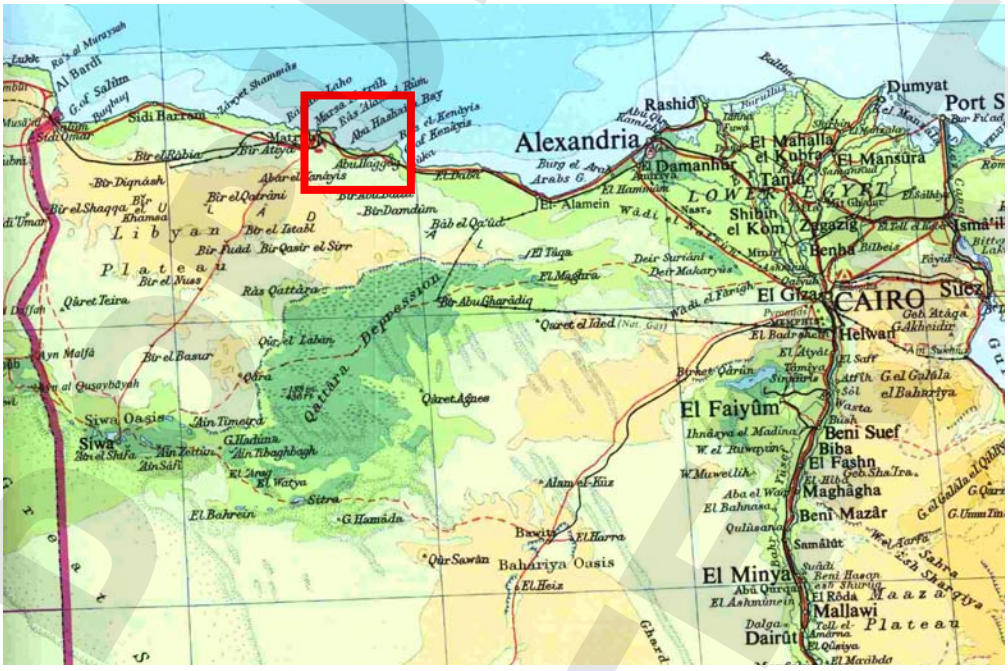
PROGRAMM

UNEP

MEDITERRANEAN ACTION PLAN

Coastal Area Management Programme (CAMP)
FUKA-MATROUH - Egypt

CARRYING CAPACITY ASSESSMENT FOR TOURISM DEVELOPMENT



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PREFACE

The "Tourism Carrying Capacity Assessment for the Fuka-Matrouh Coastal Zone" is one of the activities initiated through the "Coastal Areas Management Programme" (CAMP) for the state of Egypt as an input to the “Coastal Zone Management Plan of the Fuka-Matrouh Area”.

- This work is being carried out by the Priority Actions Programme/Regional Activity Centre (PAP/RAC), as a part of the Mediterranean Action Plan (MAP).
- The national counterpart institution ensuring contacts and co-operation with various other governmental agencies is the Institute for Graduate Studies and Research (UNARC) on the University of Alexandria.

The Tourism CCA for the Fuka-Matrouh Coastal Zone is at the same time a part of the PAP/RAC's priority action “Development of Mediterranean Tourism Harmonised with the Environment” and represents a practical application of the “Guidelines for Carrying Capacity Assessment for Tourism in Mediterranean Coastal Areas” prepared by PAP/RAC.

- This Guidelines intended to be a comprehensive methodological document, a procedure for the analysis and assessment of carrying capacity, as well as an input to the integrated planning and management of Mediterranean coastal areas.

The team working on the "Tourism Carrying Capacity Assessment for the Fuka-Matrouh Coastal Zone" consists of five PAP experts and seven experts from the University of Alexandria. The five PAP experts are:

- Dr. Zoran Klarić, from the Institute for Tourism, Zagreb, Croatia, as the coordinator of the work on the study as well as of the whole PAP action “Development of Mediterranean Tourism Harmonised with the Environment”;
- Dr. Panagiotis Komilis, from Centre for Planning and Economic Research, Athens, Greece, as the expert responsible for economic issues;
- Dr. Miroslav Dragičević, from Horwath Consulting, Zagreb, Croatia as the former coordinator of the PAP action “Development of Mediterranean Tourism Harmonised with the Environment” and one of the authors of the Report of the Mission Concerning the Tourism Carrying Capacity Study of the Fuka-Matrouh area, which has served as a basis of this study;
- Mr. Gojko Berlengi, consultant to PAP, Split, as the expert responsible for the whole ICAM project for the Fuka-Matrouh region and, therefore, for the inclusion of the CCA into ICAM project; and
- Ms. Feyza Surucu from Ankara, Turkey, who was involved in the previous phase of the work together with Dr. Dragičević.

Seven experts from the University of Alexandria are:

- Prof. Mohamed El-Raey, Dean of the Institute of Graduate Studies and Research, University of Alexandria, as the coordinator of the work of all Egyptian experts on CCA, and as the national coordinator for the activities on Integrated Coastal and Marine Areas Management (ICAM), Environmental Impact Assessment (EIA), and Geographical Information Systems (GIS);
- Dr. Ebtehal El-Bastawissi, specialist for tourism issues;
- Dr. Mohamed Abd El-Karim A. Abdrabo;
- Dr. Saleh Mesbah, also as the contact person and coordinator in the first phase of the work;
- Mr. Mamdouh Mohamed El-Hattab, also as the contact person and coordinator in the second phase of the work;
- Mr. Ahmed Shalaby; and
- Ms. Wisam El-Din Mohamed.

The Regional Activity Centre for the Priority Actions Programme of the Mediterranean Action Plan wishes to thank the University of Alexandria not only for their active involvement in the all phases of the work, but also for their hospitality during all PAP expert missions.

The PAP/RAC wishes to thank also the Land Use Planning and Environmental Management Centre (LUPEM) in Marsa Matrouh for their hospitality, help in provision of necessary documentation, assuring contacts with other institutions in Marsa Matrouh, and especially for the excellent guide on our visit, Mr. Ahmed Allam. Finally, we would like to thank His Excellency the Governor of Marsa Matrouh for finding time to receive Mr. Klaric and discuss the PAP work.

1. BACKGROUND AND OBJECTIVES OF THE STUDY

In the Mediterranean, tourism is viewed as one of the most important industries representing nearly 30 percent of world's international tourist arrivals and receipts from tourism. In the light of such big tourist demand, it should be pointed out that the Mediterranean region is facing the problems of saturation and endangered environment in many marine and coastal areas.

Although tourism is generally less dangerous for the environment then the majority of other activities (industry, in particular) it does contribute, directly or indirectly, to the increased pollution of air, water and land, and burdens the infrastructure systems due to its seasonal character.

- Tourism also has considerable negative impacts on the cultural heritage and social relationships, resulting in the reluctance in many areas to accept tourism and, as a feed-back, less tourist's satisfaction and lower productivity of tourism industry.

Considering all impacts of tourism, the Mediterranean coastal states, in their role of Contracting Parties to the Barcelona Convention and participants in the Mediterranean Action Plan (MAP), entrusted the Priority Actions Programme (PAP) of MAP with the implementation of a priority action entitled "Development of Mediterranean Tourism Harmonized with the Environment".

The Action is being implemented since 1985 with a total 14 Mediterranean countries participating actively. It is based on four major goals:

1. Integrated planning of development and management of the Mediterranean basin;
2. Pollution monitoring and research programme for the Mediterranean basin;
3. Development of relevant legislation; and
4. Institutional and financial framework.

The action included a series of seminars and expert meetings organized on the basis of national reports and case studies of participating countries (1986-1989) with a result in the synthesis of national reports and case studies, as well as in the preparation of the "Guidelines for an Environmental Approach to the Planning and Management of Tourism in Mediterranean Coastal zones" and a proposal of the methodology of carrying capacity assessment (CCA) in tourism.

After that proposal had been presented and discussed at a workshop organized in 1990 by UNEP Industry and Environment Office and World Tourism Organization, the CCA studies for the Brijuni archipelago and the island of Vis in Croatia were prepared, and shortly after, a similar study for the central-eastern part of the island of Rhodes in Greece.

Figure 1: Position of Marsa Matrouh in the Mediterranean

- Those studies were made between 1990-1992 and were favorably received by the local and central authorities.

On the basis of the above-mentioned reports and other experience obtained through the work on the project "Development of Mediterranean Tourism Harmonized with the Environment", a team of experts has prepared the "Guidelines for Carrying Capacity Assessment for Tourism in Mediterranean Coastal Areas".

- After review, the Guidelines were discussed and amended in an expert meeting in Split in June 1995.

Simultaneously with the Guidelines two new studies of tourism CCA were prepared according to the Guidelines in order to test it in practice – for the Lalzi Bay in Albania and for the area of Fuka - Marsa Matrouh in Egypt. The work on the Lalzi Bay study was unfortunately stopped due to the turbulent political situation in Albania, but the one for Fuka-Matrouh coastal zone was continued and finished.

According to the methodology based on the "Guidelines for Carrying Capacity Assessment for Tourism in Mediterranean Coastal Areas", which is explained in the following chapters, the tourism CCA study for Fuka-Matrouh coastal zone has four basic objectives:

1. To offer a concept of a well balanced tourism development by identifying environmental and socio-economic issues and problems, and by assessing the

resources and their interactions in the study area so that, at the same time, the needs of the population in the area will be fulfilled;

2. To present and promote this concept to local and regional authorities, entrepreneurs, planners and local population;
3. To prove the applicability of the PAP methodology for carrying capacity assessment for this area, as a representative for less developed Mediterranean countries facing challenges of fast and sometimes uncontrolled development; and
4. To serve as a model to other areas in Egypt, as well as in some other Mediterranean countries, or even countries outside the Mediterranean, as a pilot document for carrying capacity assessment.

The optimum carrying capacity for tourism for the study area had to be used also as an input for the coastal area management plan that will control and guide future potential tourism development in the study area.

2. PROBLEMS CONCERNING TOURISM CARRYING CAPACITY OF THE FUKA-MATROUH COASTAL ZONE

2.1. The Concept of Carrying Capacity

The concept of tourism carrying capacity is based on a general statement that any form of development within the carrying capacity of ecosystem means a sustainable development. That fits in a general definition of **sustainable development** as:

- **a form of development which uses the natural ecosystems as resources of production and consumption growth leaving them unchanged for the future generation,**

or, more simply, defines it

- **a development within the carrying capacity of ecosystem.**

According to such general definition of carrying capacity and sustainable development, **sustainable development of tourism** can be defined as:

- **a form of tourism development which uses natural resources and cultural heritage to increase the number of visitors and the profit from tourist activities, but preserves them for the future generations,**

or as

- **a development of tourism within the carrying capacity of tourist resources.**

The desirable sustainable tourism development functions as a kind of compromise between generally intensive forms of tourism development promoted mainly by investors/entrepreneurs and generally restricted forms of tourism development promoted mainly by ecologists. Such a methodology has a starting point in a view that the assessment of limits for carrying capacity can rarely be measured precisely – it is almost always judged subjectively depending on which view is represented by subjects responsible for the assessment.

Therefore the Carrying Capacity Assessment for Tourism by PAP methodology is based on two elements, that makes a difference from previous methodologies:

a) a flexibility of physical-ecological-infrastructural, socio-demographic and political-economic parameters, which need to have equal treatment; and

b) a necessity for the analysis of different scenarios before final assessment of the Carrying Capacity.

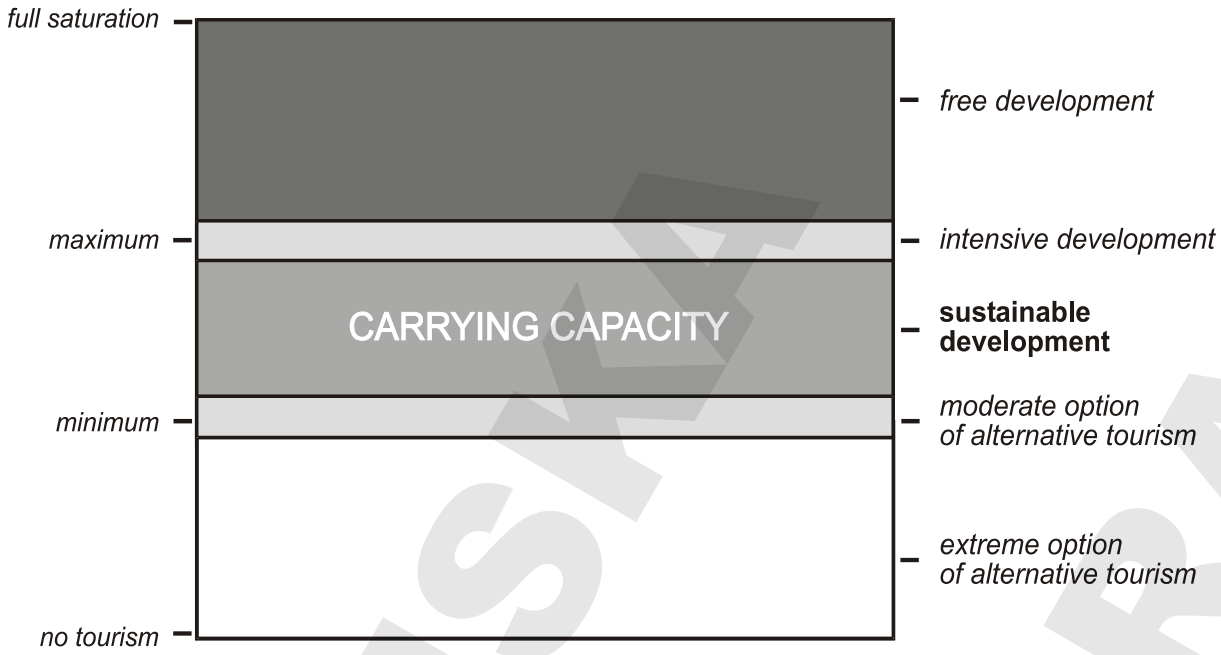

Diagram 1: Tourism Carrying Capacity Assessment According to PAP methodology

Such approach has been proved as the most useful in medium-size areas (regional level) and in medium and less developed areas in the Mediterranean, such as Fuka – Marsa Matrouh coastal zone. Although the PAP methodology is adapted to such areas, it can be also used in larger areas and in other coastal zones, but not in small areas (local level) and in non-coastal areas.

In spite of specific approach, such assessment of tourism carrying capacity follows the key procedure accepted by the World Tourism Organisation, represented in the WTO definition of tourism carrying capacity as **the maximum number of people that may visit the tourist destination without causing destruction of the physical, economic and socio-cultural environment and an unacceptable decrease in the quality of visitors' satisfaction.**

2.2. The Fuka-Matrouh Coastal Zone as the Subject of a Carrying Capacity Assessment

The issue of CCA together with that of "sustainable tourism growth" has been raised and discussed as a result of the fact that certain regions or areas (e.g. in the Mediterranean coastal regions) of intensive tourist visitation over the last 20 years have become less attractive; not only regarding environmental conditions (deterioration) but also due to the related fact of the reduction in the number of the "high budget tourists".

Such a development is due to excessive or intensive and ill-planned growth in the levels of urbanisation or development of these areas with the construction of numerous and densely built forms of accommodation (new apartments, hotels, private/secondary homes settlements, etc.) to cater for large numbers of tourists.

- In other words, we have types of construction development which did not consider various direct (e.g. on specific landscapes, fauna and flora) or indirect (e.g. increased wastes production/dispersal) circumstances.

Within the above context, the subject of CCA for the study area rises as a critical issue that should be considered, under current circumstances and development conditions, as a matter of priority. With regard to such circumstances and conditions, the area may be generally considered as being at an **"initial phase" of tourism development, particularly with regard to international tourism.**

However, the type of development observed over the last 3-4 years (tourist settlements catering mainly for the domestic market) in the study area, or in adjacent coastal zones (El-Alamein), raises questions as to whether and to what extent this type of development becomes, as the prototype of tourism development in the long run, counterproductive and/or conflicting to the area's tourist capability.

Although the subject of the CCA study pertains to a specific geographic area (the 70 km long and 10-15 km wide Fuka – Marsa Matrouh area) the incorporation and analysis of adjacent areas is considered necessary from an operational point of view, since these areas are organically/functionally related.

- An extended coastal zone from El-Alamein to the gulf of Agiba and the inland/continental part covering the Quattara depression and the Siwa oasis should be considered as the constituent parts defining a tourism region which pursues to offer an integral tourist product and image in the international tourism market.

Within this broader spatial context and drawing on the preceding conceptual analysis of carrying capacity issues, the subject under investigation should embrace ideally the analysis of three interrelated dimensions of the determinants of capacity.

The **physical dimension** involves determining and specifying capacity in terms of **physical limits to output**; i.e. limits on a defined output which is considered as the number of people/visits or visitor days per time period at a particular resource.

- From an **operational** standpoint physical capacity limits are determined and/or imposed within specific institutional and legal frameworks applied in relation to the characteristics/properties of environmental (natural or socio-cultural) attractions and to specific tourism activities (e.g. outdoor recreation, sightseeing, etc.)

The **economic dimension** focuses on determining the capacity output from an economic only point of view in cost terms; i.e. by investigating from the supplier's side, whether productive efficiency of tourist enterprises at each output level is maximised while unit costs are at their lowest possible level.

- In **operational** terms this dimension of capacity is difficult to assess due to the lack of information and/or since many of its determinants (technological and economic factors) are outside the control of the suppliers.

The **social dimension** pertains to delimiting the Socially Optimal Visitor Flows (SOVF), i.e. a measure of capacity that is assessed by considering both costs and benefits incurring to the host community (individuals and public institutions) from different or alternative levels of output.

The data or information inputs required for assessing capacity levels particularly with regard to dimensions (b) and (c) are very high. Due to the very limited data available, apart from the economic dimension, there are formidable difficulties regarding the

estimation of social costs and benefits of different/alternative tourist flows on different levels of output.

- A particularly useful information regarding this dimension, namely opinions/proposals of various social groups and experts, derived from specific surveys, is also lacking.

With an emphasis on the physical dimension[1] relevant to the subject of CCA, information inputs employed related to and elaborated in the following analysis of the methodological approach used, pertain to:

a) statistical data and cartographic material (both limited);

b) ICAM plan documents/reports (by specific terms or persons); and

c) information based on observations and discussions with the relevant authorities during visits to the area.

2.3. The Methodology Used in the Carrying Capacity Assessment

Having in mind the "Guidelines for Carrying Capacity Assessment for Tourism in Mediterranean Coastal Areas", the Tourism CCA study for Fuka-Matrouh coastal zone is based on the following starting elements:

- multifacied nature of tourism, which is always dependent of the given time and space;
- type, size and vulnerability of the tourist attractions;
- types and level of tourism development;
- relationships between macro and micro tourism policies; and
- the preferences of local population.

The contents of the study follow the methodology of the Guidelines, meaning four main phases of the work:

1. Documentation and mapping phase;
2. Analysis & synthesis phase;
3. Tourism development options; and
4. CCA formulation phase including the proposal of physical distribution of tourism development.

The Data Collection

The data collection included the review of all available documents and materials, as well as field work. The documents included various statistical materials, already finished and on-going documents regarding the area (LUPEM projects, ICAM documents), brochures, etc. The field work included several trips made by UNARC experts, including the Questionnaire of Local Population, and three missions by the PAP staff in July 1993, May 1996 and May 1997.

