Assessment**

Objectives and actions of the MSICZMP address 15 issues either directly or indirectly, however 13 issues have not been addressed. Roads

and communication infrastructure, and flooding have been classified as influential and important; although they are not addressed by any means of actions. The highly influential and important issues (Water Management, Agriculture and Animal Production) have been addressed in many of the proposed actions. The very influential and important (Expansion of Urban Services, Traditional Knowledge, Property Rights and Industry) have been tackled, but indirectly. The influential and important (Importance 6-7; Influence 5-6): Energy Supply, Roads and Transportation, Family Business, Fisheries and Aquaculture and Floods, have not fully addressed. Flooding could be addressed in water resources management scheme, while roads and communication infrastructure could be tackled in “improving infrastructure and living conditions”.

- **Environmental Assessment of the Preliminary Management Actions**

Most actions have positive or null impacts on the different environmental components, with only one action (improving livelihood) that would probably have a negative impact. The overall proposed actions although they may not improve environmental and socioeconomic conditions, will help maintain their status. SEA recommends that the cultural heritage of local communities should be taken into account during planning the improvement of Living Conditions in Rural Areas. Local should be involved during the implementation of the operational plans.

7.6. STRATEGIC ENVIRONMENTAL REPORTING

This phase of the SEA process has been designed to evaluate integration of environmental aspects into the MSICZP, environmental Sustainability Statement quality, and results of public participation process. In addition to a final report of the SEA process, and how the different SEA outputs have been integrated into the MSICZM plan, which is submitted in this document.

7.6.1. Assessment of Environmental Integration

A. Approach and Methodology

This process aims to evaluate how the environmental aspects have been taken into account during planning. The approach relies on a hypothesis or an assumption that there should be an integration of the SEA results, recommendations and conclusions into the proposed MSICZM plan.

The proposed actions were reviewed to estimate how the different environmental and social components including Air, Water, Land, and Biodiversity, Resource and land use and cultural heritages have been considered in the planning process.

B. Results

- Air

Air quality is taken into consideration during planning. Out of the 50 actions, 19 will assist maintaining the air quality in the project area including actions: 1, 2, 4, 5, 6, 8, 11, 12, 14, 15, 19, 33, 37, 38, 44, 46, 47, 48, and 49.

- Water

Water resources management is one of the main key-issues in the project area. Water resources quality and management is considered in many actions, which will lead to improving both quality and management issues. It was found that 33 actions have been considered to enhance water resources quality and management including actions 1, 2, 4, 5, 6, 8, 11, 12, 13, 14, 15, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 37, 38, 44, 46, 47, 48, and 49.

- Land and terrestrial ecosystems

In the project area terrestrial ecosystems are of pristine conditions including coastal dunes, salt marshes, non-saline depressions, rocky ridges, wadis, inland siliceous deposits, and reed swamps.

Reviewing the actions proposed, 28 actions out of the 50 were noted to take into account the protection of land and terrestrial ecosystems. These include the following actions: 1, 2, 3, 4, 5, 6, 8, 11, 12, 13, 14, 15, 19, 26, 27, 28, 29, 30, 31, 32, 33, 37, 38, 44, 46, 47, 48, and 49.

- Biodiversity

Conservation of Biodiversity has been considered during planning. Accordingly, 27 actions out of the 50 take into account the biodiversity conservation. These include the following actions: 1, 2, 3, 4, 5, 6, 8, 11, 12, 13, 14, 15, 19, 26, 27, 28, 29, 30, 31, 32, 33, 37, 38, 44, 46, 47, 48, and 49.

- Resources and Landuse

Resources and land use has been integrated within 35 actions out of the proposed 50 actions. These actions will assist in good practices of land use aiming at resource sustainable use. These include actions: 1, 2, 3, 6, 9, 11, 12, 13, 14, 15, 16, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 37, 38, 42, 43, 44, 46, 47, 48, and 49.

- Social and Cultural Heritage

Reviewing the actions set by the MSICZM, 36 actions were noticed to have taken social and culture heritage in consideration. These actions will maintain cultural heritage and traditional knowledge. These actions

include: 1, 2, 4, 5, 6, 8, 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 37, 38, 42, 43, 46, 47, 48, and 49.

