

6 Biodiversity

6-a Introduction

The Arab Republic of Egypt (ARE) has paid special attention, over the past years, to issues of natural resources protection. It has also established a system and legislation for conservation of natural heritage under directives and support of the political leadership, emphasizing integration of development sectors with environmental protection and natural resource conservation for the benefit of the present generation and the generations to come. In 1983, law 102 of Protected Areas was issued, followed by the declaration of Ras Mohamed, South Sinai, the first protected area in Egypt. By 2003, Egypt had established 24 protected areas, extending over 10% of the total area of Egypt, and approaching the Global target.

Egypt has been in the vanguard of countries signing the Convention on Biodiversity (Rio 1992), which it ratified in 1994. It developed the National Biodiversity Strategy and action plan in 1997, with the participation of decision makers, representatives of the People's Assembly and NGOs. Law 4 / 1994 on environment protection; constituted a supportive national legislation helping to fulfill Egyptian obligations to the Convention on Biodiversity.

Like most countries, Egypt has faced many challenges due to technological development and interlinked global ecosystems, as well as, revolutionary genetic engineering, free trade, growing world tourism, along with limited financial resources. Therefore, Egypt has considered international cooperation in nature protection as a top priority, which played a pivotal role realizing intended goals.

6-b National Policy and Strategy

Nature Protection Policy

The government of Egypt has adopted a clear policy for protecting the rare natural wealth and its unique biodiversity and to serve as the basis for achieving economic and social development, providing ecological balance, and ensuring a better future for our citizens. The Nature Protection Policy relies on the following principles:



Elba Protectorate

- Conserving natural resources for Egyptian, both present and future generations.
- Conserving national biodiversity as a basis for sustainable development and achieving integration with the different sectors of the state.



Taba Protectorate

- Establishing a representative National Protected Area Network including all vital ecosystems, and endangered species.

- Employing economics-based, scientific management of protected areas, and supporting ecotourism in Egypt.
- Implementation of relevant legislations and international and regional agreements, in addition to raising ecological awareness.
- Cooperating with international organizations and donors to implement projects in protected areas.

National Biodiversity Strategy (1997-2017)

The National Biodiversity Strategy was developed by almost 5000 Egyptian decision makers, scientists and experts in cooperation with ministries, governates and universities. It was discussed in a national conference. The Strategy was later incorporated in the National Plan of the Ministry of Planning as a basis for sustainable development of natural resources in Egypt.



Red Sea

Strategy's Main Objectives

- Management of natural resources, and the numerous other elements, should be based on scientific grounds in order to ensure continuity of the natural ecological balance and prevent deterioration of ecosystems, and protecting creatures from loss or extinction.
- Developing Egypt's scientific and technological capacity in areas of biodiversity conservation, natural resource de-

Milestones on the Way towards Conserving Biodiversity in Egypt



- Law 102 issued in 1983 on Protected Areas.
- Establishing Ras Mohammed Protected Area in 1983, the first national park in Egypt.
- Developing Ras Mohammed Protected Area in 1989 in cooperation with the European Union.
- Egypt signed the Convention on Biodiversity in 1992, which was ratified in 1994.
- Law 4 was issued in 1994 on Environment Protection.
- Developing South Sinai, Red Sea and Fayoum protected areas in cooperation with donor countries in 1996.
- Adopting the National Biodiversity Strategy and Related Plan of Action (1997-2017).
- Presidential Decree 154 of 2001 State-Owned Land use including protected areas.
- Extending the Protected Area Network over about 10% of the total area of Egypt in 2003.
- Intellectual Property Law was issued and the Biological Safety Law was adopted in 2003.

velopment, and executive and administrative capacities that attain intended goals, and proceeding with research and studies.

- Mobilizing national efforts to conserve biodiversity with all its ecological, biological, and genetic elements, in order to ensure sustained survival and optimal use.
- Setting the plan of action aiming at involving civil society, individuals or NGOs - in Biodiversity Conservation.
- Establishing legislative basis and economic and social incentives that support conservation of biodiversity and sustainable development of natural resources.
- Integrating national action with regional and international action, and utilizing the bulk of scientific and technical expertise concerning conserving resources of biodiversity including gene resources.