[1] Capacity defined in physical terms is a significant input for environmental conservation and also from the standpoint of developing and managing tourist attractions.

The Data Analysis and Synthesis

The Data analysis includes a review of all collected materials in four steps in a way that three main groups of parameters according to the Guidelines (physical-ecological-infrastructural, socio-demographic, and political-economical) are analysed. This is organised in four steps:

- **Step one:** A brief review of existing literature on carrying capacity assessment for tourism development.
- **Step two:** A study of the physical characteristics of the area including the geomorphology, the climate, the soil, the natural water resources, and the fauna and flora.
- **Step three:** A survey of the infrastructure provision in the area including water and power supply, sewage collection and treatment, solid waste disposal, and transportation.
- **Step four:** An investigation of educational and health services, human resources, as well as the economic activities undertaken in the area, and the reaction of local people to the tourism industry (through a field survey and interviews).

The data synthesis deals with the key problems deriving from the analysis, including four main groups of problems:

1. Issues of management and protection;
2. Tourism demand and development (choices relative to domestic, Arab and Western markets);
3. Possible alternative approaches to tourism development; and
4. Land-use planning policy and development implications.

Tourism Development Options/Scenarios

Data analysis and synthesis are leading to the crucial part of the carrying capacity assessment, which is the preparation of several possible tourism development scenarios, which have to be analysed in order to achieve the most realistic option as a basis of carrying capacity. Four possible scenarios can be defined as:

1. Tourism development without restrictions and control based on domestic large and small scale investments (continuation of existing trends);
2. The option of free transfer to commercial interests for overall development predominantly by foreign entrepreneurs;
3. Alternative tourism option (strict conservation, immediately); and
4. Sustainable tourism development option.

Although all four scenarios fit in the general scheme of CCA according to PAP methodology, they have some specific characteristics due to the existing situation in the area. Namely, the first scenario is more environmental unfriendly than the second one due to a rapid growth of the so-called tourist resorts (secondary residences resorts) which can definitely destroy the tourism resource basis in the whole region. At the same time, in spite of possible large foreign development projects such as in Turkey or Tunisia, the second scenario is less dangerous due to a pure economic need of larger free spaces and beach areas.

Furthermore, the third scenario is more of a theoretical one, because the actual political situation does not allows strict protection measures, although it should probably be the best solution from the ecological point of view. Therefore this option does not deserve a wider explanation.

CCA Formulation Phase Including the Proposal of Physical Distribution of Tourism Development

CCA formulation phase is based on the sustainable development scenario as a result of a compromise between the need for protection of tourist resources and reality in the area. In the case of the Fuka-Matrouh coastal zone it is evident that the achievement of the sustainable tourism development scenario depends primarily on political decision. That means that physical distribution of tourism development had to be adapted to the existing physical distribution of the so-called "tourist resorts", which have already occupied (or will in the near future) the most attractive parts of the coast.

Therefore the structure of tourism accommodation capacities, as well of tourism services and support activities, **is not the most desirable one, but the one which is realistic in the actual circumstances.** The same statement concerns **t**ourism development programme proposal in space and time.

2.4. The Carrying Capacity Assessment of the Fuka-Matrouh Coastal Zone as a Part of Integrated Coastal Area Management (ICAM)

Since the CCA for the Fuka-Matrouh coastal zone is being prepared simultaneously with the implementation of the Coastal Area Management Programme (CAMP), their results should be integrated in order to be able to respond to the requirements of sustainable development of the area. The inclusion of CCA in the process of integrated planning and management is a necessity without which there is no successful tourism nor economic development of the area.

3. DATA ANALYSIS

3.1. The Position of the Fuka-Matrouh Coastal Zone in the Matrouh Governorate and Egypt

The coastal area of Fuka-Matrouh is located in the north-western part of Egypt on the southern Mediterranean. It represents the most populated and economically most important part of the Matrouh Governorate. The Matrouh Governorate has an area of 212,112 sq. km (second largest in Egypt) and 193,000 inhabitants, or 0.9 inhabitants per sq. km in 1991. It represents 21.2 percent of the territory, and only 0.4 percent of the population of Egypt. The most of the territory is desert, with the population concentrated almost entirely on the coast, with only exception in the Siwa oasis.

The town of Marsa Matrouh represents more than a half of the population of the Governorate, and is the only important town on the 500 kilometres long stretch of the Mediterranean coast between Alexandria and the Libyan border. The town of Marsa Matrouh is located 290 kilometres from Alexandria and 540 kilometres from the Egyptian capital Cairo. Three other important towns of the Governorate are Saloum near the Libyan border (220 kilometres), El Alamein between Marsa Matrouh and Alexandria (180 kilometres), and Siwa in the Sahara desert (300 kilometres). Marsa Matrouh, Saloum, Siwa, as well as Sidi-Barrani El-Dabaa and El-Hammam are district centres.

The Matrouh Governorate and the North Western or Western Mediterranean Coast of Egypt are among the most important development regions in Egypt. This importance is derived from the important resources available in the region and relatively low population density, as well as the level of tourism development. These resources could provide great development potentials for the region to become one of the most productive regions of Egypt.

Due to a extremely high population density in the Delta and near the Nile river with nearly 400 inhabitants per sq. km, the Matrouh Governorate is becoming a region of very strong immigration from those areas, with the fastest growth rate in Egypt after the Sinai peninsula. In the Matrouh Governorate it is about 4 percent per year (in the North Sinai it is about 6 percent, in the South Sinai 8 percent, and in the whole Egypt 2.4 percent per year).

For such development, efforts to be productive and to avoid adverse impacts on the resources of the area, and on each other, long-term management and planning have to be conducted prior to any development. Otherwise, incremental development will take place and result in various negative impacts on the environment of the region, and consequently reduce significantly the possibility of achieving sustainable development of the region.

Figure 2: Position of the Matrouh Governorate on the Egyptian Mediterranean Coast and Key Tourist Attractions

This means that there is an urgent need for a clear, thorough and comprehensive study and cross examination of the available resources against the capabilities of the region. The outcome of such a work can then be used as a base for the development plans for the region.

The first step in that direction is the to provide a clear and well defined profile of the area. This profile will show the potentials as well as the constraints for achieving the ultimate goal of sustainable development. The following step is to determine the main issues that need careful consideration when proposing and assessing different development scenarios for the area.

3.2. Main Physical Characteristics of the Area and Environmental Considerations

3.2.1. Basic Physical Characteristics

The study area embraces 60 km of the Mediterranean coastline. The area covered extends from Ras El-Dabaa in the east to the Matrouh city in the west, with an average depth of 50 km. This narrow strip consists of two main zones, the coastal plain in the

north and the Libyan Plateau in the south which consists of a limestone elevation that becomes higher to the south.

The coastal plain includes coastal sand dunes, the salty depression of the Lake Maryiut, the inner sand dunes, the coast parallel limestone cliffs, the old coastal beaches between cliffs, and the swept plain. The coastal plain is followed by a transitory area, extending from Ras Alam El-Room to Ras El-Hekma.

The coastline of the area is sandy-rocky, with projection of rocks, fine sandy beaches, and shallow, clear blue water, perpetually washed by the Gibraltar current, directed from west to east.

A remarkable feature of the shoreline is the succession of bays, the first of which begins east of the Martouh city and extends to Alamain. Owing to the above features, the area is distinguished from other coastal areas. The coastal capes (Ras) are formed by rocky projections. The most remarkable of them is Ras El-Hekma with its elaborate location, overlooking the Hekma bay to the east and the Abu Hashfa bay to the west.

3.2.2. Geomorphology

Like most places in the north-western coast of Egypt, the study area is covered by sedimentary rocks which belong to the Quaternary and Tertiary periods. A geotraverse runs along the north-south direction crossing three distinct geomorphological units; the coastal plain, the piedmont-like plain, and the structural plateau.

The northern part of the area is occupied by a coastal plain which runs parallel to the sea. In most places, three different features can be identified: the foreshore plain, the frontal plain, and the sandy area.

- The first feature is marked by the occurrence of elongated ridges, running parallel to the present shoreline and alternating with lagoons, salt marshes and alluvial deposits in the depressions between them.
- The second feature, the frontal plain, is located south of the foreshore plain and is marked by the presence of scattered eroded limestone outcrops and alternating gypsum formations with some clay deposits.
- The third feature, the sandy area, consists of sand formations, e.g. sheets, dunes, or hummocks.

The transitional zone located between the coastal plain and the plateau contains a Piedmont-like plain. This plain could be subdivided into depositional and degradational phases marked by the development of alluvial fans. The latter consists of rocky lands with undulating barren soil surface. The structural plateau consists of the southern tableland and its escarpment. The tableland of the plateau is mainly barren with rocky soils in some areas, composed of unconsolidated deposits.

3.2.3. Climate

The study area has a semi-arid Mediterranean climate. The summer season, which extends from May until September, is characterised by clear sunny sky and no rain. The winter season, starting in October up until March, is mainly windy with certain periods of heavy rains.

Rainfall

The amount of rainfall in the study area is approximately 140 mm/year. Most of the rainfall occurs in winter with maximum in December (in Matrouh 38.7 mm) and January. The summer seasons are virtually dry (March to September 0 mm). Rainfall variability is high as it is in other arid climates.

Air Temperature

The summer and winter monthly averages of air temperatures do not reach extreme values. In Marsa Matrouh and El-Dabba (boundary location of the study area) minimum monthly averages of air temperature are reached in January (8.4 °C and 7.3 °C respectively); maximum in July (Matrouh 29.1 °C), or in August (El-Dabba 29.9 °C) (Figure 3).

Relative Humidity

Relative humidity averages between 60% and 75% all year round, in the climatological stations in the area (Dabaa, Ras El-Hekma and Matrouh city), and is thus always within the comfortable limits.

Wind

The prevailing wind is usually north-western, usually strong in the winter season, blowing at a speed of about 22 km/hour in January. In October, and over the fall season the wind speed decreases to about 15-17 km/hour (Figure 4).

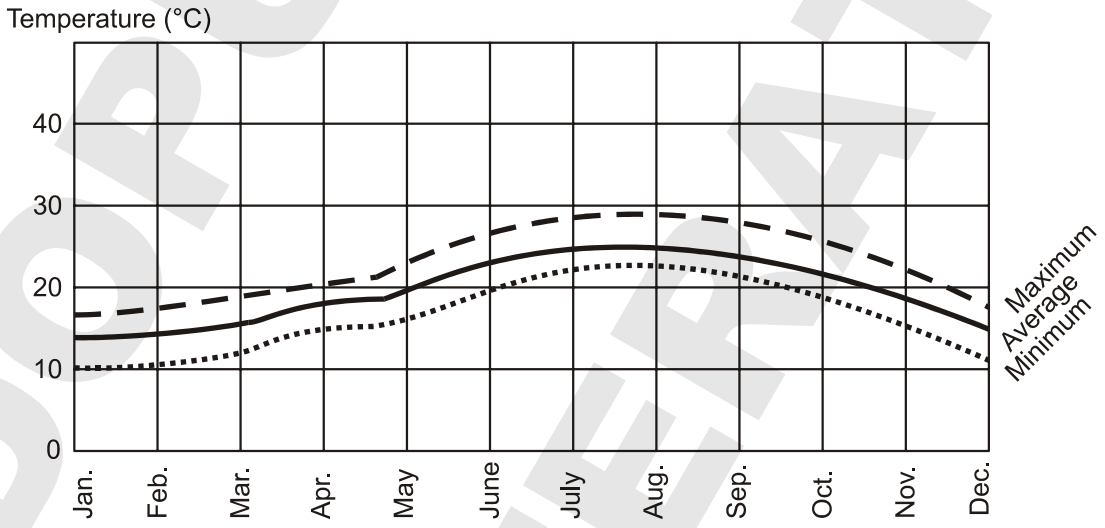

Figure 3: Average Temperatures in Marsa Matrouh

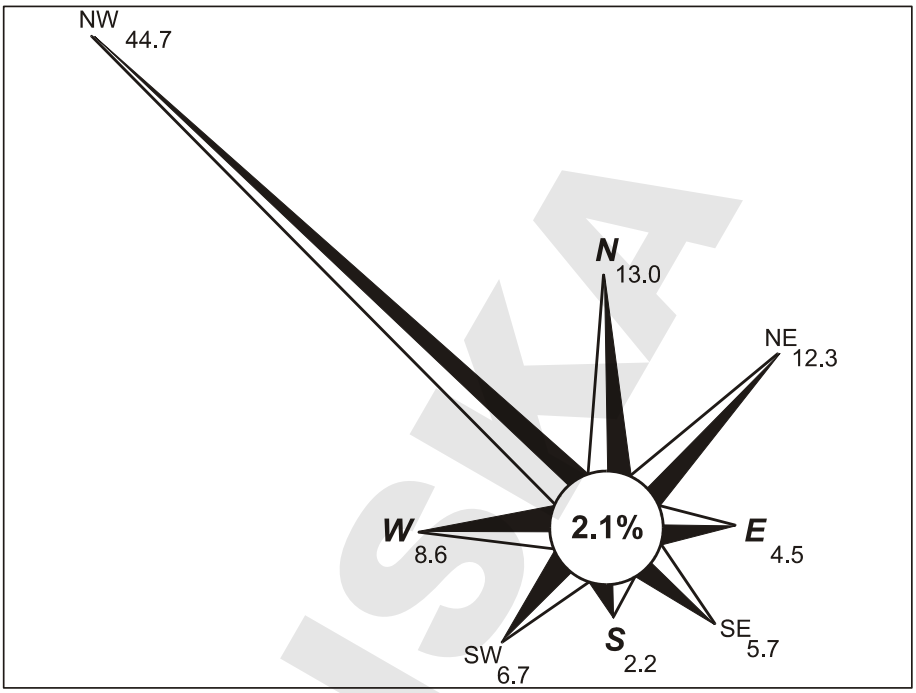

Figure 4: Wind Directions in Marsa Matrouh

3.2.4. Soil

The soil of the study area is essentially alluvial, so the beaches are composed mainly of well polished, round, white and loose carbonate sands. The loose carbonate sands, moving in the inland direction, gradually change to fairly consolidate limestone forming ridges that skirt the coast. The ridges are of marine origins in the form of bars and depressions that has a consequence in many lagoons. The depressions close to the shore are salty and therefore unsuitable for cultivation.

The coastal plain consists of sandy loam soils with some scattered loamy-sand. The salt was found to have considerable effect on tableland soils, which are mainly loamy and loamy-sand, underlain with alternating strata of limestone and shale. The profile of the soil is medium to shallow in depth. The soils of the wadies, which run through the tableland, consist of loamy deposits and are suitable for cultivation.

According to USDA American style, the soil of the study area was analysed and classified according to its type and potentials for reclamation. Generally, it was found that the type of the soil of the study area is of the third grade near the coast between Fuka and Garawla. Also, to the east of Garawla the soil is of the fourth grade in limited areas. As for the sixth grade soil, it was found in the area between Bagoush and Fuka.

3.2.5. Flora and Fauna

The study area is considered as one of the richest phytogeographical regions of Egypt with about 1,000 plant species representing some 50 percent of the total number of plant species in Egypt (Ayyad, 1995).

The fauna of the study area can be categorised into three main well-defined physiographic zones:

- the first are the coastal sand dunes;

- the second is the salt marsh depression; and
- the third is inland non-saline depressions.

It is argued that the coastal sand dunes ranging between the sea shore and the Maryuit salt marshes are characterised by more humid environment, more friable soils and dense vegetation, have a richer fauna.

3.3. Existing Infrastructure and Constraints upon Opportunities for Development with Special Accent on the Problem of Water Supply

3.3.1. Natural Water Resources

The rain water has two main features: the surface water flow (runoff) which has been estimated in the Fuka and Ras El Hekma region as much as 2.12 million m^3, and the underground water generated from the rain which has been estimated at 5.93 million m^3 annually, of which about 97,500 m^3 are already currently used per year. The amount of groundwater which could be utilised has been estimated at 2.5 million m^3, i.e. there are about 2,420.500 million m^3 of unutilised water annually.

The general feature of groundwater is that it occurs under both artesian and non-artesian conditions. However, all the groundwater is suitable for agricultural and domestic uses occurring in relatively shallow non-artesian aquifers and in small shallow semi-perched aquifers with slight artesian pressure. Relatively large quantities of groundwater are found at the depth in rocks ranging in age from Cretaceous to Miocene, but the quality of water is brackish to highly saline and is not usable.

The non-artesian aquifers can be found in the coastal plain in Miocene, Pliocene, Pleistocene and recent deposits cropping out at land surface and being recharged directly by rainfall and the infiltration of surface runoff. The non-artesian groundwater in the coastal plain can be found as a main watertable, coastal dunes watertable, and semi-perched watertable. Each one has its own characteristics.

The depth of the watertable varies from less than 1 meter to more than 50 meters, depending upon the relationship between topography and hydrology and upon the season of the year. In the internal plain behind the coastal dunes, the watertable is generally less than 5 meters below the surface. In the coastal dunes, the depth of the watertable generally ranges from 5 to 10 meters below the surface, depending upon the height of the dunes. The depth of the watertable in structural basins varies according to topography and the depth of the subsurface confining layers. Where locally perched watertables occur in wadies, the depth of water is generally less than 10 meters.

The quality of water in several aquifers in the region varies widely. It also varies with seasons, being the best immediately after the winter rains and the worst in the late autumn before the beginning of the rainy season. Water from the main watertable aquifer may contain as much as 20,000 PPM total dissolved solids or less than 1,000 PPM. In the alluvial sediments near the coast, the water quality is more uniform having commonly less than 3,000 PPM. In the coastal dunes, water often contains less than 1,000 PPM. Water from the structural basin is commonly good, but the locally perched aquifers in the wadies commonly contain water high in total dissolved solids (Eid, 1988).

Finally, it can be argued from the above information that the study area suffers from the lack of water resources to some extent. Such situation is thought to be not only a major problem with respect to sanitation and health, but also a constraint to the development plans for the region.

3.3.2. Water Supply

Generally, it was concluded that urban areas of the region depend upon two main sources of water needed for domestic uses, represented in:

1. The pressurised water system which is provided from Alexandria and which supplies urban centres along the region with water through extensions of pipeline from Alexandria. The treated water is pumped from the Alexandria distribution network into two pipelines running parallel through the Governorate to the city of Marsa Matrouh. One of them has a diameter of 700 mm and the other of 1,000 mm. Twelve pumping stations on the pipeline are used to pump water from Alexandria.
2. Desalinisation stations: there is only one desalinisation station in the study area located in Matrouh (Ayyad, 1995).

Meanwhile, the rural areas of the region depend on natural resources of water needed for various activities including domestic ones. The residents of the region used to restore rain water in Roman reservoirs. The region of Ras El Hekma and Fuka has about 47 Roman reservoirs, of which only about 37 can be used.

Based on the estimated population growth, the total population residing in the vicinity of the pipeline between El Alamein and Marsa Matrouh in 2010 is estimated at 64,000 persons in winter and 78,000 in summer. The total supply of water required is estimated at 8,000 m^3 per day in winter and 10,600 m^3 per day in summer.

