ECOTOURISM AND THE MANAGEMENT OF CULTURAL RESOURCES OF MARSA ALAM-WADI GIMAL REGION

Ecotourism promises to be of one of the main tourist growth areas in Egypt following the current interest in new tourist activities and the development of infrastructures, such as airports, hotels, and roads to facilitate and encourage tourist visits to Egyptian deserts, hills, and coastal regions.

Ecotourism, as responsible and sustainable tourism, with beneficial effects to tourists and local communities, and as a means to visit, enjoy, study, and reflect upon the wonders of nature and its intricate workings, is so far removed from traditional tourism in its philosophy and activities to warrant radical programmatic changes. In this section, a model of an ecotourism program is offered to highlight some of the elements of what is needed if ecotourism is to flourish. If such programs are not implemented as soon as possible, ecotourism will soon become the worst development in the history of Egyptian tourism not only as revenues will dramatically dip after a temporary climb, but because by that time, the pristine beaches, wadis, oases and deserts long protected from adverse human impact will be devastated by garbage, sewage, off-road recreational vehciles, and vandalism. Evidence for such destruction in some of the most valuable and fragile areas is already in sight, e.g., in the Marsa Alam-Wadi Gimal region, chosen here as a pilot project to showcase a model of sustainable ecotourism and cultural tourism.

In this section, a brief description of the natural and cultural resources of Wadi Gimal is followed by an outline for a project for the sustainable development of the Wadi as a basis for future ecotourism in the region. This document is based on investigations by Prof. Fekri A. Hassan (University College London) which aim to develop a plan for the sustainable development of the natural and cultural heritage resources of Wadi Gimal and Marsa Alam region. Field trips to the area were supported by the Egyptian Geological Survey and the Tourist Development Authority. A UNESCO SPPD document has been submitted to the United Nations Development Programme with the aim of producing a project document for the implementation of the cultural and environmental resources management plan of the Wadi Gimal, Red Sea coastal region.

The Wadi

The wadi opens to the coast at 24° 40' N 35° 5.5' E., and extends inland to about 85 km, covering a total area of 1840 km^2. The slope is about 11.9 m/km, from north to south then north-east at 45°. The wadi is large and with an average rainfall of 46 million m^3 per year. 23.5 million m^3/year of water runs from the wadi to the sea. The side walls of the wadi are mainly of granite and metamorphic rocks which trap the water allowing vegetation to grow and creating a diverse habitat. The floor of the Wadi is largely covered with sandy-silt. The wadi floor has a shallow veneer of recent deposits on account of high velocity floods which effectively remove deposits toward the coast, with the exception of a few protected areas where a low terrace is preserved. Near the coast, higher terraces of gravel rim the coastal plain dating to periods when rainfall was much higher, surrounding the erosional cut that lead to the Wadi. The Wadi forms a delta at the sea side in which many seeds are allowed to grow and flourish. This delta area has the only Dom tree left on the shore of the entire area.

Wadi Gimal Island

The island is located at 24° 48' N 35° 10' E and is moderate in size (about 3 km^2), located about 5 km away from the shore line. It is spindle shaped with the south end more pointed. The island is formed mainly of uplifted coral, about 5-10 m above sea level, and the western side has a long sandy beach. Mangrove trees grow in the south-eastern corner of the island in a pocket of old reef. A large number of coral patches are located at the eastern side, while the western side faces a navigation channel and is more rocky with fringing coral. A large area of submerged reef is located slightly to the north of the island.

Biodiversity Resource Base

- ***Coral reefs:*** As a result of the direction of the prevailing wind (north-east to south-west), the islands are highly exposed on the North and East coasts, which gradually decreases going South along the coast. The degree of exposure is clearly reflected in the coral coverage and the width of the reef flat area. The entire West coast is completely protected and experiences very little water movement, except when occasional swells from the West or North occur. The coral patches on the West coast are 100% alive and with high species diversity. The coastal fringing in the area of Ras Baghdadi is

moderately developed and the corals coverage increase in both north and south directions away from the flood passage. The coral coverage percentage ranges between 45-65% around the islands to 30-45% on the coast. The number of coral species ranges from 23 to 35 species per site. The sea floor in between the island and shore consists of a coarse sand interrupted in many areas with seagrass beds and coral patches.