Principles of Strategy Implementation

- Biodiversity is ecologically and economically significant, and is a cornerstone of sustainable development.
- Conservation of Biodiversity is a tool for developing natural resources, now

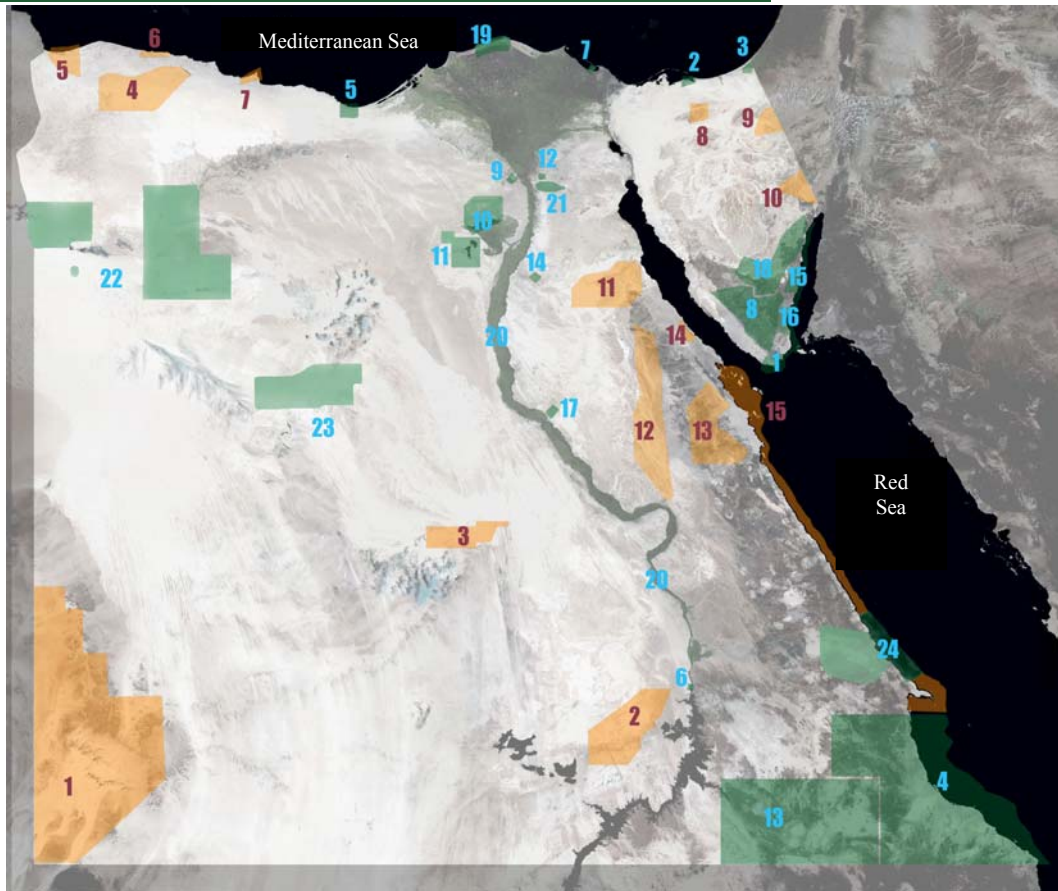
and in the future, for the benefit of sustainable national development.

- Biodiversity is part of Egypt's natural heritage and conserving it is a national and international obligation.
- Successful biodiversity conservation efforts rely on scientific studies and environmental monitoring of internal and external interactions.
- Building of national capacity, implementation and sound management of biodiversity conservation programs and public awareness.
- Implementation of environmental legislations and observing relevant international conventions.

This strategy is translated in five consecutive nature protection five-year plans. Currently, the 2002-2007 plan is underway. The plan includes 20 projects aiming at realizing the following goals:

- Sound management of natural resources with view to striking a balance between development and ecosystems.
- Integrating national action with regional and international action for biodiversity conservation and sustainability.

6-c Present and Future Protected Area Network



■ Current Protected Areas		
1	Ras Mohamed	2 Zaranik
3	Ahrash	4 Elba and Red Sea islands
5	Al Omayed	6 Saluga & Ghazal
7	Ashtum El Gamil	8 Saint Katherine
9	Dome Hassana	10 Qaroun Lake
11	Wadi El Rayan	12 Petrified Forest
13	Allaqi Valley	14 Wadi Sanour Cave
15	Abu Galum	16 Nabq
17	Wadi El Asiouty	18 Taba
19	Burulus	20 Nile Islands
21	Wadi Degla	22 Siwa
23	White Desert	24 Wadi El Gemal - Hamata