The need was stressed for digging more deep wells to be used for agricultural activities and for applying the modern and water saving irrigation techniques.

3.3.3. Power Supply

Generally, the region was suffering from a shortage of the power supply and depended upon the local power plants for generating the needed power supply. The natural gas was used to operate the local power plants. It was reported that the local power plants were producing 60 MW, the cables were in a poor condition and caused frequent electricity cut-offs. In spite of 20 percent of the generated power supply utilised it was not sufficient to cope with the development requirements. In 1996, the whole system was connected to the interconnected network which will transmit power to Libya, generated at the Aswan Dam. High voltage power poles have been erected along the coastline. Power supply system services of the study area are provided by the national authorities.

It is thought that such an improved situation may accelerate the development of the region, in particular the industrial one. It was discussed that, in addition to the traditional power sources, there are some renewable power resources which can be economically and widely used to provide more of power supply, such as wind and solar energy.

3.3.4. Sewage Collection and Treatment

The so-called "tourist resorts" (secondary residences resorts) along the coastline do not have any sewage systems or treatment plants. Sewage is collected in septic tanks and it percolates through sand and likely reaches the beach. Septic tanks are used in Marsa Matrouh, too. However, the construction of a sewage collection and treatment system began in 1991 and is expected to be completed in 1998. The collection and treatment system will have a capacity of 50,000 population equivalent. Sewage and treatment services are provided by the city council. So far, the waste in towns is discharged directly into seeks and the population practices no sanitary sewage disposal except a few who have private separate units (El-Naggar et al, 1988).

3.3.5. Solid Waste Collection and Disposal

Garbage from houses used to be collected by the Matrouh City Council and until recently it has been offered to a private company to conduct this task. Although the collection in Matrouh seems to be satisfactory, there is an urgent need to control such activities through allocation of planned dumping areas in order to avoid the adverse impacts of haphazard disposal of solid waste associated with the enlargement of urban areas and increasing quantity of garbage.

3.3.6. Transportation and Communication

The general situation with road network is very good, since there is a coastal highway between Alexandria and Marsa Matrouh, which is continuing further on towards Saloum and Libya. This road extending for 470 km from Alexandria to Salloum, with 22 m width, is an important development factor especially since its widening into four-lane highway. This road also provides a transportation link from Matrouh to the Delta and Nile Valley via Alexandria. It is expected that with further development of the economic base of the Matrouh Governorate this road is becoming an axis for more intensive exchange with Libya and transit trips between North Africa and Egypt.

In addition, there is a single line railway of fourth degree, which is currently developed to be double line. This railway, which connects the Delta and Alexandria with Matrouh and El Salloum passing through the region, serves primarily for transportation of goods and water to far areas. It also carries passengers to Matrouh in summer.

There is an airport in Matrouh, which belongs to the military forces. The National Authority for Civil Aviation leases the landing rights for civilian use during the summer (from June to October). The airport is considered as an important link for rapid transportation to the rest of the country.

It was reported that there was a microwave network covering the whole Mediterranean coastal region from Alexandria to El-Salloum, with connecting stations at 50 km distance from each other.

3.4. Basic Demographic and Economic Data about the Fuka Governorate and the Fuka-Matrouh Coastal Zone

3.4.1. Population

According to the 1986 Census, the study area had 53,711 persons which represented 35.5% of the total population of the Matrouh Governorate, about 48% of them being female.

Concerning population increase, it was found that certain sections of the study area have experienced increases in their population size. During the period 1967-1986, areas such as Ras El Hekma and Sidi Henish have had population increases of about 75.8% and 128.6%, respectively. Other sections, meanwhile, have experienced a decrease in their population. For example, the population of Grawla has declined slightly, by 3.9%, while Fuka has experienced a population decline of about 28.7% over the same period. Such differences in population trends can be attributed mainly to the dynamic nature of the Bedouins, the main residents of the region, rather than to natural forces or in-migration from other areas.

Concerning the educational status of the population, it was found that about 14,891 persons were illiterates which represent as much as 41.8% of the total population of the region. The illiteracy rate varied widely among different sections of the region, for instance, it reached as much as 88.3 % in Grawla compared to just 37.6 % in the Matrouh city. The illiteracy rate was much higher among women - 52.3%, 88.5%, 88.6%, 96.1% and 97.6% in Matrouh, Sidi Henish, Ras El Hekma, Grawla and Fuka, respectively. It can be argued that such a high illiteracy rate among women is mainly a result of traditions and customs prevailing in the region (the Bedouin community) which consider there is no need for educating women.

The illiteracy rate is the lowest in the Matrouh city (37.3%), because Matrouh is the capital of Governorate and most of educational services would normally be concentrated there. Also, the nature of urban population differs from Bedouin people in the surrounding rural area. Moreover, it was suggested that about 16.5% of the total population in the area can only read and write. This means that about 85.3% of the population in the region have no or limited educational level.

Concerning the age structure of the population, it was found that about 46.6% were 15 years old or less, 49.4% were 15-60 years old and 4% were 60 years old or more. It means that the population of the study area is young, i.e. the young people form the majority of the region population.

About 80% of the population is concentrated in the Matrouh city and the remaining 20% of the population is dispersed along the other parts of the region. Such concentrated population reflects centrally distributed services.

3.4.2. Educational and Health Services

It was reported by the Matrouh Governorate that the total number of schools in the Matrouh Governorate reached 233 in 1993. Most of them are primary schools (174), with 1270 class rooms and 1858 teachers.

Table 1: Number of Students and Schools in the Matrouh Governorate During 1993

Stage	Primary	Preparatory	Secondary		Total
Item			Gen.	Art.	
No. of students	23,551	9,050	1,778	1,649	36,028
No. of schools	174	43	11	5	233
No. of class rooms	854	280	58	78	1,270
No. of teachers	1,113	457	1,760	162	1,858

Source: Information and Decision Support Centre, Matrouh Governorate

The health services existing in the project area and its surroundings are represented in a general hospital and two specialised hospitals in the Matrouh city. Additionally, there are 4 clinics, 7 village centres for health care and a family planning Centre. In the Dabaa area, there are one central hospital, three village centres, and a family planning Centre, while in Negela there is only one village Centre.

3.4.3. Economic Activities

It was estimated that about 80% of the Bedouins were involved in sheep and goat herding and the cultivation of barely, vegetable and trees. Additionally, about 15% depend on commerce as a source of income, while the remaining 5% work in different jobs for the government and the private sector.

Animal husbandry is traditionally the major, and most common economic activity of the Bedouins in the region. It was estimated that about 30-80% of the gross income of the population in the Matrouh Governorate is earned through this economic activity.

Generally, the agricultural activities in the study area are scattered and depend upon rainfall. Also, they are considered as self sufficiency economic activities. It was estimated that the total cultivated area in Matrouh and El Dabaa including the study area is 110,834 Feddan in 1993. (Information and Decision Support Centre, Matrouh Governorate, Undated).

One of the most important crops that are used to be cultivated in the study area are fruit trees that are mainly represented in olive. Olive cultivation is not considered an economically attractive activity, because olive trees are often planted in marginal areas, where no other crops can be grown. They recover easily from drought and have a long productive life span of more than 50 years. However, by applying the available cultural techniques properly and by carefully selecting the site and the plant material, olive trees can produce a good crop and are no less profitable than any other fruit tree. It was estimated that the total olive production in the north-western coastal zone in 1984 was 6,000 tons. Barley is another main crop which is used to be cultivated in the study area.

Fishing is a minor activity in the region. The Bedouins have a distinct preference for meat over fish, and the local population is not marine-minded. Besides, landing and ship-servicing facilities are still very limited, and not expected to contribute to the region's development in the near future. However, there is an urgent need to a comprehensive survey that should be made in order to define the capability of the fisheries in the region, as well as the sustainable yield.

Generally, it can be concluded that the study area can be divided according to the activities which occur within it, into three main regions as follows:

a) The coastal cultivation strip which extends from the shoreline 5 to 10 km inland, including the beach and the coastal plain. Cultivation of orchards and vegetables

predominates especially in deltas of wadies in which the inhabitants are settled. It represents about 5% of the total land;

b) Inland mixed production, grazing/cropping strip which is located south of the coastal strip, between 5-15 km from the coast and where the soil is poorer. Grazing (especially sheep and goats) and cropping are the main activities. It constitutes 22% of the total land; and

c) Inland grazing (rangeland) strip which lies between 15 and 50 km from the seashore. Grazing predominates, with some cropping. It constitutes 73% of the total land.

The study area is characterised by relative absence or a shortage in the industrial activities. In 1980/81, it was estimated that the total value of industrial production in the Matrouh Governorate is as much as 0.7% of the total industrial production in Egypt. This can be taken as an indication to the lack of industrial activities in the Governorate as a whole. The industrial activities prevailing in the study area are represented in small business and handicraft that are related to the tourism activities.

Tertiary economic activities are mainly represented in the tourism sector. Generally, the tourism activity prevailing in the study area and the Matrouh Governorate is seasonal tourism which relies on the beach attractions in the summer period.

3.5. Main Tourism Development Patterns of the Fuka-Matrouh Coastal Zone with Respect to Tourism Carrying Capacity Assessment

3.5.1. The Natural Attractions

The natural potentials for tourism development in the study area lie in its shoreline configuration and its moderate weather. The shoreline is characterised with successive bays and heads composed of "rocks" (the major of these is Ras El-Hekma). There are many beaches of fine white sand, the water is very clear and has a lovely turquoise colour. The water is not that deep, with a gradual slope which allows for safe bathing.

The weather is moderate reaching its highest temperature of 28.5 °C during August and its lowest 10.2 °C during December and January. Although the average rainfall in the area is one of the highest in Egypt, it reaches only 147,1 mm/year, with the greatest rainfall during January and practically no rain in the summer period.

The study area is one of the most attractive on the Egyptian Mediterranean coast. It is accessible through secondary roads from the high way, but still inaccessible for a great part offering a unique opportunity for isolation. Some parts of the study area could be announced as protectorates for their outstanding beauty and/or unique features (Head of Ras El-Hekma, Hamam El-Amiratt).

In Marsa Matrouh itself, the natural bay and the long white beach make it good for sunbathing and swimming in calm transparent waters. Good bathing spots nearby include the outstanding beach at Al Obayed and Ageebah, as well as Cleopatra's Bath, a rock-hewn whirlpool bath offshore which was supposed to be used by Anthony and Cleopatra.

3.5.2. The Cultural attractions

The area is enriched with historic sites and monuments that could attract tourists. Close to Marsa Matrouh there is a Rommel's Hideout, a cave where the general planned his military campaigns and which has now been turned into a military museum as the only cultural monument in the area equipped for tourist visits. Other potentially interesting cultural monuments include a ruined temple fort built by Ramsis II, an early Coptic chapel, a shipwreck of the old Egyptian fleet and some remnants from the Roman period, but they are not equipped for tourist visits.

Some Bedouin villages, such as Fuka are potentially attractive excursion points from the socio-cultural point of view, if some tourist facilities could be organised there (souvenir shops, restaurants, etc.).

About 180 km towards west from Marsa Matrouh around El Alamein there are the cemeteries of the World War II soldiers. This attraction is already well visited every year by tourists, relatives and friends. About 300 kilometres towards Southwest is the Siwa oasis with remarkable antique monuments (the crowning hall of Alexander the Great, pharaonic tombs) located in a unique desert oasis environment. The Basic Characteristics of Tourist Supply

In the whole Egypt accommodation capacity in hotels has almost tripled in ten years (1985-1995) from 24,000 to 70,000 rooms. After Cairo, Alexandria is the second in hotels and rooms capacity. However, the relevant information on actual capacity covering the entire accommodation sector (apart from hotels, cruise ships and mainly tourist villages) is scarce and sketchy as it has been noted elsewhere[2].

The bulk of the new accommodation development is geared recently towards sun and beach resort holidays, taking place mainly in the Red Sea and the south of the Sinai/Gulf of Aqaba regions. The state's steady withdrawal from hotel management and recent hotel privatisation policies together with investment encouragement seem to have contributed to the accommodation capacity increase.

The overall picture of the existing Egyptian Tourist Product can be delineated on the basis of its spatial structure and its main product line (tourist attractions) features and differentiated into two broad categories:

- The Nile valley corridor with tourist activities pertaining mainly to visits/touring traditional historic sites and antiquities, as well as contemporary urban attractions; and
- Three coastal regions:
  - The **Red Sea** (Hurghada, Safaga, Al Qossier);
  - The **Gulf of Aqaba** (from Taba to Sharm El Shiekh); and
  - The **W. Mediterranean** coastal region (from Alexandria to the Libyan border) encompassing the **study area of Fuka-Matrouh** with main attractions, the sea/coastal resources - beach and sun holidays.

[2] Economist Intelligence Unit, International Tourism Reports, No 2, 1996.

It was estimated, by the TDA, that the Matrouh Governorate had, by 1993, 72 hotels with a total number of 3140 rooms, and 15 tourist resorts, as well as 29 youth hostels with a total number of 1317 rooms.

Unfortunately, it was not possible to collect the data about the number of tourists/beds in so-called tourist resorts (secondary residence resorts), because they are closed for non users. Considering their extremely huge scale it can be estimated that the number of beds in those resorts is minimum 30,000, if not more than 40,000[3]. If most of the already licensed resorts are to be built, the total number of beds in those resorts will surely reach more than 100,000, if not even more (according to unofficial information there are about 40 new planned resorts), what can seriously endanger the future commercial tourist development and, therefore, the resource basis of local economy.

Figure 5: Tourist Resources

[3] The average number of beds in all so-called tourist resorts is estimated at minimum 2,000 beds, although this number varies a lot by each resort depending on their demand – in better establishments it is probably lower due to a more dispersed structure, and in those built for lower class the demand is probably greater.

3.5.3. The Basic Characteristics of Tourist Demand

With regard to the overall evolution of demand in Egypt, one observes the **doubling** of visitor arrivals between 1985 (1,520,000) and 1995 (3,130,000). Worth observing are the years of decline (1991, 1993) due to political situation and the Middle East outbreaks of violence in wider region or at home.

The **Western** Europe dominates the market and OECD countries cover **more than a half** (53%), while the **Arab** countries account for **one third** (32%) of the tourist arrivals in 1995. Most markets are still attracted to places **along the Nile** corridor visiting main cities (predominantly Cairo including El Giza and the pyramids), other historic sites and cultural attractions, or cruising in the Nile.

However, **new segments** of the market (mainly the European) of the "Sun and Beach charter" type are attracted and travel directly to the resorts of the Red Sea and the Gulf of Aqaba coast. This relates to both the state's and industry's efforts to develop new products in these areas and to diversify the Egyptian Tourist Product.

Seasonality problems do not seem to be intensive due to the differences by market segments. E.g. Europeans favour Egypt mainly during the winter while large parts of the Arab market tend to visit Egypt (Cairo and the coastal areas) during the summer.

The study area of Marsa Matrouh – Fuka is still relatively unimportant in comparison with other parts of Egypt, and is characterised by the absolute domination of domestic tourists and Arabs. In 1992, the total number of tourists of the study area was 116,338, of which 79.7% were Egyptian, 16.2% Arab and 4.1% foreign tourists (Table 2).

Table 2: Number of Hotels and Tourists in the Matrouh Governorate During 1992

Item	Tourists			Total
	Egyptian	Arab	Foreign	
Number	92,727	18,839	4,772	116,338

Source: Information and Decision Support Centre, Matrouh Governorate

3.5.4. Advantages and Disadvantages of Tourism Supply and Demand

The tourism development patterns of the Fuka-Matrouh coastal zone show many advantages, but also many disadvantages regarding the possible tourism development. Especially dangerous disadvantage, which is generally not treated enough seriously, is the actual building of so-called tourist resorts in the area, which can have multiplying negative effects on all attractions.

The most important advantages are:

1. The possible use of existing natural features in the area, especially shoreline configuration, topography and good weather.
2. Excellent traffic infrastructure, especially the existence of the Alexandria-Matrouh highway and an airport in Marsa Matrouh.
3. Relatively good general services due to urban development along the seashore, especially in the vicinity of the Marsa Matrouh town.

4. The hospitality of local people and their acceptance of tourist projects in the area disregarding from where the potential tourists will come.
5. Special characteristics of the area, which is different from most of other areas in the Mediterranean (combination of a beautiful seashore + good weather + Sahara nearby + possibilities of visiting various attractions like the Siwa oasis, El Alamein, etc.).

The most important disadvantages are:

1. Lack of infrastructure base in the region for the greater scale tourist projects.
2. Lack of tourism facilities and appropriate services needed in the tourist activities (high quality hotels and restaurants, tourist information services, rent-a-car, etc.).
3. Non-tourist image of the area, especially on the Matrouh-Alexandria motorway (strong military presence, a lot of control check points).
4. Scarcity of human resources that could help in constructing and establishing of tourist projects and to work in tourism in general (lack of tourist tradition).
5. Seasonality of tourism to be developed in the area.
6. The fact that a large part of the coast is occupied with secondary residence villages called "tourist villages", and more and more are already being built.

The last problem seems to be the most significant threatening to endanger the future tourism development of the entire coast, since the size of those establishments is extremely big. Also, the problem is that most of those "tourist villages" are closed for other people, they include the associated coastline closing free access to the beaches and are in most cases crowded, environmental unfriendly and done with dubious solutions regarding architecture. If such construction will continue, the potentials of the area for high standard national and international tourism will be seriously diminished, as well as the possible important source of income for the local people and newcomers.

3.6. Socio-cultural Problems with Special Accent on the Relation Between Tourists and Local Community

Demographic patterns prevailing in the region mean great challenges for the region regarding possible tourism development for two main reasons:

1. A high percentage of illiteracy and a limited educational level, in addition to the strong influence of the customs, means great efforts in education and problems in socio-cultural adaptation to international tourism; and
2. A high percentage of young population which will in a few years reach the working age need a lot of jobs to be created.

Therefore, a great emphasis should be put on improving the quality of life and the productivity of the population, especially in the sections where illiteracy among those who will join the laborforce in a few years time is considerably high.

Nevertheless, a field survey undertaken in the study area intended to get the first hand information on the responses of the residents to possible tourism development in the area has shown very positive reactions to such a development.

The Field Survey

The questionnaire covered all the six main tribes resident in the area, with a total of 101 cases, two of which were females. The age structure of the cases interviewed ranged between 19 and 79 years, with a mean age of 47 years. About 89% of the sample were married, while no cases of divorced or widowed people were found, meaning that the remaining 11% of cases were single. Concerning the prevailing family sizes, it was found, as it would be expected in such areas, that the majority of cases (75%) had families of 6 persons or more. The remaining 25% had families ranging between 2 and 5 members.

The educational structure prevailing among the cases interviewed were found to consist mainly of those who can read and write, and those who obtained primary and secondary education certificates, representing 38%, 23%, and 23% of the cases, respectively. Concerning the illiterate and those who were university graduates, they were found to be minorities, accounting for 8% and 9% of the total cases.

Concerning the employment status of those interviewed, the majority were found to be employed in agricultural and trade activities, representing 39% and 33% of the cases. As for those involved in cheap herding and industries, they were found to be no more than 3% and 1% of the cases. This reflects the great importance of agricultural and trade activities for the residents of the area.

Concerning the locations of the land owned by those interviewed, it was found to be distributed north, south and around the highway, representing 50%, 27% and 23%, respectively.