7.6.2. Evaluation of Environmental Assessment Quality

A. Approach and Methodology

Ideally, Environmental Assessment Quality is evaluated using public inputs through different mechanisms and tools such as roundtables, questionnaires, and online information systems. Since the SEA process guidelines developed by IH Cantabria for MSICZM plan have been designed to be flexible and provide easy evaluation tools, the SEA team has applied a different approach, which has been discussed and accepted by the planning team in accordance with the SEA process. It has been agreed that the SEA team will act as an external environmental auditor in evaluating the quality of environmental assessment.

To carry out the evaluation process, the approach, methodology, results and conclusions of the environmental assessment have been reviewed (Deliverable IV, V, VI, and VII in SEA). To evaluate how the outputs of the environmental assessment process have been considered in the plan, recommendations by these deliverables have been analyzed against the proposed objectives and actions set by the MSICZMP.

7.6.3. Public Participation Assessment

A. Approach and Methodology

As part of the SEA, public participation during the MSICZM planning has been assessed. The assessment has been carried out to evaluate the effectiveness and outcomes of the process. SEA team has communicated with the different project's key-players.

SEA team has been given all necessary information, reports, and documents on the public participation process. In addition, they have attended some of the public meetings including the second participatory workshop. Moreover, the SEA team has also been working together with the planning team to refine the key-issues and key-issues scheme using the SEA team's national and local expertise. Communication has been established between the team and some of the project's key-players too collect missing information.

B. Results

Analysis of the public participation process in the MSICZMP project re-

vealed that the process has had both successes and deficiencies. The process was able to attract public to participate in the process through workshops, meetings, and group thinking; raise public awareness on the issue of ICZM, particularly on the local level; withdraw the attention of public administrative agencies to a new concept of integrated approach, particularly in coastal zone management; and build an agreement and consensus among public on the plan contents including vision, mission, strategic objectives, specific objectives, and actions/activities.

This process; however, was not capable of defining, revising and strengthening the role of different key-actors adequately to ensure active participation; promote good level of communications with the different stakeholders of the project; prepare and train stakeholders well to effectively participate in the process; review and encourage national and local authorities' commitment towards sustainable development; and prepare and promote a conflict resolution mechanism that could have been deployed during the planning process.

During the process of MSICZM planning, conflicts over jurisdictional power and authority were found, which is not surprising as the coastal zone is an area of conflictual characteristics, by nature.

Technical arrangements taken by the project team have allowed the process of public participation to achieve good results, while it was unable to achieve others. The process has faced many challenges, which prevented a comprehensive success. Although the legal framework fully supports the ICZM, the institutional arrangements have been recognized as a constraint.

The institutional structure of the EEAA, as the main key-player, should be developed to facilitate multi-channel communication with counterparts. Moreover, the current lack of an approved National Strategy hinders EEAA contributions to revise the roles of the other partners, and strengthening the responsibilities of each key-player.

An active National ICZM Committee would have greatly benefited the process. The main local key-player, which is Matruh Governorate, would have had a greater role in the local context than that of the EEAA.

There is misunderstanding of counterparts on the ICZM approach. Administrative agencies believe that the MSICZMP is a development plan rather than a management plan. Worries about landuse jurisdiction have been expressed. This is true in part because, although relative processes are not shifted, they are all constrained (streamlined) by a frame-

work concept or a new jurisdictional scope proposed by the MSICZM. Thus the absolute authority and power will be replaced by an integrated decision-making.

The role of IH Cantabria was to facilitate but not dictate actions, which should have been taken by local actors. This is in line with the donor agency (AECID) strategy to provide technical assistance with a minimum interference with local policies.

The implementation of the MSICZMP will require re-activating the public participation process to ensure active engagement and provide efficient outcomes. This will require the implementing agency to be closer to the field, whether it has to be the local authority or have an effective communication with it. Two-way communication channels will re-build mutual trust among these two leading agencies.

In order to ensure that the investment in the preceding phases will result in fruitful outcomes and achieve the planned vision in the subsequent implementation, it is recommended to monitor how the plan actions and activities will be carried out, evaluate the achieved results, and provide support as needed. Accordingly, technical assistance should not to be totally phased-out.