■ Future Protected Areas			
1	El Gilf el kebir	2 Kurkur & Dungul	3 Om El Dabadib
4	El Qasr	5 El Saloum	6 El Shuwaila
7	Ras El Hekma	8 El Maghara	9 El Qusima
10	Wadi Gerafi	11 El Geleala El Qebleya	12 Wadi Qena
13	Shayeb El Banat	14 Malahet Ras Shu-qeir	15 The Red Sea
16	Qattara Depression		

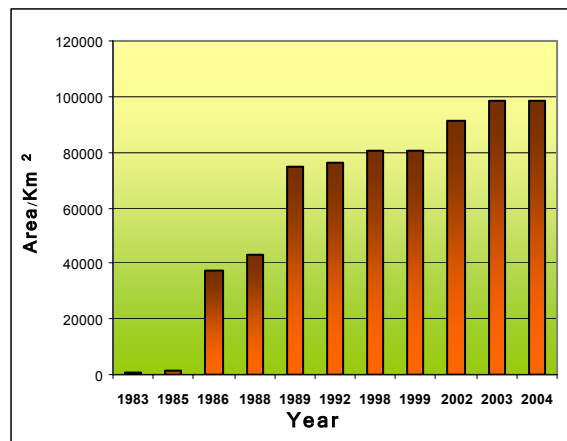
Major international and regional agreements that Egypt has signed

- The African Convention on the Conservation of Nature and Natural Resources (Algiers 1968).
- Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR 1971).
- Convention concerning Protection of the World Cultural and Natural Heritage (UNESCO 1972).
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES 1973).
- Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona 1976).
- Regional Convention on Protecting the Environment of the Red Sea and the Gulf of Eden (PERSGA 1982).
- Protocol on Mediterranean Special Protection Zones (Barcelona 1982).
- Convention on Biodiversity (Rio de Janeiro 1992).
- Biological Safety Protocol (Cartagena 2003).

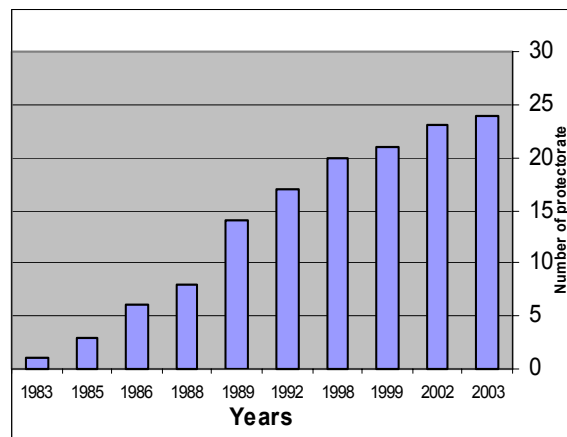
- Developing scientific, technical, managerial and executive capacity for protecting nature.

Development and Classification of Protected Areas

In the light of the National Biodiversity Strategy, 24 protected areas were declared till 2004 extending over 100,000 square kilometers, representing 10% of the total area of Egypt. The Network is due to cover 40 protected areas extending over 17% of the area of Egypt. Out of its firm belief that these protected areas are closely connected with development activities, the government has placed protected areas on the National Land Utilization map issued by Presidential Decree no.154 of 2001; consistent with other developmental activities related to agriculture, industry, tourism, urban development, petroleum, mining, antiquities among others.



Protectorate Area Development until 2004



Development in Declared Protectorates

The Current Protected Areas Fall Under Four General Ecological Groupings

Marine Protected Areas (5)

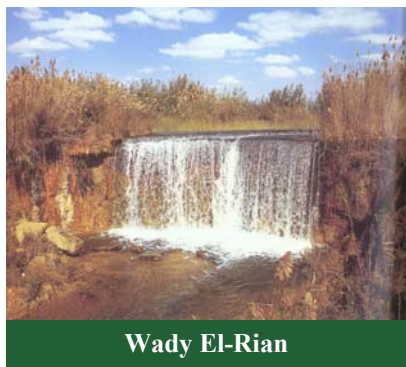
Generally, they are found on the Red Sea and al-Aqaba Gulf zones. They include interconnected marine and terrestrial sectors based on conserving coral reefs and accompanying systems, marine biome, mangrove bushes, marine islands and adjacent mountain and desert areas. They also serve as attractions for tourist seeking scuba diving and water sports in Egypt. These protected areas include: Ras Mohammed Protected area, Nabq, and Abu-Galum in South Sinai governate, and Elba, (the Red Sea islands) and Wadi El Gemal in the Red Sea Governate.