This diversity of the cases interviewed is intended to get the views of older as well as younger generations, with different educational and employment conditions, towards potential tourist development in the area.

Responses to Possible Tourism Development of the Area

About 75% of the sample accepted the possibilities of working in the tourist activities, while the remaining 25% of the cases rejected this idea. Those rejecting the idea were found to be mainly over 50 years of age. The jobs they were willing to participate in include drivers, local guides, guards, sailors, and services, accounting for 57, 46, 34, 54 and 13%, respectively.

The most attractive tourist activities for the locals were found to be aqueous, trips and hunting, representing 52, 74 and 70% of the cases. As for trading with tourists, the main goods they were willing to trade were food, cheep, and carpets accounting for 88, 86, 24%, respectively. Concerning working in the tourist establishments, only 7% rejected the idea, while 93% accepted it. The majority of those accepting the idea had no particular preference for the type of work to be involved in. As for the establishment of tourist premises within the local areas of those interviewed, only 13% rejected the idea.

Considering such results in comparison with actual policy of Egypt regarding colonisation of the area from the overpopulated areas in the Delta, it can be concluded that there are no constraints for tourism development. Furthermore, such a development can be described as desirable regarding the constant problem of unemployment in the area and the need for jobs for a predominantly young population.

3.7. Political Economy of Egypt and its Effects on the Study Area

In the following political economy overview of Egypt we selectively examine certain interlinked parameters which are thought to relate and effect significantly the study area's tourism development. These parameters pertain to the country's tourism development situation and the relevant state policies, as well as to the wider development profile focusing on the socio-economic policies and mainly the legislative framework.

3.7.1. The Tourism Policy Profile: the Political/Governmental Decision-making Framework Pertaining to Tourism Planning and Policy Issues

The importance of tourism to the country's national economy has long been recognised by the Egyptian Government which has undertaken various policies for its promotion. The most recent example (1997) is the dominant place tourism assumes within a Long-Term (to year 2017) Economic Development Plan set out in 1997. The promotion of tourism is among the main targets of the Plan, which envisages 27 million tourists and 237 million nights annually by the year 2017. The regional distribution of this future demand and the share of the study area is not envisaged in this **ambitious** or optimistic long - term target.

Regarding tourism's present **economic contribution**, one should mention that the sector is the biggest generator of foreign exchange **after** overseas remittances by Egyptians, the Suez canal tolls, as well as the oil exports. However, one should also note, with regard to the international tourism receipts, the declining yields during the first half of the 1990 decade (receipts per arrival: 1991: $916, and 1995: $575) attributed partly at least to the undercutting of prices by hotels and tour operators for encouraging tourists' inflows.

Apart from the above problem (tourist market downgrading), as well as certain "external" negatively impacting factors (political developments in the wider region, terrorism), one should note the **lack** of good **quality** accommodation and mainly the **lack** of auxiliary/supplementary **services.** Another problems are facilities in the accommodation sector, as well as the limited control in the development of certain accommodation types (holiday villages or tourist settlements).

The privatisation of the tourism industry (mainly the hotel sector) seems to be one of the main features of the government's development strategy, as can be observed from the growing number of state-owned firms being put on the market. However, the prospects of this strategy's success are difficult to assess, since the dominance of the public sector covers many branches (e.g. banking, telecommunications, etc.) apart from tourism. It seems to be a matter of political and administrative efficiency and will depend on:

a) The extent to which "politically sensitive" economic reforms will be hampered by splits within the ruling political-institutional elite or by public reaction towards particular regulations of foreign policy issues (adoption of accommodation measures with neighbouring countries); and

b) The success of trade liberalisation measures or of specific policy measures undertaken in the areas of marketing (sufficient promotional funding, multimedia campaigns in collaboration with the private sector) and promotion of investments (public and private) – e.g. Law 230/1989, enhancing capital inflows offering

attractive investment incentives (e.g. profit repatriation, investment funds re-exportation, tax exemptions, etc.).

Among the various characteristics and constraints of the overall Egyptian Tourism Policy are the scale of tourism development (i.e. large) and the "enclave" (i.e. not integrated) mode of development dominated by foreign demand and commercial tourism. That is against the concentration of restricted domestic tourism to particular zones with tourism development managed by various state institutions and characterised by a limited control and a low quality of accommodation. Such a development has already occupied the most part of the coastal area from Alexandria to El Alamein and is, therefore, threatening to endanger the coastal strip more far to the west, including the study area from Marsa Matrouh to Fuka.

3.7.2. The wider Development Policy Profile of Socio-economic Policies

With regard to the overall economic policy and specifically the economic reforms introduced at the beginning of the 1990's and implemented so far, the following points can be made:

- Diachronically, one may observe a continuous decline in consumer price inflation, liberalised interest and exchange rates, which together with other fiscal and monetary policy measures contributed to lowering the budget deficit from 24.7% of the country's GDP (period 1987/88), to 2.6% (fiscal year 1994/95).
- In the tourism sector **per se**, the above changes are considered beneficial in conjunction with the privatisation policies introduced by the government; also, the outlook for tourism seems good with regard to the economic policy environment.
- More specifically, among the reforms instituted by the government, mainly for maintaining international investor confidence in the economy, the privatisation programme seems to be the key one. The programme covers a wide range of public-sector companies, from utility agencies (e.g. telecommunications) to construction and the provision of public infrastructure works (opening infrastructure to private investments).

In conjunction to the above and in order to support the economic reforms and privatisation in the state monopoly sectors (banking, insurance, telecommunications, etc.), certain legislative reforms are planned by the government for upgrading mainly business legislation.

Within the wider economic environment of international relations, the development of foreign trade is a factor which could benefit tourism. Here, one should briefly mention Egypt's partnership agreement (1997) with the EU in the frame of plans to create a Euro-Med free trade zone by the year 2010, as well as the prospect of creating an Arab free-trade zone (Egypt with 17 Arab States) to cut the tariffs on inter-Arab trade.

4. DATA SYNTHESIS

4.1. Issues of Management and Protection

With regard to environmental protection and spatial planning (urban development, land-uses regulation, etc.) we are selectively outlining certain legislative issues which are thought to relate mostly to the development of tourism and to the CCA of the Fuka-Matrouh area. After a brief reference to international Conventions on Environment and Egypt's deriving obligations, we outline those issues from the country's National Legislation thought to pertain to the study area.

International Context

International Conventions sanctioned by and/or enforceable in Egypt, concerning environmental protection, generally, or in the Mediterranean *per se*.

The obligations relating to the Fuka-Matrouh area development process and sanctioned by or enforceable in Egypt pertain to issues envisaged and agreed in both general and special (Mediterranean) International Conventions. Selectively, we outline certain issues which have the greatest relationship with, or bearing on promoting an environmental friendly and sustainable tourism development:

- Measures and procedures (legislative, technical, administrative) for the conservation of fauna and flora species ensuring also the best methods for their use and development;
- Measures for the prevention of sea water pollution and the protection of the Mediterranean sea and coastal resources (e.g. bathing facilities) from various activities related to land-based sources (discharges from rivers or coastal establishments) or from the sea (damping from ships); and
- Measures for establishing and managing – under the supervision of a Public Authority – integral nature reserves or national parks, forbidding/prohibiting hunting of animals and fishing or any forms of forest exploitation, farming, mining and construction in those areas.

National Context

National Laws and Decrees Pertaining to Spatial Planning and Environment Protection

On the basis of pertinent information[4] we are outlining below certain laws and decrees (issued at various administrative levels: president's, premier's, ministerial, governor's) covering two main areas:

[4] Mohamed Abdel Aziz El Guindi, Mona Salah El Din Zulficar: A legal Study of Environmental Legislation Relating to the Fuka-Matrouh Area Project.

a) In the area of **spatial/urban planning and land-use regulation** or utilisation, the most relevant and important laws are:

- The Law No. 143/1981 (and decree No. 203/1982) pertains to the definition, organisation and utilisation of desert lands defining conditions, procedures for their administration and development. The Matrouh Governorate is considered a desert Governorate;
- The Law No. 3/1982 (and Decree No. 600/1982) pertains to urban planning, providing the regulatory frame for local authorities, assigning the areas of their competence, setting up guidelines, rules and conditions for land utilisation, buildings/construction regulations and special conditions concerning historic or tourist areas. Two more laws, No. 106/1978 amended by Law No. 30/1983 are also relevant, concerning regulation of building activities; and
- The Law No. 7/1991, partly related to the Law No. 143/1981 above, sets up and stimulates the competence and duties of particular authorities regarding state and land utilisation and management. For example, it stipulates that the General Authority of Tourism Development undertakes the management, exploitation and disposal of lands allocated for tourism development.

b) In the area of **environmental protection**, we may distinguish certain laws and decrees as follows:

- The Law No. 4/1994 is considered the most integral law for the environment for protecting the marine environment, coastal areas and regional waters. In its provisions (certain of which conform to provisions of International Conventions and related agreements/protocols) the law includes the organisational structure of the Environmental Affairs Agency and its specific competencies, as for example: a. establishing branches in Governorates, b. establishing/operating environmental monitoring networks all over the country, and c. drawing regulations (specifications, standards) for carrying out studies on Environmental Impact Assessment (EIA) or for the construction of any establishment in coastal areas (commercial, industrial, tourist, etc.); and
- The Law No. 102/1983 pertains to the natural environment and specifically to the establishment and management of "Natural Reserves". Its provisions and specifications apply to all natural reserves established by specific decrees, e.g. that of the **Al Omayed Reserve** in the Matrouh Governorate.

Concluding the above brief survey of the existing legislation, we should note the difficulty of evaluating its **efficacy** either at the national or regional scale (the Matrouh Governorate). Therefore, an evaluation of the legislation's efficacy is necessary, which is interrelated to political/administrative structural, organisational/functional parameters/factors. In other words, it strongly depends on the planning and the administrative/managerial ability and efficiency (organisation of services, inter-level and inter-sectoral co-ordination, public-private co-operation, sufficient flows and distribution of financial resources) of those authorities (central or regional) responsible for or charged with the legislation application. Also, a set of parameters constitute an important component for defining and applying specific CCA specifications and guidelines in the area.

However, on the basis of our analysis so far, we may assume that the existing legislative instruments are quite sufficient to support a sustainable tourism development provided they are properly utilised by the relevant authorities, central or regional (the Matrouh Governorate) in conjunction with the relevant planning actions, and provided the adopted ICAM and the related CCA constitute main ingredients of a tourism development plan.

4.2. Tourism Demand and Development – Choices Relative to Domestic, Arab and Western Markets

4.2.1. Main Characteristics of Existing Tourism Demand and Development

With regard to the overall demand figures according to the official statistics one should note that at the beginning of the 1990's the annual tourist arrivals (A) and nights spent (N) have fluctuated considerably:

1990:	148,243 (A)	173,307 (N)	Aver. Stay: 1.17 N per A
1991:	220,665 (A)	338,818 (N)	Aver. Stay: 1.54 N per A
1992:	116,357 (A)	205,916 (N)	Aver. Stay: 1.77 N per A

With regard to the overall market segmentation in the 1990's it should be noticed **first** that it does not seem to change a lot, and **second**, that the domestic market (weekend summer tourism) dominates.

As to the overall distribution of demand, the share of the three main markets ranges percentagewise, as follows:

- Egyptian/domestic market: 75-80%
- Arab market: 14-22%
- International/Western market: 2.5-5%

Considering the existing broad market segmentation and on the basis of the analysis undertaken so far in Section 3.5 concerning Egypt as a whole, one should note that the study area **differs considerably** vis-à-vis other regions of the country with regard to the market segments it attracts. International/western tourism demand is **very limited** in the study area as against other areas of the country, which attract considerable foreign/western market segments either of the "traditional" type (visiting historic/cultural attractions) or of the "sun and beach charter" type, visiting the relatively recently developed coastal resorts in the Red Sea and the Gulf of Aqaba.

According to various reports and the preceding analysis (accommodation capacity) the bulk of present tourism development is concentrated in the Marsa Matrouh urban area, while a limited part is located at the Siwa oasis and at certain isolated spots. Also, the bulk of present tourism demand (some 90%) concerns summer holidays related to the main domestic market and coastal areas.

4.2.2. Choices Regarding Demand Differentiation

The choices regarding the future demand differentiation or market segmentation, as well as the weight or emphasis each market segment should be given are issues that require particular information inputs mainly with regard to specific socio-cultural parameters.

Specifically, such information would derive from special surveys and analyses of attitudes/opinions/preferences towards tourism – the particular market segments and types of development – covering three main groups: a. residential population, b. tourism business representatives, and c. administrative officials responsible for tourism. Such a survey could extend to cover also tourists in order to understand their preferences and needs and how or to what extent they differentiate.

The resulting information would have been an important input contributing not only to tourism demand or market specification, but also to identifying and establishing:

- Those factors in the community impacted by tourism negatively (cost of land, housing, price of goods and services, etc.) or positively (job opportunities, preservation of cultural and natural attractions etc.);
- The particular socio-cultural problems (relationships between local community and visitors); and
- The guidelines for attaining sustainable tourism development and CCA (social capacity of a destination to absorb tourism).

Following the above observation we are suggesting a very broad segmentation into three main categories according to visitors' ethnic background/nationality and place of origin. One should notice, however, the significance of a detailed segmentation and visitor classification in different groups according to specific variables, such as motivation, consumption preferences, activities pursued, etc., which could provide significant inputs for the design and implementation of an appropriate **marketing strategy**.

Thus, the suggested choice regarding the future tourism market mix is based on the main conclusions and observations deriving from the analysis so far, as well as on certain criteria and variables relevant to the areas of tourism development. Our choice should, therefore, be an intermediate scenario between two alternative scenarios of future tourism demand differentiation, which will be explained in the following chapters:

- A scenario where foreign (mainly western) markets dominate and following, more or less, the type of development taking place in the Red Sea and the Gulf of Aqaba regions (see also option 5.2); and
- A scenario where domestic (mainly) and Arab markets prevail, following the existing development pattern or the continuation of trends (see also option 5.1).

In the suggested choice there is a balanced growth of the three main market segments and avoidance of a complete domination of one over the other. Without specifying precisely each market share, we are suggesting a considerable increase, in the long term, of the International/western markets share (to range between 30 and 35% of the total market) and the Arab market slightly increasing (to 20-25%), both to the debit of the domestic market.

In support of such a choice we are outlining below certain **criteria** related to particular tourism development **variables**:

a) The seasonality variable

- The proposed market synthesis may contribute to the best possible annual distribution of demand in a way that peak season pressures are minimised or

the surpassing of capacity levels is avoided. This is because western/European markets' preferences favour Egypt during the winter/spring, Arab markets mainly during the summer and domestic in summer, but also in other periods.

b) The regional/spatial distribution variable

- The suggested diversification of the tourist market may contribute to a wider geographical coverage, i.e. visitor flows could be more widely spread over the entire region, instead of concentrating only on coastal areas and near the motorway, thus, contributing to a better distribution of benefits derived from tourism.

c) The Tourist Product diversification and the region's image enhancement variable

- The proposed market segmentation could support and correspond to a diversified Tourist Product (not an exclusive "sun and beach holidays" product) valorising the region's environmental resources and increasing its attractiveness and competitiveness in the international market.

d) The long-term stability and demand adjustability variable

- The suggested diversification of markets could provide better and securing conditions to the industry or the diverse tourist enterprises, from particular demand fluctuations over time.

4.3. Land-use Planning Policy and Development Implications

4.3.1. Existing Situation – General Observations

With regard to existing land-use practices and focusing on the patterns of tourist space production and consumption – in most Mediterranean countries and in Egypt – we may distinguish and outline three main types of tourism's spatial development:

- The **first** assumes, location-wise, a predominantly urban or peri-urban and settlement orientation following the general pattern of a town's growth and consisting mainly of hotels or guest houses developing and functioning under formal procedures;
- The **second** type, realised to a large extent under conditions of arbitrariness pertains to the production of vacation houses, or the creation of mainly various accommodation types (villas, apartments, tourist settlements or holiday villages) most of which do not seem to operate "officially" as tourism establishments[5]; and
- The **third** type assumes frequently an "international" or "enclave/foreign" character in terms of consumption (utilised predominantly by foreign visitors) and production (standards or inputs utilised). This is a "resort" type which has not as yet developed in the Fuka-Matrouh area.

Focusing on coastal areas we may observe that in all three types and depending on the size or scale of tourism development (infrastructure/superstructure projects, etc.),

[5] Characteristic example is the type of development along the narrow coastal zone from Alexandria to El-Alamein.

particular environmental problems arise of varying intensity which demand appropriate planning and management systems. This is also evident in the study area, where the absence of a comprehensive and coherent land-use planning policy and specifically shore-land policy is particularly evidenced in the case of tourism growth[6]. Land utilisation practices and land-use changes seem neither subjected to efficient controls, nor follow guidelines "prescribed" in various plans or development objectives.

4.3.2. Land-use Planning Policy (LUPP) Assessment

The assessment (formulation and implementation) of a LUPP for the Fuka-Matrouh area is a necessity and should be considered as a first priority by the Centre of Land-use Planning and Environmental Management (LUPEM) of Marsa Matrouh. The two interdependent components of such a policy are: a. the design and adoption of a Land-use Plan, and b. the establishment of Land-use Management Guidelines (in connection with appropriate legislative support).

Land-use Management and Land-use Regulation depends largely upon a proper classification/differentiation of the various resources and/or uses into different types; e.g. a land classification that identifies different capabilities for agriculture, forestry, mining, tourism, etc. and places limits upon development.

Focusing on the environmental protection and tourism development of the Fuka-Matrouh area (and on the basis of the conclusions of the preceding analysis) an integral LUPP should encompass two interdependent land-use plans: a. a General Land-use Plan, and b. a Tourism-Specific Land-use Plan:

- The **General Land-use Plan** should embody the entire set of zones and zonal divisions corresponding to the different production sectors, as well as the zones of ekistic (built-up) areas and development or land zones within approved town/settlement plans. The plan should also indicate the main transport networks, as well as specific land uses (coastal protection zones, nature reserves, etc.), setting zonal regulations (land-use restrictions and building regulation measures) and possibly outlining financial and fiscal incentives; and
- The **Tourism-Specific Land-use Plan** should embody environmental protection and tourism development zones of specific types[7] which are assessed and differentiated according to: a. the intensity/size/spatial distribution of various recreation activities and user/visitor services (accommodation, restaurants, shops, etc.), b. the resources capacity or fragility, and c. the kind (coverage/diversity) of management resources needed.

The various information/data inputs needed for an integral assessment of the Land-use Plan at the regional scale (Governorate), according to the two types outlined above, are presented in the following Diagram 2**.**

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[6] Characteristic paradigm is the development of "tourist villages".

[7] For example, the "resort" type of tourism development should come under particular land-use regulations through specific legislative acts, and setting conditions/requirements (by the relevant authorities) for enhancing controls.

Apart from the overall (regional) approach of assessing and implementing the LUPP, the importance, particularly for tourism of the **Site Scale** design of land-use and management plans should not be ignored.

Environmental design and land - use plans at this scale together with management guidelines should be prepared for those zones which have been identified in the Land-use Plan as having the greatest potential for development (e.g. tourism potential destination zones), or priority for protection control and management. As to the latter, one should consider specific activities (e.g. developing pilot areas for protection, controlled grazing, and a co-operative system for grazing management) suggested elsewhere.