- ***Seagrasses:*** The major seagrass bed in the area is located at the north-west side of the island. This bed is of mixed *Halphila stipulacea* and *Thalassia hemprichii*, growing on the sandy area. This seagrass bed accommodates a large number of invertebrates, especially molluscs. The density of plants per square metre in this bed is high (about 2200 p/m^2). The readily available food supply and the less disturbed area makes this seagrass bed an ideal feeding area for dugong (none were seen but remains of bones on shore suggests the presence of the species in the area).

- ***Fish and marine megafauna:*** Almost all of the common species of reef fish are found along the entire reef areas around the island. Groupers are the most abundant species of fishes in the area. Many of the pelagic or open water species have been fished from the area (28 species). Large snappers and pelagic species such as jacks and mackerel can also be expected on the outer rim of the reefs. The fish population as a whole is in a healthy condition without much indication of over-exploitation. Two species of turtles, green turtle and hawksbill turtle, and dolphins are commonly seen swimming around the island. Two carapaces of hawksbill turtle were found on shore at Ras Baghdadi.

- ***Birds:*** Many species of bird (35 species) have been recorded from the mangroves on the islands, the vegetation on shore and inside the wadi. About 50% of these birds were passing through the area during migration. At the remote side of the island nests of Brown booby and Osprey were seen.

- ***Mangroves:*** The mangrove stand on Wadi Gimal island is relatively limited but very healthy and tree density reaches 50% of the studied quadrates. The trees ranged in length between 3-4 metres.

- ***Terrestrial Flora and Fauna:*** The terrestrial flora is represented inside the wadi and on the coastal plain with at least 38 species, including 14 herb, 17 shrub and 7 species of trees. The fauna studies included 20 species of reptiles and 14 species of mammals. Among the species recorded were

Capra ibex and *Gazella dorcas*, the two most endangered species on the coastal area.

Necessity/Justification of the Project

The mineral resources and rocks of the Eastern Desert have been exploited since prehistoric times. In addition to exotic rocks used for vases, bowls, and ceremonial palettes, the eastern desert hills were of significant importance for their gold and copper resources. The oldest map in the world is of one of the gold mining sites. These sites are still pristine. Whole mining villages that span the entire history of mining from its humble prehistoric beginnings (with the oldest middle Palaeolithic flint mining in the world located in the limestone hills near Qena) to the complex gold mining operations in Ptolemaic and Islamic times. Houses, work stations, water management systems, forts, and temples document this long and rich history.

With the advent of government and entrepreneurial development plans, with Hurghada already a fully developed tourist town, the archaeological sites and local inhabitants are already eminently threatened. The area south of Marsa Alam, which has been restricted for military reasons, is now open for development. The onslaught of tourists, given the lack of any archaeological infrastructure in the region and the ad hoc approach to the culture and means of livelihood of the local inhabitants pose a serious problem. Most schemes dealing with local bedouins often revolve around sedentarization, which not only under-estimates the potential role of nomadism in cultural development, but also undermines and threatens the sustainability of a mode of life that has proved to be resilient and advantageous under the harsh conditions of the desert.

The proposed cultural and natural heritage management and development program will combine protection of both cultural and natural heritage (ensures their sustainability) with an economic development program. The latter would include providing jobs and education to the local community as well as opportunities for participating in the management of tourist resources. Tourism is an inevitable outcome of the need to make money and the coast has already been adversely affected and it is feared that it will eventually destroy the fragile natural habitats in the wadis and the unprotected archaeological sites of mining, etc. The proposal is for 5 years and would include a working group that includes members from various interested stakeholders. A Cultural heritage sub-program would include the documentation, stabilization, conservation, and the development of a plan for visits (paths, vistas, and a visitor's center, etc.). The program would include the training of members of the local community together with trainees from other parts of Egypt and abroad in all aspects of cultural heritage management. Successful trainees (from the community) will then be given the opportunity for further education to assume high-level managerial and research posts.