Ras Mohammed

Wetland Protected Areas (8)

These areas are located largely in the Mediterranean shores and the Nile River banks. They specifically include some northern lakes and coastal zones as well as the Nile islands.

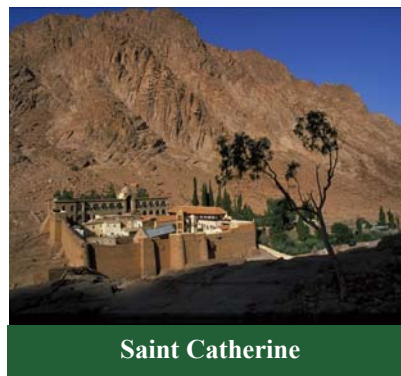


Wady El-Rian

This sector mainly protects resident and migratory bird habitats, assists in managing of fisheries, local communities development and promotes ecotourism. Among these protected areas are: Zaranik in North Sinai Governorte, Ashtum El Gamil in Port Said Governorte, Omayed in Matrouh Governorte, Lake Qarun and the Wadi El-Rayan in Fayoum Governorte, and Saluga and Ghazal Islands in Aswan Governorte, in addition to 144 Nile Islands.

Desert Protected Areas (7)

Those are located in Sinai and the Eastern and Western Deserts, they include mountains, plains and wadis. They protect flora and fauna diversity in these regions, regulate and promote safari tourism, and support local communities. They are the Al-Ahrash protected areas found in North Sinai Governorte and Taba and St. Katherine in North Sinai Governorte, Siwa in Matrouh Governorte, White Desert in New Valley Governorte, Wadi Asiuti in Assiut Governorte, and Wadi Allaqi in Aswan Governorte.



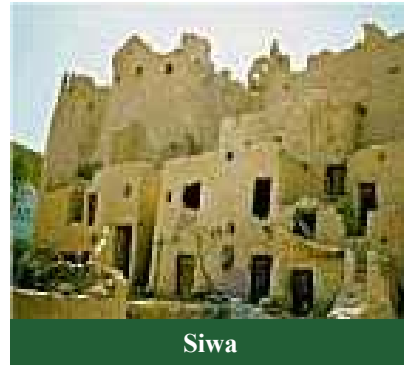
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Geological Protected Areas (4)

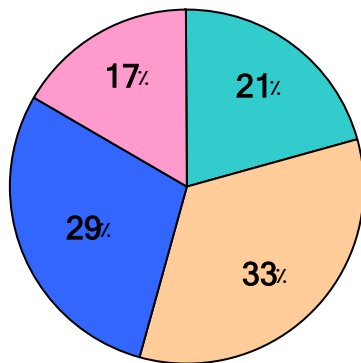
They constitute unique geological phenomena identified as scientifically and touristically important destinations. They are: the Hassana Dome, the Petrified Forest, and Wadi Degla in Cairo Governorte, and San-nur Cave in Beni Sueif Governorte.



Wadi Sannour Cave

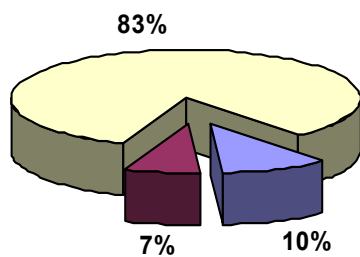


Siwa



■ Marine protected areas ■ Wetland protected areas
 ■ Desert protected areas ■ Geological protected areas

Classification of protectorates
(10% of Egypt's area)



■ Current Protected Areas
 ■ Future Protected Areas
 ■ Remaining Areas

Percentage of Protected areas
to Egypt's total area

6-d Current National Efforts

Nature Protection Institutional Support

A study has been conducted on developing the organizational structure of Nature Protection Sector to meet national and international obligations in the light of contemporary changes and globalization. Preliminary development phases started in 1996 funded by Gulf of Aqaba Protected Areas Development Programs in cooperation with the EU. It has become sustainable since 2000 with support of Environmental Policy Program in cooperation with the USAID.



Training Center

The experimental organizational structures of managing Sinai and southern zone protected areas were issued to be later adopted in order to match with the responsibilities and development intended in these areas.

Protected areas are provided with manpower reaching currently over 500 qualified staff, constituting 50% of the planned task force.