All development agents, public or private, and particularly investors and developers of tourist projects need to know both the overall context of their projects and mainly the specific conditions of the area in which the project is located.

4.3.3. Development Implications of the LUPP

The implications from the implementation of the LUPP in the Fuka-Matrouh area can only be outlined in broad terms as follows:

- It contributes in:
  - i) attaining the widest range of beneficial uses of the environment without degradation risks (health, safety); and
  - ii) preserving important historic/cultural and natural aspects of the area's heritage.

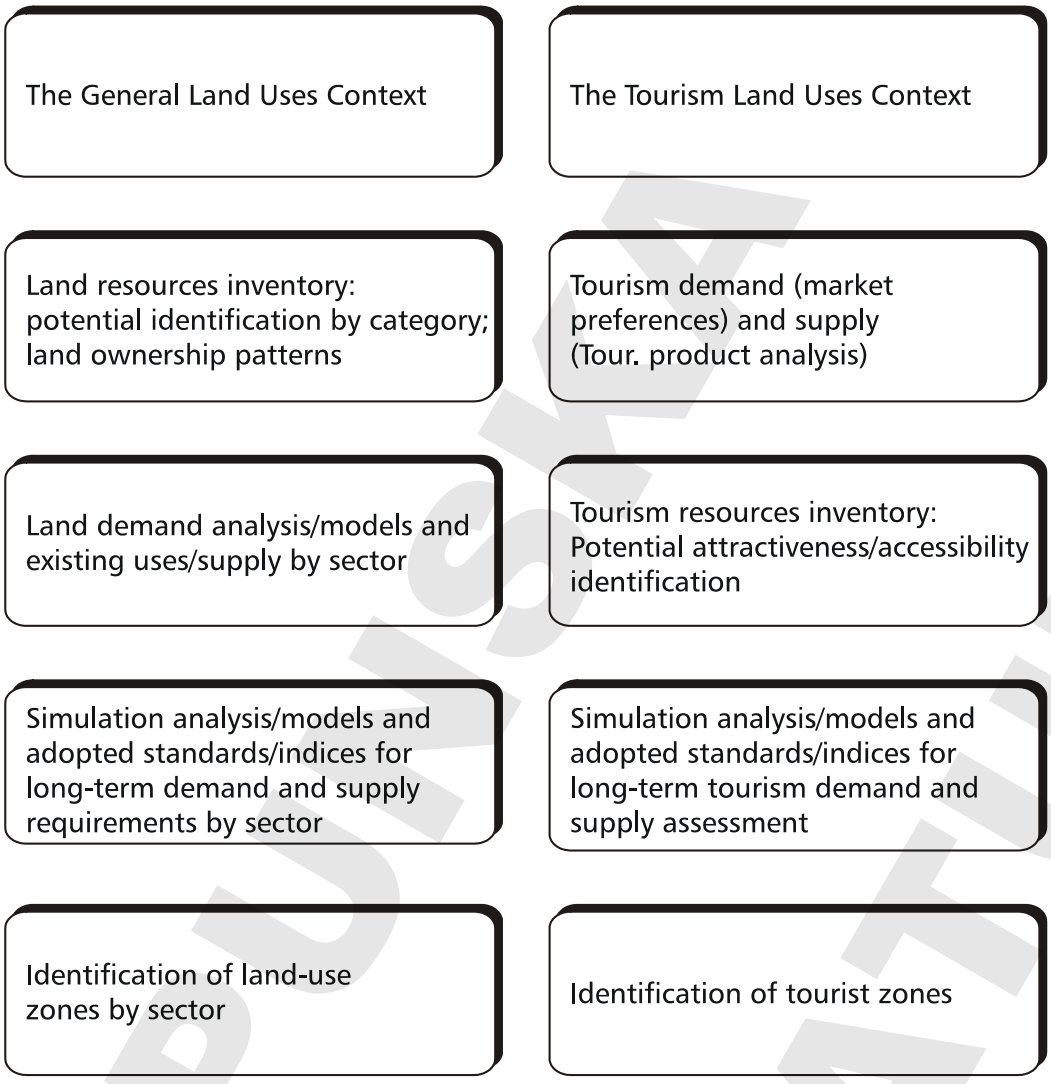

Diagram 2: Main Inputs to Land-use Assessment Process for the Fuka-Matrouh Area

The protection, enhancement and promotion of the area's "individuality" or authenticity provides the greatest opportunity for sustainable tourism development as follows.

- Support a viable economy characterised by stability, diversity and growth that enables the fulfilment of social needs by achieving the rational use of resources and a balance between population and resource use in a way which permits satisfactory standards of living; and
- Provide the background (guidance and requirements) for designing and implementing specific projects (in tourism per se, or in other sectors), as well as, suggesting specific needs or areas of action that should be undertaken by the relevant central or regional (Governorate) authorities.

4.4. Synthesis of the New Situation, and Possible Alternative Approaches to Tourism Development in the Matrouh-Fuka Coastal Zone

The overall analysis of the situation in the area has shown a few key points that have to be considered before the final assessment of different scenarios. Those key points can be summarised according to the previous data analysis and synthesis as follows:

- The Matrouh-Fuka coastal zone can be positioned in the closer and wider surroundings as a new and specific tourist destination.
- The key advantages of the area regarding the Mediterranean in general are its specific characteristics due to its location, unique tourist profile market with the combination of seaside/beach type of destination with few, but specific attractions. They include white sand beaches with clear light blue sea, antique monuments with an accent on personalities like Cleopatra and Alexander the Great, important monuments from the Second World War (El Alamein memorial graveyards, Rommel museum), unique desert attractions (Siwa oasis), and the possibility to visit relatively easily other attractions of Egypt
- The key disadvantages of the area, from a strictly tourist point of view, are result of its position in Egypt as an area oriented predominantly to domestic/Arab market with huge number of capacities built predominantly for the need of Egyptian working population. It is also an area which is not very much turistified in general, despite relatively good infrastructure conditions (motorway, airport, existence of the relatively big town of Marsa Matrouh).
- Although the area is in a way sensitive regarding its physical characteristics, it has already been seriously attacked by new construction of two predominant types:

  a) new housing and some industry due to its position as immigration territory dedicated to solve the problem of the overpopulation of the Nile Delta area

  b) so-called "tourist resorts", but practically secondary homes resorts with a prospective to fulfil the needs of the whole sixty million population of Egypt. That role is given to the whole Egyptian Mediterranean coast, but the study area represents one of the most attractive parts of it.

  If we consider that modern tourism understands that any new establishment needs to be located in basically environmentally friendly surroundings, and that some buffer zones without any construction are needed in order to be competitive on the market, even the large scale commercial establishments are in such conditions environmentally more friendly than the existing ones. Therefore, a change of general orientation from housing, industry and secondary residences towards commercial capacities cannot be seen as a threat, but rather as an effective tool towards the protection of the environment.
- The analysis has shown certain problems regarding water supply, as well as some other infrastructure (sewage, solid waste disposal, telecommunications, etc.). Considering the before mentioned prospects of development, it is obvious that orientation towards commercial tourism instead of the basically non-commercial secondary residences will:

1. reduce the need for fresh water supply due to smaller number of users, or at least keep it at a similar level[8]
2. provide additional funds for financing infrastructure investments through revenues from hotel business instead of burdening the already weak governmental budget, and
3. stimulate better quality and environmental concern regarding infrastructure in general, in order to satisfy the needs of predominantly European users of commercial establishments (especially regarding liquid and solid wastes treatment, and telecommunications)

- The general picture of the area regarding demographic and economic issues suggests that the population is growing fast, and that it is very young and not educated. It is also evident that the newcoming population from the Delta has a tendency to become a majority in the coming years.
- The economic situation in the area is marked by a shortage of industry, and a prevalence of seasonal tourism in the tertiary sector. High percentage of young population which will in few years reach the working age means that a lot of jobs have to be created in the area in near future.
- Under such circumstances the existing tourism orientation on predominantly domestic market in basically non-commercial capacities means a limitation of possible job creation in the near future. To the contrary, commercial establishments based on foreign/European tourist demand can create a lot of new all-year jobs, because Europeans generally tend to avoid summer season due to extremely hot weather in the area.
- The socio-cultural problems, i.e. the relation between tourists and the local community, cannot be seen as a limiting factor for any kind of tourism development in the area for two key reasons:

  a) The actual policy of the state of Egypt regarding colonisation of the area from the overpopulated areas in the Nile Delta results in the prevalence of immigrant population in general. Therefore, even if some threat of destruction of the local/tribal culture and their general values exists, it is not possible to avoid it. Considering the possible future development, there is no doubt that, due to a high volume of permanent and temporary immigration[9], this area cannot be much different from the social-cultural point of view of the rest of Egypt, especially in urban areas, i.e. in the Marsa Matrouh town.

  b) Since about 75 percent of the sample in a field survey have accepted the possibilities of working in the tourism activities, and have no reservations

[8] It must be understood that commercial tourist capacities need much more water per person than non-commercial ones, especially those of lower quality; at the same time higher quality of tourist accommodation usually occupies much larger territory per person, which balances the needs regarding space and water supply.

[9] The users of actual tourist resorts can be considered as temporary population of the area, who, during their period of stay in summer, also have an effect on the local population, if not like permanent inhabitants, than definitely not less than foreign tourists.

regarding European tourists, there are no reasons to worry about possible negative effects of commercial tourism in the area. Since those rejecting the idea of working in tourism are mainly those over 50 years of age, it can be concluded that the absolute majority of local population see tourism development not only as a desirable economic activity for the area, but also for them personally.

- The political economy of Egypt sees tourism as one of the most important economic activities of the country, and has already established legal and fiscal mechanisms to support it. Therefore, the main problem of the Matrouh-Fuka area is a need of the State to fulfil at the same time the domestic people's right to use tourism resources for themselves.
- That need has resulted in a concentration of restricted domestic tourism to particular zones with tourist development managed by various state institutions, and characterised by limited control and low quality of accommodation. Unfortunately for the area in concern, it seems to be that the Mediterranean coast in general has been intended for this function, with the study area functioning as a very desirable one due to the position of the Marsa Matrouh town as the only larger urban area between Alexandria and the Libyan border.
- Issues of management and protection show that in Egypt exists a certain group of legislative instruments which are quite sufficient to support a sustainable tourism development, but the problem lies in their efficacy at both national and regional scales.
- In that sense the introduction of tourism capacities which can be competitive on the international market can support the implementation of those instruments, because the international subjects in charge of investments will insist on their application. For them it is necessary not because of their wish to improve the quality of the environment, but in order to secure efficacy of their establishments as required by ecological sensitivity of the users coming from the ecologically conscious European market.
- The existing tourism development patterns of the Matrouh-Fuka coastal zone marked by secondary residence resorts for Egyptian people tend to produce tourist saturation of the area in a relatively short period. The threat will become even bigger if those resorts are primarily oriented towards a lower level of quality, because it generally means higher concentration of people in small area and higher occupation of the beaches.
- A better quality level of tourist establishments generally means not only lower concentration of people, but also diminishes pressure on the coast owing to a higher mobility of users, who are more able to spend additional funds for visiting other places outside their accommodation, and have more interest in cultural attractions, excursions, etc.
- In other words, a change of tourism development patterns towards the European market, and higher quality commercial accommodation can encourage dispersion of tourism throughout the area, and reduce pressures on the beach areas.
- Finally, it is concluded that an integrated Land-use Planning Policy, consisting of two interdependent land-use plans (general and for tourism) can be used as an

efficient tool for the implementation of sustainable overall and tourism development of the area.

From the above key points of the synthesis of the new situation it can be concluded that the sustainable tourism scenario is probably somewhere between the two extremes below:

1. Undesirable, but unfortunately realistic scenario of tourism development without any restrictions, which, under the existing circumstances, would be a continuation of the existing environmentally and economically extremely unfriendly trend of interpolation of secondary residence resorts in all suitable areas; and
2. Maybe desirable from a purely environmental point of view, but in reality not realistic alternative scenario which, under the existing circumstances would be a strict restriction of any kind of tourism development

Therefore, the only realistic and, at the same time, sustainable scenarios under the actual circumstances are those in which the European market should play a more important role in the future tourism development, which can be realised either through:

1. A scenario of free transfer to commercial interests for overall development predominantly by foreign entrepreneurs; or
2. A sustainable scenario which tends to achieve this goal with the use of controlling instruments which can enable the fulfillment of both the needs of the people in the area, and the state of Egypt in general.

5. TOURISM DEVELOPMENT OPTIONS

5.1. Tourism Development Without Restrictions and Control Based on Domestic Large and Small Scale Investments

The option of tourism development without restrictions and control in actual circumstances is the continuation of the existing trends of enormous growth of so-called tourist resorts, but practically secondary residence resorts built for the people of Egypt. Such trend can be viewed as the most extreme one, because the majority of those "tourist resorts" are built for the demand with a very low purchasing power, with a consequence of the much higher density of people per sq. m of land area and per meter of the beach than in case of commercial tourism capacities.

The number of beds in so called "tourist resorts" is estimated between 30,000 and 40,000 or more, because any precise approximation was not possible due to the fact that almost all such establishments are closed for non users and the owners were not willing to give the right numbers. Considering that on more than 40 new locations (according to the unofficial information) the licences for building are already issued, it can be estimated that the total number of people in those objects will surely reach the minimum of 100,000, if not much more, if we count also the existing commercial capacities.

Although it seems that at the time no more licences for building of those capacities will be issued, considering the actual situation on the entire Mediterranean coast of Egypt, especially close to Alexandria, it can happen that the trend will continue also in the future despite the temporary standstill. The continuation of those trends, even on a small scale, can very easily result in more than 150,000 or 200,000 persons from attacking the coastline of the Marsa Matrouh-Fuka coastal zone, what is above the pure physical carrying capacity of the area according to the basic calculations in relation to the length of beach and possible number of users.

Such a development can in practice cover almost the entire study area with accommodation capacities, leaving free only those not easily accessible ones, and those which due to their ecological importance eventually can get a sort of protected area status, such as part of Ras El Hekma peninsula (see Figure 7). Even those few commercial capacities can in such circumstances attract primarily domestic market and, therefore, result in a poor outcome regarding income and employment.

Since it has already been stated that the demographic and socio-cultural parameters are not a limiting factor of carrying capacity due to strong urbanisation and immigrant character of the area, it has to be mentioned that such a development is extremely dangerous for the area not so much from the physical-ecological, as from the economical and political point of view. The key reasons for such a conclusion are consequences, such as:

1. The building of secondary residences attacks usually the most attractive part of the study area, either from the natural (close to the attractive beaches) or

infrastructural point of view (close to the Marsa Matrouh town and coastal motorway);

2. The "tourist resorts" in most cases include a stretch of coastline surrounded with a fence, so there is no free access to coast for other users, what limits the access to the coastal zone in general; that limits also a possibility to form a riviera type of destination, what is considered as a typology of the study area;

3. As a consequence of the above, there will only be a few attractive spots for possible commercial tourism development, with relatively unfavourable conditions regarding natural attractiveness and burdened with higher investment costs due to additional investments in the basic infrastructure (roads, water pipeline, electricity, etc.); and

4. Finally, a huge scale of such development will discourage eventual investors in commercial capacities due to a poor image of the area caused by high concentration of tourists with a very low purchasing power (especially if those commercial capacities tend to attract foreign tourist demand).

All above mentioned consequences will result in a fact that the most favourable resources for the future economic development will be lost forever, especially if we consider that there are no other such favourable sources of income in the Fuka-Matrouh area. Namely, the study area includes the town of Marsa Matrouh, as the only important urban settlement on the entire coast between Alexandria and the Libyan border and, therefore, the area which has the highest interest in finding new jobs.

In such circumstances, the logical proposal should be a strict rejection of option of continuation of the existing trends and usage of all possible measures to stop the continuation of issuing new licences for new secondary residence capacities. Since the need for those capacities cannot be rejected in general, because the people of Egypt must have a right to spend a holiday in a form of accommodation they are able to afford (and this form is evidently the one), the development of those tourist resorts should take place in some areas where negative effects as above mentioned can be avoided.

Since the majority of Egyptian people do not use air traffic for holiday purposes due to their low purchase power, for them is not necessary to be oriented on the area close to the Marsa Matrouh town, as with foreign tourists oriented almost exclusively on air traffic. Therefore, the areas closer to Alexandria are more suitable for Egyptians, and the study area for foreign tourists. At the same time, allocation of secondary residence resorts closer to Alexandria is more appropriate both for ecological and economic reasons because:

a) this area, especially close to Alexandria, is already devastated with construction of secondary residence resorts and other construction (what is not a problem for domestic people used to live in overpopulated areas, but is for foreign tourists); and

b) it cannot produce huge economical problems, because the allocation is oriented either on urbanised and industrialised area (closer to Alexandria) or sparsely populated area (more far from Alexandria).

Therefore, it is suggested to limit the new construction of secondary residence resorts from Alexandria to about 70 kilometres east from Marsa Matrouh, what is approximately the limit of the study area. In that case, both basic social and economic

needs can be fulfilled – the right of the Egyptian people to spend a holiday in their own houses will be enabled and the key economic resource basis of the Matrouh Governorate will be protected for the future generations.

5.2. The Option of Free Transfer to Commercial Interests for Overall Development Predominantly by Foreign Entrepreneurs

From both a conceptual and an operational point of view this option relates to a specific structure of the tourist industry, as well as of the tourist product and market (a defined group of consumers geared towards a particular product or range of products).

- A **tourist industry**, with the predominance of foreign enterprises/businesses related mainly to package holiday travel.
- A **tourist product,** which is tailored to the particular needs of the market, or the clientele favoured by the tourist entrepreneurs.
- A **tourist market,** which consists of foreign, predominantly European tourists or market segments.

5.2.1. The Tourist Businesses/Entrepreneurial Environment

With the basic premise that this option ("free transfer to commercial interests") involves the withdrawal to a large extent or confinement of public/government involvement in tourism, it is logical to assume that the underlying to this development mode **principles** and **goals** relate and adjust more or less to the business' operational environment.

The predominance of **foreign enterprises** relates to two basic operational components:

a) such businesses have within their power the ability to change certain aspects of their internal operations as and when they consider it fit; and

b) the environment within which such business operates pertains to the country's and region's specific political, economic, legal and socio-cultural structures. An overall environmental structure which is subjected to changes over time (necessitating corresponding adaptations by business) and which business can variably influence or over which they have a considerable or limited control.

5.2.2. The Tourist Product and Market Formation

Foreign businesses (entrepreneurs, investors, etc.) having a clear understanding of

a) which products are in demand; and

b) how (the different ways) to maximise their profits

will direct their attention and efforts towards tailoring the study area's tourist products closely to the needs of their clients.

This could happen if there is a little relation with their immediate economic and socio-cultural surroundings, or if there is no co-operation and working in harmony with local/host communities, which could result in a development irrespectively of the pragmatic local community needs or the capacity of the region's resources.

Among the major trends in the tourism industry, one should mention the tough competition and pressure to cut costs which lead businesses to consolidation and mergers, as well as, to a large scale tourism development, and the "inevitability" of which is argued with regard to external economies of scale and the market structure of international tourism. Another recent trend pertains to efforts geared towards diversifying the predominant development type of the traditional "mass package beach vacations", a rather favourable trend for a region's development.