The economic development program would include the development of a code of conduct to be signed by all concerned parties including the various tourist agencies (to be enforced by the local community and the governor).

The area of Wadi Gimal has been suggested as a world cultural heritage site for the UNESCO listing by the Supreme Council of Egyptian Antiquities during a meeting held at Abu Simbel, and has also been designated as an environmental protected area, and identified as one of CMPA (Coastal and Marine Resource Management Project Areas). The proposed project will start with a focus on that area which is also the one that will be immediately impacted by tourist initiatives. At the coast, Wadi Gimal contains one of the unique mangrove vegetation in Egypt, and is immanently threatened.

Long-term objective

To promote the concept of cultural heritage management in Egypt and to develop an institutional capacity to manage Egypt's endangered cultural resources and cultural landscapes.

Short-term objectives

- Develop a plan for sustainable development of the natural and cultural resources of the region.
- Contribute to the capacity building of the supreme council of antiquities.
- Assist national, governmental, local, and private communities in coordinating their activities within a sound development plan.
- Develop a program for public awareness of cultural heritage management and cultural landscape development activities.

One of the local Wadi Gimal herders, the Ababda

To achieve these objectives the following goals are set:

- Identify and document archaeological sites and monuments, and assess their conditions and potential hazards.
- Study and evaluate the ecological habitats of archaeological sites and monuments, and identify threatened and endangered species and localities.
- Identify and document the integrated elements of the cultural landscape using a Geographic Information System (GIS).
- Develop a data base of native strategies and methods of conservation and management.
- Develop a plan to involve local people in the management, monitoring and protection of the ecologically and cultural vulnerable areas.
- Encourage scientific research by Egyptian scholars and researchers from abroad to gain further knowledge and assist with the sustainability of the cultural landscape.

Prospective Beneficiaries

- The local community.
- The Supreme Council of Antiquities.
- Visitors to the region from Egypt and the international community.

Present and Potential Uses

- ***Adjacent communities:*** There is a small fishing village at the entrance of the wadi, mainly inhabited by the Ababda tribe. The population of the village does not exceed 50 persons including women and children. The main occupation of the tribe is fishing during the season and raising sheep and goats on wild grass grazing for the rest of the time. No boats were seen except for the flat bottom *Hori* that are normally used for spreading the nets on the reef. Most of the fisheries and sheep herding yield is used for trading with the nearby city of Abu Ghsoon.

- ***Tourism:*** Very limited number of safari tour operators know about the wadi itself, yet the island is commonly visited by marine safari boats on their way to Zabargad island. Most diving by tourists is now carried out on the western side of the island. Ecotourism with visits to key natural areas and cultural heritage sites (e.g., gold mines, emerald mines, Prehistoric tombs, rockart drawings) can be a major source of revenues.

- ***Fishing:*** The major fishing techniques around the islands are line and gill net fishing. Locals as well as some outside fishermen come to the island during certain times of the year to catch certain species of fish. The real impact of the fishing operation comes from the anchorage of boats. The net mesh and other regulatory measurements are not applied for this group of fishermen. Target species are groupers, snappers and grunts.

- ***Hunting of wildlife:*** This has always been part of the local people's traditional activities in the region. Gazelle, ibex, among other mammals, are often involved. These are caught using classical traps (firearms being rarely available). The quarry is used for personal consumption, while some parts such as ibex horns might be traded for traditional craft manufacturing.

Schedule

First Year	Compilation of data, institutional contacts, Training
	Archaeological Survey
	Ethnography
	Ecological Survey
Second Year	Documentation
	Development of a community plan
	Development of an ecological sustainability plan
	Excavation, Conservation
Third Year	Excavation, Conservation

Analysis and syntheses
Development of an Integrated Management Plan
Preparation for implantation of plans

Fourth Year Design and construct facilities
Train managers and rangers
Curate and document all products of project

Fifth Year Implementation of pilot project.