However, on the basis of a wider consensus pertaining to this mode of development by foreign enterprises (the option discussed) one may observe the following:

- This development mode leads to the formation of a Tourist Product which follows modern development standards (facilities, services, etc.). but is characterised by isolation (spatially and socially) and is frequently called "tourist enclave resort" type of development. According to certain analysts' views[10] "enclave resorts" result in minimal economic benefits for the host community, due to their high leakage rate, their dependency on international charter operations, the use of high imports (consumption products) and expatriate employees.

Following the above description of the option's main components, one should note the following:

- The development potential or realisation prospects of this option should be viewed mainly within the frame of the state's (governmental) future tourism, as well as the overall development policy.

The future tourism policy may be seen as falling in and relating to the three scenarios outlined below and pertaining to the evolution/change and the future overall profile of governmental development policy:

a) The status quo, or the traditional approach scenario according to which the central government maintains its dominant role following the existing development policies and practices;

b) The radical change scenario, where the role of the central government is limited and the private sector's involvement is dominant at the planning and policy formulation levels; and

c) An intermediate (as to the above two) scenario between a centralised planning and operational system and a complete privatisation with no change of status quo but with technical/administrative efficiency and effective management/co-ordination of development policies.

Evidently, this option falls into the second scenario and relates to a mode of tourism's growth which seems to develop independently or to have limited integration (inter-sectoral or otherwise) and interlinkages with the region's overall development process, or with the objectives of the ICAM plan.

The approximate spatial development of this option will probably tend to occupy primarily the area around the Ras El Hekma peninsula, because it allows to form "tourist enclave resort" type of development, i.e. separation from the existing secondary residence capacities and the local population in general. It is also likely that some

[10] Wilkinson P. (1985) "Strategies for tourism in island Microstates" Annals of Tourism Research, Vol. 16, No. 2.

entrepreneurs will have interest to be closer to Marsa Matrouh in order to be close as possible to the airport and to the city itself (see Figure 8).

Since this option is by the definition the one which does not take much care about the carrying capacity issues, there is no sense to calculate the number of beds, especially because it will be very much dependent on the typology of the market.[11] Anyway, this number cannot be larger than in the previous option of the continuation of the existing trends.

5.3. Alternative Tourism Option

An alternative tourism scenario based on a strict nature protection and predominantly on "eco" types of tourism is in the Fuka-Matrouh area not a possible one, since the area is already occupied with a lot of big scale tourism accommodation capacities and exposed to strong immigration. Considering the actual growth of various buildings, infrastructure, industry, etc., an alternative scenario for the area can be explained only in a form of strict restriction of any kind of new tourism development. According to the actual situation, the attempts to limit the tourism development in order to preserve either natural or cultural environment have no real chances to be realised.

In the line of alternative option are some studies which see the future of the study area mainly as an agricultural with tourism as an additional activity. One of the most recent and comprehensive studies the study arguing the opportunities for the development of the North West Coast was conducted in 1995 by Prof. M.A. Ayyad for UNEP. The study aimed at listing the characteristics of the region and it was concluded with certain guidelines or remarks that should be taken into consideration when planning for the development of the region. These remarks can be summarised as follows:

1. There is a need for setting up a clear policy for land tenureship.
2. The agricultural projects are of prime importance to the population of the region.
3. Concerning the industrial activities, focusing should be on the manufacture of food, in addition to handicrafts expressing the existing environment.
4. Industrialisation of agricultural and animal products carried out by local population should be considered as an important sector of development.
5. The agricultural and grazing activities are the economic basis of development, therefore, they should take precedence in the region.
6. The projects of agricultural, grazing and handicrafts should integrate with the tourist activities, which are capital intensive, in the form of a cluster of tourist villages that will have agricultural surrounding, necessary for providing tourists with food and traditional souvenirs.
7. The development process will never achieve its target without the conscious, active participation of the local citizens, and their full approval of the intent of the authorities undertaking the development and reconstruction programmes.
8. The role of women must be carefully considered in the development programmes.

[11] Higher category of the establishments usually means lower number of beds per square meter of project development area and vice versa.

Although the general idea of the study was in the line of local people needs, it has neglected the actual key problem of huge scale holiday home resorts in a way that they were not seen as a main threat to the local economy. Namely, the predominately domestic tourist demand in those resorts is potentially much bigger than foreign tourist demand, but is at the same time much less interested in local products than foreigners and, therefore, much less desirable from both the economical and ecological aspect.

Furthermore, the limitation of commercial tourism development can be contraproductive from the ecological point of view, because the need to solve the unemployment problem in the area and especially the Marsa Matrouh town will in case of restrictions towards tourism probably result in the introduction of industrial capacities and/or in housing close to the coastline.

Therefore, the possible spatial result of such an option shows much lower concentration of accommodation capacities (see Figure 9), but regarding actual situation can result in other types of construction in the coastal zone that are not shown, but can be even more dangerous. We must also take into account that due to the absence of commercial tourism the local community will be less sensitive towards the protection in general (as seen in the coastal strip close to Alexandria), especially because the area cannot be easily controlled due to the low population density.

In such circumstances, the commercial tourism development cannot be seen as a threat, but more likely as a most efficient tool towards protection of the environment. That role is a result of a direct economical interest of modern tourism development to:

- keep a narrow coastal zone as much as possible in natural condition, especially the most attractive beach areas;
- keep some parts of the wider coastal zone and adjacent areas completely intact due to a necessity to produce some buffer zones between the accommodation establishment; that is necessary in order to increase their market value, because accommodation establishments surrounded by natural areas usually have higher economical value than those in urbanised and especially saturated areas; and
- to discourage environmental very unfriendly further construction of secondary residence resorts, as their possible competitor reflecting to the most attractive parts of the coastal zone and a factor of decreasing their market value due to saturation processes.

Therefore, the sustainable tourism development option based on introduction of commercial tourism capacities and foreign tourist demand in the Fuka-Matrouh area is in practice more environmental friendly than the alternative tourism option based on restriction of further investments. What is even more important, the following sustainable option offers also an effective tool for the solution of the unemployment problem and, therefore, makes a bright prospect for the overall development of the whole study area and the Matrouh Governorate, in general.

5.4. Sustainable Tourism Development Option

Although there are some differences regarding the concepts, principles and operational aspects of sustainable development there seems to exist a general consensus[12] regarding the main goals of this development modality and process:

- A development modality that considers carefully a country's or a region's need to use properly its natural resources for promoting a viable economic growth and socio-economic development; and
- A process that involves managerial regulatory interventions to limit negative impacts of human activities on the environment and secure that damages incurred for the general good are not irreversible.

The fundamental (basic) premise underlying the STD option outlined below is based on the assumption that there exists an alternative mode of tourism development, different from the predominant today which is deleterious to the environment. A development mode through which tourism as an essential component of economic development contributes to continuous economic growth without environmental deterioration or destruction. On this basis we analyse below the two constituent parts of the STD option:

a) The main assumptions as to the principles and goals underlying an STD option and on that basis the suggested synthesis of the Tourist Product; and

b) A general and preliminary delineation of the main parameters defining Carrying Capacity relevant to the STD option.

Principles/Goals of STD and the Synthesis of the Tourist Product

Among the principles and goals of sustainable tourism development we may selectively distinguish and outline here the following most relevant ones to the study area:

- Select and promote tourist products and specific development objectives which conduce to the intraregional differentiation and diversity of the tourist product;
- Maximise the economic benefits of tourism over the entire region by providing the best interlinkages of coastal tourism to the hinterland areas and other sectors of the regional economy;
- Encourage and support local initiatives and involvement conditions in tourism development, as well as the maximisation of the spread range of socio-economic and environmental benefits occurring to the local communities;
- Secure and promote a symbiotic relationship between economic and ecological development parameters: conserving and enhancing the entire range of environmental (physical and socio-cultural) assets of varied coastal and inland landscapes; and

[12] There is also a degree of consensus on the viability and the good prospect of achieving a STD without negative impacts / damages to the travel industry / tourism businesses. See e.g. Filho W.L."Putting principles into practices: sustainable tourism in small island states". International Conference on Sustainable Tourism. Malta, 1993.

- Secure and promote continuity and adjustability of the coastal tourism development within its wider environment concerning types or models of tourism development capable of responding to conditions of the international tourist market, and maintaining a continuous attractiveness within the destination choice patterns of different visitor groups.

The suggested overall synthesis/structure of the tourist product is based on the preceding identification of existing development patterns and on the area's tourist capability, i.e. a general evaluation of existing resources (natural, human, socio-economic) and their potential. The envisaged long-term structure of the area's tourist product, outlined in Table 3, consists of three main Product Lines and related production phases (various inputs and outputs) which contribute to the development of an integrated tourist product corresponding to a diversified tourist market.

The proposed structural diversity of the tourist product corresponds to a supply which differs from the existing dominant development patterns (e.g. tourist villages / summer residences) for the prevailing of domestic tourists, or from the "enclave tourism" types of development (evidenced in certain coastal regions but not as yet in the study area) according to which there is a distinct separation of foreign tourism (mainly in isolated resorts) from domestic tourism and generally the local milieu.

<table>
<tr><th>Primary Inputs
(Resources)</th><th>Intermediary Inputs
(Infrastructure)</th><th>Intermediary Outputs
(Supporting Services)</th><th>Final Outputs
(Activities-Experiences)</th></tr>
<tr><td rowspan="2">Attraction resources: natural, cultural</td><td colspan="3">Product Line I: Elements of Superstructure (accommodation) and Infrastructure</td></tr>
<tr><td>1. Main accommodation types: Traditional units (hotels and similar establishments), mainly of urban orientation, campsites and tourist villages, holidays dwellings/second homes</td><td rowspan="2">7. Diverse services: related to the various accommodation types and/or the supporting tourist infrastructure</td><td>11. Recreation: renewal, entertainment, relaxation</td></tr>
<tr><td>Financial/capital resources</td><td>2. Supporting tourist infrastructure: Catering, shopping, entertainment, athletic/sport facilities</td><td>12. Experiencing local milieu: socio-cultural interaction, contacts, local cuisine</td></tr>
<tr><td rowspan="2">Public infrastructure: energy networks, transport, communication</td><td colspan="3">Product Line II: Elements of Environmental Attractions (over the entire region: SWE of Matrouh)</td></tr>
<tr><td>3. Cultural: heritage/ archaeological sites, temples, museums, living heritage attractions (traditional/local cultures)</td><td>8. Special Services: related to cultural attractions (e.g. museum guides), or natural (e.g. medical, therapeutic in spas)</td><td>13. Cultural and outdoor recreation: athletic activities and experiences of professional, scientific, recreational, educational and religious nature</td></tr>
<tr><td>Sociocultural infrastructure, human resources</td><td>4. Natural, Ecological: beaches, ecosystems, nature reserves, spas/thermal springs (Siwa)</td><td>9. Basic services: for technical/ /scientific support, protection and management of attractions</td><td></td></tr>
<tr><td rowspan="2">Land and building materials, construction technology</td><td colspan="3">Product Line III: Elements of Transport/Touring networks and Tourism Information</td></tr>
<tr><td>5. Travel networks and itineraries: the entire fabric of interconnected travel centres (terminals, centres) itineraries, circuits and means of travel, touring.</td><td>10. Services pertaining to travel agencies: coach operators, car rentals, travel guides, animators and information centres.</td><td>14. Touring activities and experiences: related to sightseeing, photography, safari expeditions, etc.</td></tr>
</table>

Production: Primary, secondary, tertiary sector	6. Information and advertisement networks: information/ communication offices linked to travel agencies/ hotel establishments, or independent		

Table 3: Structure of the Tourist Product: Main Product Lines and Production Phases

The proposed three product lines are strongly interrelated and their development depends on both the primary inputs/resources needed and the correct timing and co-ordination of various policy measures in tourism per se or in other sectors. However, the sustainability of the proposed tourist product is dependent on the parallel development of an appropriate and corresponding to the tourist product tourist market.

An appropriate tourism market structure or segmentation from a planning/policy formulation point of view follows and adjusts progressively to the process of the Tourist Product formation on the basis of a specific strategy of Tourism Market Segmentation. This is a long-term process which considers and interrelates different market segments across specific issues:

- across time: with regard to the varying periods / dates of arrivals and length of stay;
- across space: considering the various spatial distribution patterns (coastal, hinterland areas, etc.) and movement of tourists;
- across origin places: analysing the specific origin places of the broad Western/Arab/Egyptian clientele mix; and
- across activities: exploring the orientation of each market segment to specific activities and promoting an appropriate activities pattern.

The last issue is of particular significance because it involves tourism's interlinkages with other local activities and production sectors. For example, tourist activities related to traditional arts and crafts will both preserve local cultures and contribute to the viability of this local economic activity. Also, environment related tourist activities will contribute to supporting local economies (employment) and maintaining natural resources.

Carrying Capacity for the STD Option

With regard to a preliminary and general delineation of carrying capacity related to the STD option, we are briefly outlining below the three main categories of parameters (see Diagram 3) which roughly indicate the main quantitative and quality capacity levels of the area: a. the physical – ecological parameters, b. the socio-cultural parameters, and c. the political – economic parameters.

With regard to the first category, and specifically the parameter physical-natural resources, its capacity assessment seems easier due, more or less, to the "fixed" attributes of the elements constituting the parameter, as against the other two groups (b, c) of parameters which appear to be more "flexible" (interdependent with many other factors); then, assessment depends on diverse impacts/variables and contingent situations.

However, both socio-cultural and political-economic groups of parameters assume significant weight in assessing the carrying capacity of the area; practically due to the area's level of development (overall and in tourism per se) and the influential role such parameters (particularly the socio-economic) exert on the other.

The physical-ecological parameters

The total potential physical carrying capacity has been broadly estimated on the basis of existing (limited) information and assumed standards with regard to beach capacity and coastal visitors / accommodation capacity and with reference to the study area.

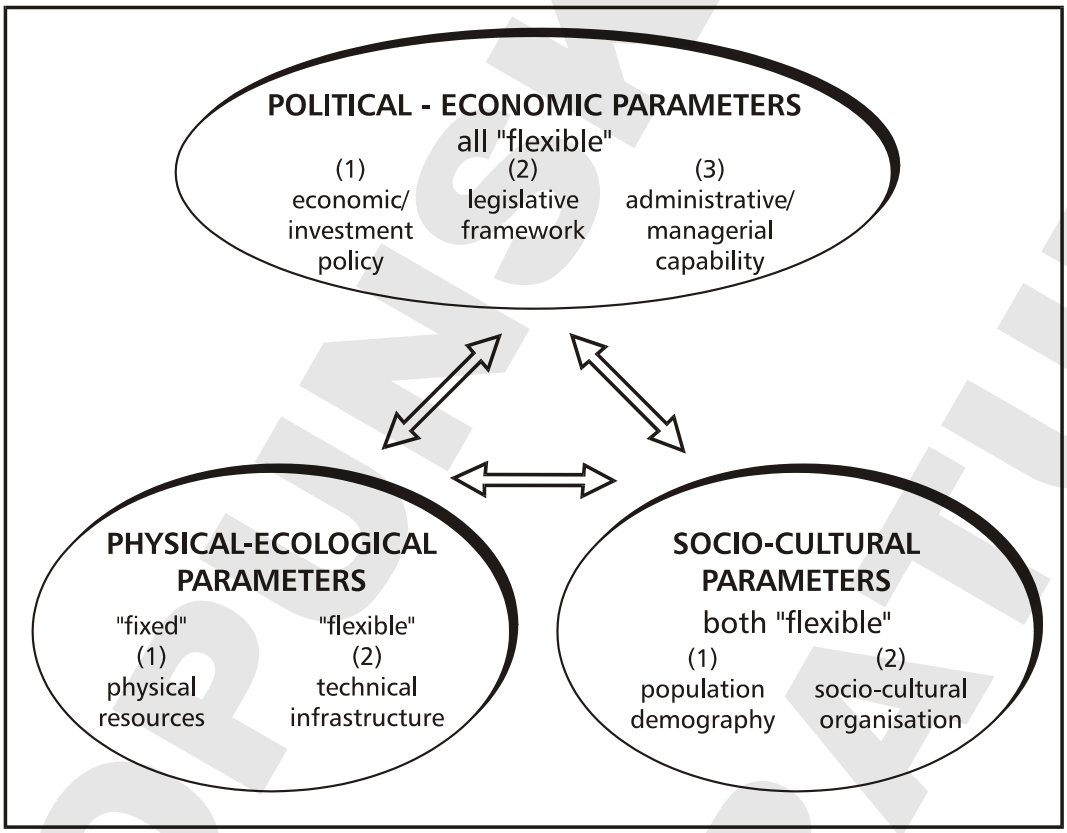

Diagram 3: Parameters of the STD Option

Beach Capacity

The estimated beach capacity[13] for the main study area ranges from 125,000 to 220,000 beach users/swimmers while for the adjacent coastal zones east and west the range is 94,000 to 150,000 users.

[13] This is a potential beach capacity, assuming a. the existence of proper accessibility, b. a coastline of 20 or 35 km for the study area and 15 or 25 km for the adjacent coastal zones, two alternatives corresponding to suitable bathing beaches of high and standard quality, c. a 50 m wide beach zone, and d. a beach use standard of 8 m^2 per swimmer/user.

Visitors/Accommodation Capacity

On the same basis as above the visitors/accommodation capacity along the coastal zone[14] is estimated at 95,000 to 165,000 visitors/ beds for the main study area and 70,000 to 120,000 for the adjacent coastal zones.

The existing and potential capacity levels pertaining to the technical infrastructure networks refer to two main categories:

- the transport (road/rail/sea/air) and communication networks (infrastructure and services); and
- The set of networks covering water supply, sewage collection/ /treatment and waste disposal systems.

Within the above context, one should notice generally that both categories of existing networks seem to impose limitations (short and medium term) on increasing tourism capacity levels. Properly planned intervention and development of infrastructure could increase considerably, in the long term the capacity levels.

The socio-cultural parameters

The socio-cultural parameters pertain to a particular set of elements or variables which define and characterise local communities. In our case and with regard to the STD option we are focusing on two categories: a. population and demographic structure (existing and future), and b. socio-cultural institutions/organisations (e.g. the "Tourists' Friends Society) and activities, as well as behavioural aspects and social interception patterns (hosts and guests).

The size of population[15] and its spatial distribution, but mainly high percentages of illiteracy and low educational/professional standards, as well as large percentages of young (under 15 years) population do not contribute to creating a sound economic base at least in the short term, and do not support large tourist inflows.

With regard to the region's (Governorate) administrative/institutional structure (apparatus and mechanisms) it is difficult to assess its potential/future capacity to support via technical and financial resources the area's cultural networks (infrastructure and services) or local/traditional activities. At present, such a capacity seems to be limited, considering the range of government and local initiatives with regard to the role living heritage and genius loci (i.e. the entire range of diverse cultural activities, such as traditional fairs, feasts, local rituals, etc.) play in attracting tourism.

With regard to existing and potential labour and employment capacity one should consider the whole range of constraints and potentialities pertaining to the production

[14] We are assuming 1 km wide coastal belt and a standard of 50 users per ha on this belt; the same for the two alternatives.

[15] Existing population (1996 census): 212,000 for the Governorate and 80,000 for the larger Marsa Matrouh area; 53% in urban areas and 47% in rural (wide spreading of small settlements/dwellings) Projected population (year 2010): 253,000 for the Governorate, 190,000 for the larger Marsa Matrouh area and 63,000 for other towns and villages between El Alamein and El Salloum.

sectors; examining the effects of central government plans and policies for the area[16]; the growth rates by sector; and the degrees of flexibility each sector exhibits in adjusting to and meeting the changing intra- or extra regional demand conditions[17].

With the two main sectors, the primary (agriculture and animal husbandry) and the tertiary (services and tourism) attracting the main employment potential in the area, the long-term employment needs for the STD option are estimated at 30,000-35,000 persons (qualified local labour force and seasonal migrant flows).

Considering the entire range of socio-cultural parameters, the long-term Carrying Capacity levels, relating local population (hosts) to visitor population (peak season / day guests), may not exceed the ratio 2.5 to 1 under the conditions/prerequisites of sustainability.

The political - economic parameters

The political - economic parameters seem to exert substantial influence in effecting and defining the Carrying Capacity levels. However, the influence of such dynamic parameters is not easily measurable due to their "flexibility" and the lack of sufficient information inputs. Drawing on the preceding analysis of the political-economic situation in Egypt and its effects on the study area, we may briefly outline certain issues of particular relevance to the STD option.

The future tourism policy may be seen as falling in and relating to the third of the three scenarios outlined in Section 5.2.

On the basis of this scenario, one may assume that the area's future tourism development will follow an integrated planning approach and co-ordinated management / control measures, different from present practices evidenced in the Fuka's "Integrated Tourism Centre" paradigm[18], a model that could have, if it prevails all over the area, negative impacts on the area's ICAM and STD.

Apart from the physical parameter which defines high carrying capacity levels, the other two parameters, the socio-cultural and the political-economic one, impose constraints. For example, there are limits posed by the local population characteristics and the availability of labour. The managerial parameter is also a constraint, regarding the volume of visitors both the public and the private sector can handle or cope with (operating staff in various services, budget constraints, etc.).

Thus, on the basis of the preceding analysis and an assumed ratio of local population/hosts to visitors/guests during the peak season/day of 3/1 – 2.5/1, we

[16] Ministry of Planning (1977) The Fourth Five-Year Economic and Social Development Plan 1997/8 – 2001/2, Ministry of Planning, Cairo. According to the Plan, central government policies and investments are focusing and geared predominantly towards the agricultural sector and the housing/construction and infrastructure/utilities sectors.

[17] How the various traditional socio-economic systems (e.g. tribal/Bedouin) and organisational types (e.g. patriarchal relations) will evolve is difficult to assess.

[18] The study area of the CAMP Fuka-Matrouh falls under two development control jurisdictions: a. the coastal area from Matrouh up to 40 km eastwards under the Governorate's jurisdiction, and b. the rest 35 km to Fuka, including the Ras El-Hekma sector and the jurisdiction of TDA under the Ministry of Tourism.

estimate the maximum accommodation capacity of the entire area ranging between 80,000 to 100,000 beds in total. If we count the existing accommodation capacities together with so-called "tourist resorts", for the future commercial tourism accommodation capacities the maximum can be about 40,000 to 50,000 beds. Considering the actual tendencies in issuing licences for secondary residence resorts, the limitation of such development is a prerequisite for achieving an STD option.

6. TOURISM CARRYING CAPACITY ASSESSMENT OF THE FUKA-MATROUH COASTAL ZONE

6.1. Requirements Necessary to Achieve the Sustainable Tourism Development Scenario

The sustainable tourism development scenario corresponds actually to a long-term development model according to which, tourism, as an essential component of economic development contributes in a synergetic relationship to other productive sectors to the areas' continuous economic growth in a way which does not destroy the environment and the area's sound and attractive natural and socio-cultural resources are protected and upgraded.

This type of development presupposes and requires continuous efforts and co-ordinated actions among various actors. An overall frame of the main parameters involved in the process for attaining sustainable tourism development and the related conditions (requirements and objectives) are outlined in Diagram 4 and analysed below. Also, in this section we outline the main priority policy actions needed to achieve STD. Further analysis of requirements and specific proposals are undertaken in the following section and mainly in Section 6.5.

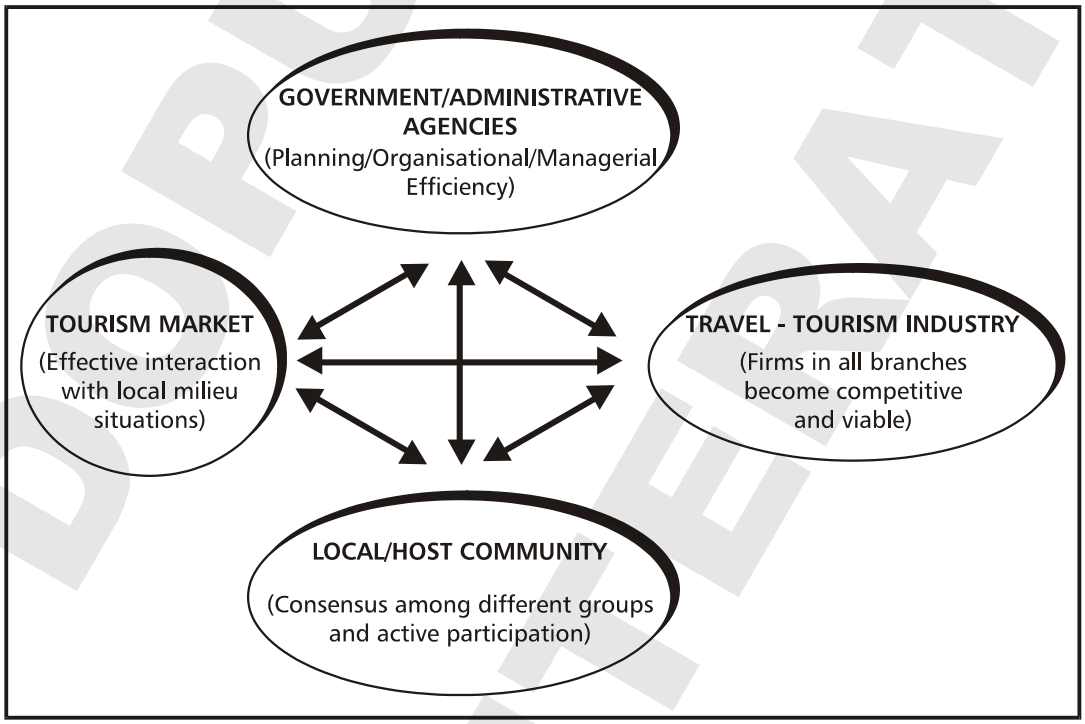

Diagram 4: Main Parameters and Conditions of Sustainable Tourism Development

6.1.1. The Framework of Parameters for Attaining STD

Parameter 1. Tourist Market: different segments of visitor population

a) Main requirements/prerequisites: tourists/guests show:

- authentic interest, knowledge and concern for local culture or socio-cultural activities; and
- willingness, flexibility and capability to adjust or modify behaviour during contacts and interactions or vis-à-vis local milieu situations.

b) Main objectives/outcomes:

- increased appreciation/respect for local socio-cultural activities and products: people, places, traditional activities;
- improved interaction/communication between hosts and guests;
- increased expenditures for buying local products – handicrafts; and
- qualitative upgrading or enhancement of tourist experience.

Parameter 2. Local/Host Community

a) Main requirements/prerequisites:

- increased sense of local identity/coherence and awareness/pragmatism in recognising development possibilities (weaknesses, advantages/strengths); and
- Maximum possible consensus/agreement among different local groups / agents / interests on major development aims.

b) Main objectives/outcomes:

- Increased satisfaction of local communities with levels and types of tourism development in connection with:
  - enlargement (larger share) of socio-economic benefits (incomes, employment) from increased tourist expenditures, and
  - substantial contribution of tourism to the protection and valorisation of natural and socio-cultural resources.

Parameter 3. Government/Administrative Agencies – Central/Regional/Local

a) Main requirements/prerequisites:

- rational diagnosis and evaluation of problems and development potential/opportunities in tourism; comprehensive planning approaches and appropriate legislative framework;
- co-ordination of tourism relevant policies among various agencies (of the tourism sector or of related sectors) at different spatial levels; and
- administrative/managerial efficiency for securing appropriate and continuous investments, inflows and adequate funds geared towards main tourism infrastructure and superstructure projects.

b) Main objectives/outcomes:

- reduction or minimisation of negative environmental impacts caused by exceeding capacity limits of resources;
- maximisation of tourism's socio-economic benefits to local communities and balanced spatially development; and
- secure long-term viability of investments and provide the best interlinkages of tourism with the other local productive sectors.

Parameter 4. Travel / Tourism Industry / Enterprises

Includes private and public firms operating in the accommodation/catering, transport, communications and cultural/entertainment sectors.

a) Main requirements/prerequisites:

- proper recognition of opportunities and development perspectives in conjunction to realising and rationally utilising existing investment opportunities;
- increased competitiveness and viability of existing (and future/prospective) tourist enterprises through enhanced/co-ordinated management and policy (investments/marketing); and
- creating conditions which encourage both local involvement and the development of various forms of partnerships (public/private, foreign/local) among prospective investors.

b) Main objectives/outcomes:

- increased contribution of the private sector to both the protection/valorisation of environmental resources and the development of cultural facilities leading to substantial local economic benefits (income, employment); and
- reduced negative environmental impacts (caused by over-use of sites and infrastructure) as a result of appropriate managerial policies (environment, auditing, etc.).

6.1.2. Main Interventions Required to Achieve STD: Priority Policy Actions

With regard to transport networks, priority (from a STD viewpoint) should be given to:

a) providing the infrastructure and services and reconditioning of the Marsa Matrouh airport; and

b) properly extending/upgrading the road network for supporting travel itineraries.

With regard to the envisaged "new coastal highway", its feasibility and impact should be thoroughly investigated; perhaps it is not suggestible due to its detrimental effects to the coastal environment and the difficulty of avoiding of mass scale tourist buildings all over the coastal zone.

Two of the most serious and urgent problems pertain to the **water supply system** (related to water resources capacity and their proper distribution/management among the agricultural domestic consumption and the tourist sectors) and the **sewage** collection and treatment systems, which must at least triple their present capacity in order to serve the projected population (year 2010: 253,000) of the Governorate.

As it has been noticed earlier, the country-wide private tourism investments climate is quite favourable, although according to public governmental plans the region does not seem to be the focus, as other regions[19], for tourism-specific or overall development. Among the planning priorities, a long-term Tourism Investments Strategic Plan seems necessary. A plan drawn by the competent Tourism Development Authority of the study area and encompassing the whole range of programmes, projects and measures needed, as well as their timing, in two main areas:

- public investment for preserving and upgrading environmental resources, i.e. the various cultural sites and natural/ecological attractions; and
- private investments indicating the preferred accommodation types and locations for creating a diversified tourist product (which to-day is dominated by tourist villages / summer residences for the domestic market).

The existing legislative framework directly or indirectly concerned with environmental protection, land uses, coastal and urban development, etc. seems quite sufficient although for its proper implementation what seems to be needed is:

a) a more effective monitoring/enforcement system; and

b) certain additional legislative and institutional reforms and measures for regulating land ownership patterns, particularly in the agricultural sector and generally contributing to investments attraction and proper use of natural resources.

6.1.3. Inclusion of Existing Projects into the STD Option

There is a number of various studies about the Fuka-Matrouh area which are concerned with the capabilities of the region as well as the opportunities and issues that can contribute to or constrain the region's development. Those ideas can fit into the STD option and, therefore, have to be consulted in the future planning processes based on the STD option. The most important ones are "The Plan of the North West Coast Comprehensive Development", "Tourism Development Plan of Ras El Hekma" and "TDA Study for Tourism Development in Ras El Hekma".

"The Plan of the North West Coast Comprehensive Development"

This plan was conducted by private consultants for the Ministry of Construction, New Settlements and Land Reclamation. The final report was accomplished in March 1986.

The main recommendations that can be drawn from this comprehensive development plan are as follows:

1. Provision of about 19,000 employment opportunities up to 2001.
2. 700 Million L.E. as total investments.
3. 100 million L.E. as added value resulted from the proposed economic activities.
4. The agricultural and animal husbandry are the main economic activities that would be dominant in the study area.
5. About 70 % of the total investment would be in the agriculture and tourism.

[19] The relative low investment flow to the region by central government may also be attributed to the region's small population size.

It should be noted that the plan takes into account the flexibility, funding resources and balance growth of the various economic activities according to the capabilities of the study area.

"Tourism Development Plan of Ras El Hekma"

This study was conducted by a private consultant for the Ministry of Tourism in 1988. The main conclusions of the plan are as follows:

1. There are certain areas within the study area which can be efficiently used as tourist areas. These areas include: Ras El Hekma, Bagouch and Hawala.
2. The areas located under the contour line of 100 meters are generally arable lands. The plan suggests that the areas located over the contour line of 100 meters are suitable for grazing activities which can be widely developed through the study area (Ras El Hekma).
3. In spite of the establishment and development of the industrial activities, it seems to be difficulties within the study area which could mainly be attributed to the shortage of power supply. The local handicraft and small business prevailing in the region can be developed.

According to the study of the resources and capabilities of the region, the plan suggests the agriculture and tourism to be the main activities that can be developed within the region of Fuka and Ras El Hekma. Meanwhile, the industrial activities have limited opportunities to be established in the region.

Finally, there are two main objections to this plan: firstly, it has neglected the social aspects of the development, and secondly, the plan pays attention only to the lands located in the north to the coastal road (Alexandria-Matrouh) and does not concern the areas located in the south to the road which actually has development opportunities to absorb various economic activities rather than agriculture and tourism.

"TDA Study for Tourism Development in Ras El Hekma"

Another study about the same area, but concentrated on a smaller area at the Ras El Hekma peninsula was conducted by the TDA. According to this study, tourist demand forecasts for the area of Ras El-Hekma are as follows:

$$NoB = \frac{DoT \cdot NoN \cdot OR}{LoTS}$$

where:

NoB = Number of Beds;
DoT = Demand of Tourist;
NoN = Number of Nights;
OR = Occupancy Rate;
LOTS = Length of Tourist Stay.

Year	No. of beds
1990	1500
1995	1620
2000	1815

2005	2142
2010	2614

It is recommended that the area of Ras El-Hekma should be considered for tourism development of the first grade based on its natural beauty, international reputation and accessibility. Thereafter comes Fuka and the flat area from Sakih Moussa to the well of Atteya in the Ras El-Hekma Bay.

6.2. Physical Structure and Distribution of Tourism Development

6.2.1. Spatial Clustering Model as the Most Appropriate Choice for the Study Area

An appropriate spatial structure and physical distribution of tourism is a very important factor in attaining sustainable development. The attraction of tourist places depends on the way tourism activities and the related infrastructure are spatially distributed and / or integrated within particular physical and socio-cultural settings or territories, spaces and locations.

Specifically, the attraction of **tourist places** depends on certain parameters, such as:

- The distinctive properties and actions the particular locations exhibit and undertake, with regard to supporting efficient, in terms of factor costs and price market differentials, tourism production and consumption patterns;
- How efficiently localities or communities function as settings for particular interactions among different socio-cultural groups of local and visitor populations; and
- How well the particular territory or space manages to sustain and enhance those elements of nature and culture which constitute distinctive traits or assets of local milieu or genius loci.

The proposed spatial structure and physical distribution of tourism development in the study area is based on a model of **spatial clustering** which constitutes an **intermediate choice** between two alternatives: one of over-concentration of tourism, and the other of a complete dispersal of tourism development.

Elaborating on the issue of **tourism clustering**, underlying the chosen model for the study area and focusing on its operational aspects we delineate below its main advantages with reference to the criteria attached to the main dimension of tourism development.

The Economic Development Dimension

From an economic development standpoint the concentration (with proper spatial integration) and diversity/variety of the various branches of the **tourism industry** provides generally **increased multiplier and synergy effects**. Specifically it contributes to:

- A greater efficiency and lower costs of the necessary infrastructure and services, economising also on public facilities needed;
- Generating satisfactory visitor numbers and larger stays which consequently increase viability and ensure increased revenues in the accommodation and

catering sector, as well as in other branches of the tourism industry and commercial supporting businesses; and

- Creating a more stable/reliable/skilled labour force and better quality local services.

The Environmental and Socio-cultural Dimension

Among the various positive effects the concentration of diverse market segments and tourism's superstructure and infrastructure could bring about the following are selectively outlined:

- The potential for enhancing various forms of interaction between hosts and guests, as well as for developing new or upgrading existing facilities, traditional products and activities; and
- The contribution such a clustering could have in conjunction with an appropriate system of travel itineraries (outlined below) to substantially preventing the dispersal/sprawl and environmental (natural resources) degradation.

The Management/Marketing/Promotional Dimension

The rational design and achievement of such a spatial pattern of tourism development could contribute to an easier management and control of tourism supply and services provided (leading also to better customer satisfaction) as well as to an increase of the synergistic effects (and viability) among certain of the provided attractions.

The proposed physical distribution of tourism development, based on the spatial clustering model, consists of two main components analysed in following chapters:

- The spatial configuration pattern of tourist superstructure (accommodation) and infrastructure (according to T.P. lines 1 and 2 – See 5.4); and
- The Network of Travel Itineraries.

6.2.2. Feasible Zones for Tourism Development According to GIS Suitability Analysis

Apart from general proposal for the spatial distribution of tourism development, it is necessary to locate more precisely the zones appropriate for the realisation of investment projects. That task was done by Geographic Information Systems (GIS) which have been based on all possible and available data on physical and socio-economic aspects of the Fuka-Matrouh area. The developed GIS contains specific data based on topographic maps, satellite image analysis, and field surveys. Each of the layers in the geographic database contains specific information required for site suitability analysis.

In this section, the analysis process is described briefly, starting with the identification of the objectives and criteria to be used, e.g. physical, legal, and environmental criteria. This is followed by a spatial land suitability analysis in order to identify potential areas suitable for different uses.

Criteria for Site Suitability Analysis

The ultimate objective of the suitability analysis is to identify suitable sites for new tourism development in the study area. Suitability depends on the characteristics of the

site itself and on the locations of other facilities, as well as other requirements to minimise negative environmental impacts.

Specific sites will be selected if they meet pre-determined requirements, i.e. suitability criteria. The aim is to select areas that meet all or most criteria to the greatest extent possible and accordingly provide a priority listing of selected sites.

The legal and environmental criteria include buffer generation. Buffer generation is a geographic operation used when the analysis requires the identification of the areas surrounding geographic features. Buffers are used mainly to protect natural features.

The legal criteria used in the suitability analysis, based on Egyptian laws, include:

1. Location of any construction must be beyond 200 m beach set back of the shoreline, i.e. according to Environment Law No. 4/1994.
2. Development must be set beyond 50 m of highways road shoulders, railways, and major roads to avoid accidents, noise, and pollution hazards.