Expected Major outputs

Integrated managerial strategy of the cultural landscape
Geographic information system database
Plan of local community development
Plan of ecological sustainability
Report on the training programs for capacity building.

Guidebook for ecotourism
Educational material for the public

Report archaeological, ethnographic and environmental ecological survey and investigations.
Cultural heritage development plan
Excavation and conservation of key archaeological sites and monuments

Proposed Action Directions

The proposed area includes the whole of Wadi Gimal including the wadi, Ras Baghdadi shoreline area and the island. The total proposed area approximately about 270 km^2. The major action goals for this area and which form the objectives for indicative zoning presented subsequently are:

- **Identify and promote ecologically sound activities.--** One of the critical functions of the establishment of a protected area on the coast is to regulate development activities in the region to ensure their compatibility and ecological soundness. Compatible economic activity areas need to be identified and promoted.
- **Involve local people in the management and running of the Protected Area**.-- An essential theme in integrated managing is to involve the local

people. Involvement and consultation should take place at all levels and stages, from strategic planning to implementation. Local people should also be involved in the implementation and monitoring activities.

- **Adopted and adapt native conservation systems**.-- Native conservation systems have been in place for generations, and have apparently proven effective in maintaining the local environment. It is recommended that such systems should as much as possible be maintained and augmented.

- **Increase the capacity of the Protected Area staff.--** One of the main obstacles facing the implementation of any management action is the severe shortage of trained staff. Professional, motivated on-the ground staff are essential for achieving the objectives. Staff need training in various disciplines, and priority should be given for the recruitment of local or regional individuals.

Proposed Zoning Plan

- **Buffered Environmental Management Zone:**
  This represents the area in which all human activities are conducted under environmental guidelines.

- **The Park:**
  This represents the area in which ecosystems, cultural tourism, and/or public education are emphasised. It mainly includes the area surrounding the main wadi stream on higher elevations and area around the islands (extends 1 km from the reef edge).

- **The Reserves:**
  These are more likely to be called *core* areas which incorporate the *"critical marine habitat"*. In many cases this area could include the island and the wadi delta and main stream, which include more than one type of habitat. During the selection of the site for reserve or park core area, centralisation of this area should be taken into consideration.

Range Management

On the surface, the minimal biological needs for managing rangelands appear simple and straightforward. They are:

(1) an estimate of actual production

(2) an estimate of potential production

(3) an understanding of the mechanisms for moving from actual to potential production. In reality, each of these areas is complex. There is a paucity of

data and sometimes even ecological theory is lacking, especially in arid regions such as the Arabian Gulf.

Soil should be surveyed in as much detail as possible. Two factors are important to identify:

(1) the soil's ability to produce plants

(2) its stability and resistance to grazing use. The pastoralist is most often interested in increasing feed for his livestock, but the long term productivity is directly related to the soil's ability to resist erosion.

The survey of grazing animals will include livestock by species, class, and age. Similar information on native animals and the season when each uses a particular plant community is important.

Suggestions and recommendations for developing and improving rangelands in Wadi Gimal are listed below.

1. *Plant Research*

   (a) Conduct inventories, surveys and monitoring to show actual and potential range productivity.

   (b) Evaluate grass response to grazing and stress.

   (c) Identify, preserve, and develop superior germplasm.

   (d) Collect available information and a bibliography on range plants

2. *Social/Economic Research*

   The arid rangelands of the world support a human population that is either nomadic, semi-nomadic or sedentary. The quality of life for this population must be sustained by stopping further range deterioration, halting or reversing desertification, and addressing the social needs of the people.

   The national and regional heritage of people must be preserved. This can be accomplished by a better understanding of the needs of migratory people, the recreational needs of city dwellers, and the aesthetics of the landscape and environmental quality.

3. Education and Extension

   Establish range and animal training centres for Bedouins.