Other environmental criteria, suggested by the working team include:

3. Sites must be beyond 50 m of historical sites.
4. Sites must be beyond 50 m of wadies and wells.
5. The type of soil is an important criterion. It is necessary to choose soil types suitable for each activity of agriculture and pasture. Uncultivable soil will be then assessed for its suitability for tourism development.
6. Slope suitability is also an important criterion. Slopes for construction purposes should not exceed 10%.

According to these criteria, areas suitable for various uses are identified in terms of location, area and general characteristics, and after that shortlisted to those which are feasible for tourism development also from the economical point of view,[20] as shown on Figure 11. The listing of the areas was based on the merits of each selected area for tourism development, e.g. frontage of the sea and accessibility. Accordingly, the priority list of the selected areas was set as follows:

Area Number	Priority	Development Phase
1	First	First Phase
4	Second	Second Phase
6	Third	Third Phase
2, 3, 5	Fourth	Fourth Phase

The areas number 2, 3 and 5 will be feasible for development as a fourth stage when access to the beach is provided.

The carrying capacity for tourism development of the beach areas was estimated between 15,000 and 75,000 persons depending on the quality of the accommodation establishments, what fits into the general estimation of the beach carrying capacity for the whole study area between 40,000 and 50,000 for the new establishments and

[20] That includes only areas north from the Matrouh-Alexandria motorway, i.e. areas close to the coastline.

between 80,000 and 100,000 together with the existing "tourist resorts" and those under construction.

Some recent experiences have shown that beach capacity does not need to be the only limiting parameter in the total tourism carrying capacity even for the predominantly sunbathing destinations regardless of the quality of the accommodation establishments. It is especially a case in urbanised areas with a lot of entertainment, sport and shopping facilities and where there are various possibilities for excursions and other forms of activity outside the accommodation objects. The modern tendency to use hotel/tourist resort pools instead of natural beach and to avoid long exposure to the sun are also important factors that reduce pressure to the coast.

Nevertheless, it has to be mentioned that some of the existing "tourist resorts" (holiday homes) are built outside feasible areas, and it is likely that some new commercial capacities can also be built outside those areas. It is happening because closeness to the coast and to the motorway is still more important than other factors due to lower investment costs and overall image of the Fuka- Matrouh study area as primarily beach destination. Therefore, it is not likely that in the near future there will be serious interest of possible investors to use the interior of the study area.

6.3. Tourism Accommodation Capacities and Their Structure

On the basis of the overall maximum accommodation capacity levels (80,000 to 100,000 beds) and for mainly new capacities (40,000-50,000 beds) defined in the STD option (Section 5.4) as well as certain conclusions of the preceding analysis, we are suggesting a broad spatial configuration pattern of accommodation for the study area.

A more detailed spatial configuration of tourist accommodation should follow and relate to specific land-use plans and policies, i.e. detailed evaluation of the existing spatial distribution patterns, and final ICAM proposals. Based on the suggested broad spatial configuration pattern, we should emphasise the following:

- In both cases, location-wise tourist accommodation should be functionally/ /organically (regarding socio-economic inputs) and physically (regarding technical infrastructure) related to, or integrated within the existing towns or settlements' network; and
- Accommodation should concentrate in specific zones of tourist development potentially identified or determined in the general and tourism-specific Land-use Plans avoiding the sprawl of accommodation units along the coastline or the uncontrolled linear development of "independent, self-serviced" tourist settlements.

	Number of beds	**Main accommodation types**
Marsa Matrouh - Fuka Study Area		
Marsa Matrouh urban Area	25,000 - 30,000	Mainly hotel complexes fully equipped with supporting infrastructure facilities and services to cater for diverse activities

Area (coastal + inland) between Marsa Matrouh and Fuka	15,000 - 20,000	Different accommodation types: hotel units or complexes, camping sites, tourist resorts (with specific lodging forms)
T O T A L	**40,000 - 50,000**	

Table 4: Spatial distribution of Tourism Superstructure (Maximum capacity levels and broad types of accommodation)

A properly designed and operating Network of Travel Itineraries System (N.T.I) contributes to mitigating problems of seasonal over-concentration (wear and tear of infrastructure), or over-capacity and substantially prevents the degradation of environmental resources. It also contributes, through the **organised spatial distribution** of visitors over the study area to a more equal distribution of socio-economic benefits derived from tourism.

The proposed N.T.I.[21] is based on the defined structure of the T.P. and market and the envisaged long-term development of the infrastructure/transport networks (see also Section 6.5). It consists of two main types of travel itineraries:

A. Short range tours (regarding time and spatial coverage) or trips with a single or a few destinations, consisting of day excursions, or overnight/weekend visits to specific attractions or for particular activities.

These trips have usually one "base centre" and may be of a cyclic/full orbit type, or of a single/partial one (same route or path of return). Examples: with Marsa Matrouh or Siwa as "base centres/camps" short day trips to coastal attractions west of Matrouh (e.g. Al Abiad, Agiba) or to attractions surrounding Siwa (Khamish, Bilad Al Rom, Doric Temple, Behadin, etc.).

B. Intermediate and **long range** or multiple destination trips, consisting mainly of 3-4 day excursions with a particular thematic concept (e.g. touring western desert/Quattarah depression) or encompassing visits to diverse cultural and natural attractions.

The major centre of the entire N.T.I. is Marsa Matrouh, where the majority of foreign tourists arrive today and in the future by plane or through Alexandria and Cairo. Apart from the majority of the necessary infrastructure and services (hotel chains offering organised trips, travel and car rental agencies, etc.) concentrating in Marsa Matrouh, it seems expedient to establish here a special "Touring Planning and management Centre" providing pertinent information to visitors, as well as managerial/operational support to the network (e.g. suggesting ways or re-routing visitors in cases of bottlenecks or when threshold levels are reached).

The second in importance "base centre" is Siwa, providing services for both types of travel itineraries particularly during the winter, while two more smaller (for short range trips) "base centres" may be envisaged in locations to be chosen among the centres of Fuka, El Dabba, Sidi Abdel Rahman and El Alamein.

[21] The N.T.I. is here very broadly indicated. A special study should be undertaken to define in detail such a network.

With regard to the **capacity** of the entire N.T.I and assuming that one in four tourists visiting the area during a peak season's day will be touring, we have a travel itinerary capacity of 25,000 people, including those for whom the Fuka-Matrouh area and its wider region is only part of a multi-region itinerary within Egypt.

6.4. Tourism Services and Support Activities

One of the crucial characteristics of the economic situation in the area regarding tourism is a dependence on the beach tourism and at the same time a limited space for such development due to already high pressure on the coast by so-called "tourist resorts". In such circumstances, various and well equipped support activities and services play an extremely important role in order to disperse tourists from the beaches. At the same time, the area by itself cannot offer many possibilities for the desirable dispersion, due to relatively weak attractions outside beaches. Furthermore, there is a strong need to import almost everything from the other parts of Egypt or abroad, because the area does not offer many goods that can be sold directly to tourists due to its physical characteristics.

The actual situation regarding services and support activities is much worse than in other parts of Egypt, because the area still does not have a strong tourist image. Considering extreme importance of supporting activities in order to attract tourist investments in the area and adequate efficacy, certain measures have to be undertaken in order to stimulate the development of those activities, especially outside coastal tourist areas. That includes:

- various shopping possibilities, including big shopping centres (mainly in Marsa Matrouh, but also in some other places, such as Garawla, Hawala, Abu Hagag and close to tourist areas);
- various sport and entertainment activities outside coastal areas, especially for children (amusement centres, playgrounds, etc.);
- rent-a-car service and adequate local bus services between Marsa Matrouh and main tourist areas;
- adequate information services in foreign (English) language in Marsa Matrouh and on a smaller scale in other important settlements and tourist areas, including adequate signing in Marsa Matrouh and other points of interest;
- adequate interpretation and informational tools in order to stimulate tourists to explore the whole region (maps with marked tourist attractions, interpretation panels in front of key tourist attractions, etc.); and
- organisation of special events using key attractions like the old Egyptian history (Cleopatra beach, Ptolemeus fleet), the Second World War history, and the local Bedouin culture (Folk dances, special events in the desert).

It is also important to adapt as much as possible local food production and crafts for tourism purposes in order to avoid high transport costs either to the area (especially for tourists), or from the area. Such policy can at the same time increase the profitability of local production and offer more employment possibilities, especially for less qualified persons. Many actions in that direction will, therefore, be included in the following final chapter.

6.5. Tourism Development Programme Proposal in Space and Time

On the basis of the preceding analysis, the proposed programme of tourism development is synoptically presented below, outlining its three main interdependent directions of planned intervention over time and space.

Direction A: Tourist Product Development Plan

This Plan of Tourist Product Development consists of **three main components** of relevant policy actions which are co-ordinated in time and space to attain the envisaged Tourist Product.

Component A1

This encompasses two main development targets:

- The **qualitative upgrading** of the existing accommodation potential and of the tourist infrastructure in the area; and
- The development of **new tourist superstructure** or accommodation types according to the envisaged Product Lines Structure (Section 5.4).

With regard to the first target, the **upgrading** has to do with the accommodation's /buildings physical renewal and mainly with enriching the existing and providing new supporting facilities (related to catering, shopping, sports, entertainment) to the accommodation units. Such facilities should be planned in conjunction with those proposed and encompassed in Components B and C below.

With regard to the second target, the **new accommodation** should be realised progressively according to a specific long-term Accommodation Development Programme. The Programme's main objective is the functional/organic (population, employment) and physical (land uses, technical infrastructure) **integration** of new accommodation within the urban/ekistic and settlements fabric, avoiding incremental development. The Programme should follow the previously suggested (Section 6.2, 6.3, 6.4) measures, as well as those proposed in the following Directions B and C.

Component A2

This focuses on diversifying the T.P. (and tourist consumption opportunities) by developing new or alternative tourism activities related to and utilising the region's environmental attractions. The combined development of infrastructure (facilities and services) with measures (land-use regulations) to protect/enhance the environmental resources should be directed from a priority of time and spatial orientation point of view towards the following areas:

- **The Coastal Areas**, giving priority to certain beaches East (e.g. Ras Hawala, Ras El Hekma) and West (e.g. Al Abiad, Agieba) of Marsa Matrouh and providing facilities for diverse beach/sea activities, within specifically delineated recreation and park zones connected with a series of linear "green belts" in such a way as to enhance the "open space" character of the entire coastal area.
- **The Siwa Oasis** wider area (including the Quattara depression) focusing on the development of a multifacious set of facilities/services for attracting health/therapeutic tourism (Siwa as a spa centre), ecotourism, cultural and adventure travel (Siwa as a centre of safari expeditions/desert travel).

- **The Marsa Matrouh** urban area as the region's major all-year around tourism destination, providing particular facilities related to congresses/conventions, exhibitions, festivals, athletic/sport activities, as well as to health/fitness. With regard to the latter, one should examine the feasibility of establishing in Marsa Matrouh a centre of thalassotherapy (using mineral-rich sea water and whirlpool baths) separate or within a particular accommodation complex.
- **Specific locations** all over the area with development priorities on restoring/rehabilitating and extending the infrastructure related to historic sites (e.g. Abu Mena a principal attraction as a pilgrimage centre), monuments/temples, etc.

Component A3

This pertains to creating those facilities and services needed for the development and operation of the entire set of travel itineraries outlined in Section 6.2 (see also Section 5.4). Most of these facilities and services pertain to:

- The construction of specific **tourism networks** (road/cycle/camel/walk) following the spatial distribution of scenic attractions and specific tour circuits of the countryside; and
- The development of specific **services** (e.g. information centres, car rentals touring/coach companies, etc. separate or liaised with accommodation enterprises) concentrated in particular locations, mainly in Marsa Matrouh, but also in Siwa and certain (2-3) smaller "base camps" for short range trips (e.g. choice between Fuka, Sidi Abd El Rahman, Hawala, El Alamein, El Dabba).

Direction B: Tourism Specific Policy Measures

The tourism specific policy measures relate to both Direction A (above) and C (following) and are grouped into two main categories outlined below as follows:

B1 Investment/Financial Policy Measures

Generally/world-wide the promotion or encouragement of tourism investments in developing countries depends mainly on the public sector's efficacy and certain interrelated factors, such as:

- The type of legislation and the functionality of regulatory regime;
- The strength, coverage (hotel sector alone or travel industry as a whole) and influence of incentives or the various financial sources: international, multilateral/bilateral grant loans and aid, government public financing, commercial and development banks; and
- Existing regulatory frame concerning foreign ownership (land, property) and foreign exchange regime.

The promotion of private sector investments in the study area will greatly depend on the policies adopted and promoted mainly by the relevant central government authorities; on the entire investment regime/climate which has been considered by certain analysis[22] favourable for Egypt as a whole; and on tax exemptions (up to 10

[22] Economist Intelligence Unit: International Tourism Reports, No 2, 1996.

years), the unrestricted ownership of capital, reduced import duties and freedom of profits repatriation.

The key policy measures that should be adopted for the future development tourism in the Fuka-Matrouh area must be geared towards:

- Securing sufficient/adequate **public financial resources** for providing the basic infrastructure supportive of tourism development (see Direction C below);
- Encouraging **joint funding** between the **government** (central/regional) and the **private** sector, or financing jointly (syndicated financing) by the state-owned and private banks particular projects or programmes pertaining to: i) education/training, ii) developing/promoting heritage (cultural/natural) attractions and resources, and iii) innovating/upgrading or establishing new services and infrastructure in specific areas (travel-transport-marketing);
- Securing long-term funding from specialised **international financial institutions** to support, selectively, the development, by private sector of specific (spatially defined) integrated tourism resorts or centres and, in relation to the above; and
- Establishing, at the Governorate level, a Tourism Development Corporation, related to the existing "Regional Committee for Planning and Development of Tourism" and with a major aim to attract and use investments and secure multilateral or bilateral aid/grants/loans by international Agents (UNDP, WTO, IFC, the World Bank) in various forms in order to develop specific tourist infrastructure in the Fuka-Matrouh area providing serviced sites on which particular types of tourism (e.g. resorts) develop[23].

B2 Managerial/Educational Policy Measures

Among the various managerial policy measures pertaining to private and public tourism agents we are emphasising those pertaining to **marketing** and the environment or specifically **environmental auditing.**

The Governorate authority responsible for tourism ("Regional Committee for Planning and Development of Tourism") in collaboration with the central authorities (Ministry of Tourism / TDA) should develop a **Strategic Tourism Marketing Plan** for the entire area. On the basis of such plan the authority should establish an overall budget for marketing and the appropriate marketing mix: budget allocation/distribution based on a concrete set of marketing tools (promotion, prices, new products development, etc.).

Environmental Auditing (E-A) aims at controlling overcrowding over-development (following CCA guidelines) and pollution and at ensuring the areas ability to cope with visitors. Various types of E-A applied equally well by both private and public agents can reduce or prevent environmental damage and enhance quality for both tourist firms and destination authorities. E-A is a major component of an environmental management system for tourism enterprises acting to reduce negative environmental impacts of their activities. It must be undertaken regularly (to check the firm's compliance with the adorsed objectives) and it can result in commercial benefits, e.g.

[23] A similar paradigm has been adopted on the Red Sea coast, where an established public sector agency is responsible for the overall design, the management of the World Bank's loan, the co-ordination of commercial Egyptian companies, for constructing specific projects, and international companies (e.g. Sheraton, Robinson's Club) for operating the resorts.

cost reduction from waste minimisation, and safety/protection for both employees and visitors. The adoption and use of an E-A system must be seen as a long-term objective; it is established on a voluntary basis and is based on an appropriate and widely accepted legislative framework[24].

Equally important are educational policy measures that should be undertaken by both **public** and **private** agents in order to achieve certain objectives, such as:

- Upgrade existing inadequately trained, or new personnel, in the hotel/catering branch or other branches of the tourism industry;
- Support traditional professional skills and practices regarding local productive and socio-cultural activities (handicrafts, cuisine, etc.) to promote increased local inputs (and benefits) in the production and consumption of the tourism product; and
- To promote environment friendly behaviour and/or raise awareness sensitivity of both locals and visitors contributing to reduction or avoidance of negative environmental effects (e.g. the littering of beaches or depletion of vegetation and dunes, etc.).

The design selection and implementation of specific programmes (professional training, environmental awareness or specific programmes) should consider the above objectives - setting priorities according to a certain scale, as well as criteria of cost-effectiveness taking into consideration that tourism training institutions require substantial human and financial resources.

Direction C: Broader Context of Policy Measures

Tourism's sustainable development is inseparable from the development of other economic and social activities (public or private) in the entire Governorate area. Obviously, tourism and environmental quality are strongly affected by the size/amount, intensity and the type or quality of certain other activities taking place, such as agricultural, industrial/commercial, construction and building, cultural and entertainment, health and educational. Due to the multifaceted nature or idiomorphy of tourism an integral tourism development programme should relate to and materialise in parallel and in conjunction with programmes and policy measures of other sectors. Selectively, we outline below those intervention policies and measures considered to have the greatest synergy effects on tourism.

C1. Technical Infrastructure Networks

With regard to the overall technical infrastructure networks among those considered to have development priority are the transport (rail/road/air) networks (discussed earlier in Section 6.1), the completion of the construction of the sewage collection and treatment system, particularly in the Marsa Matrouh area, as well as of the drinking water pipeline from Alexandria covering the major built-up areas.

Regarding the **water resources** of the entire Governorate area a longer-term objective is the preservation, enhancement and rational use of water resources (by different user

[24] E-A, even today, is a minority business management practice within the tourism industry of developed countries; in the United Kingdom, for example, it is confined to new large firms.

groups); and focusing on controlling/limiting the over-exploitation or overuse of water resources, particularly in certain areas (e.g. in coastal aquifers prone to saltwater incursion). To this end, it is suggested to implement a specific programme which indicates the necessary projects/infrastructure and prescribes all pertinent regulation/guidelines (e.g. feasible/economic irrigation methods, drilling of wells, etc.) for using and managing the water resources.

C2. Environmental Protection/Enhancement and Land-use Management

Together with establishing a branch of the Central Environmental Affairs Agency at the Matrouh Governorate, the establishment of environmental monitoring stations in appropriate locations and of a research centre (collection/analysis of data, design of specific policy measures for environmental protection) are considered priority measures for the area.

Also, as a priority one should consider the establishment of **new natural reserves**, apart from the existing one (Al Omayed) and after investigating their feasibility and Terms of Reference (Law 102/1983). Within a wider context of considering the importance of natural/environmental resources for tourism, one could suggest the design and implementation of a **regional vegetation strategy**. This involves, among others, the selection of the most suitable indigenous species (grasses, legumes, shrubs, herbs, trees, etc.) for their preservation and further development in conjunction with:

- The agricultural sector's production targets and policy measures (e.g. grazing control measures); and
- The provisions envisaged in the ICAM plan with regard to the zonal division (3 zones) of the study area.

The issues of land-use management, briefly discussed in Section 4.4 within the context of land-use planning policy are crucial for the proper integration of tourism within the area's environment. However, the idiomorphy of tourism suggests that, generally, the management of tourism related land uses should be fully integrated within broader Land-use Management Plans, for example, urban tourism land uses within a Town's Land-use Management Plan (and following the related town planning/building regulations) or the tourism's coastal land uses within the ICAM plan. In particular cases of site planning (e.g. resort types of tourism development) land-use management should come under particular regulations through specific legislative acts setting conditions or requirements for enacting specific control measures by the relevant authorities.