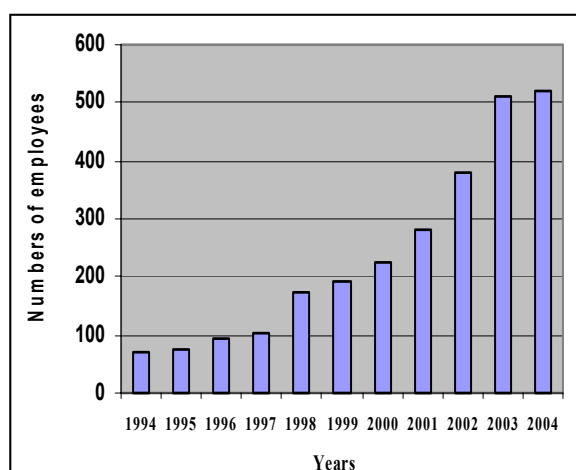
Total habitat represented in Nature protectorates	Red Sea islands	Eba	Wadi El Gemal	White Desert	Siwa	Fegla	The Nile	Borolous	Alaqui valley	Sabuga & Ghazal	Azany Valley	Sennour Cave	El Rayan Valley	Qanoun	Qobret El Haseana	Fossil Forest	El Aneed	Achrum el Gabal	Zaranibq	Ahrash	Saint Catherine	Taba	Abu Galum	Nabq	Ras mohammed		
7																										Mountains	
18																											Hill
12																											Valley
7																											Sand dunes
6																											Oases
2																											Mediterranean Coast deserts
4																											Fresh water swamps
10																											Lakes
6																											Rivers/canals
5																											Salina
12																											Mangrove
5																											Shudge
11																											Coral reefs
6																											Sea weeds
5																											Mediterranean
3																											Red Sea
6																											Marine islands
4																											Pastures
9																											Total habitats/Nature protectorates
	7	13	11	6	12	2	3	9	6	3	3	1	7	8	9	1	2	5	5	5	6	5	6	9	10		

Environments Represented in Protectorates

Visitors and administrative facilities of around 50% of protected areas have been completed and furnished with equipment necessary for management. Moreover, 105 rangers were trained last year in various specializations. The Conservation Sector now employs 5 PhD holders and 11 MA holders. 20 other rangers have already registered to attain MA degrees in Egyptian universities. The government has established the Nature Conservation Training Center and the Environment Center in Sharm El-Sheikh in cooperation with the EU at the highest international standards. Several training courses and workshops are offered to Egyptians as well as students from other countries in the region.

Developing Protection and Maintenance Techniques

- The Protected Area Network is being expended in phases. The most recently declared protected areas are Siwa in Matrouh Governorte, the White Desert in New Valley Governorte 2002, and the

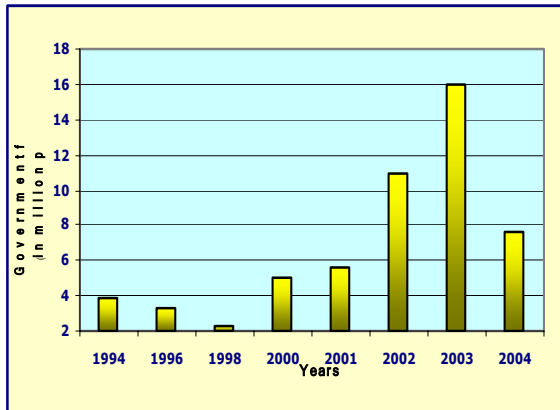


Development of number of employees in protectorates in Egypt (1994 – 2004)

Wadi El Gemal-Hamata in Red Sea Governorte, bringing the total number of protected areas in Egypt up to 24.

- Maintaining the five South Sinai protected areas- Ras Mohammed, Nabq, Abu Galum, St. Katherine and Taba- that were previously developed through the EU cooperation program. The Red Sea Environmental Policy Program finally received funds from the USAID

to support protection of marine biome and protected areas in the Red Sea. This cooperation will be sustained through launching a the LIFE project in 2005. The Italian government is also providing assistance through the Siwa and Wadi Rayan Protected Areas Development Projects Phase II.



Development of Government Funding to nature Protectorates (1994 – 2004)

- The Wetland Conservation project (MedWet) in Zaranik, Lake Burullus and Omayed and the Medicinal Plants Development Project in St. Katherine are carried out in cooperation with GEF and UNEP. The Mangrove Conservation Project is carried out in cooperation with FAO.



El Gemal Valley

- The State budget for nature conservation has been channeled since 2004 towards developing the central sector

Protected Areas including Wadi Degla, Fayoum, Wadi El-Rayan, and Sannour Cave as one-day tourist destinations. In addition to supporting sustainability of Protected Areas and transferring responsibilities after termination of the projects there.

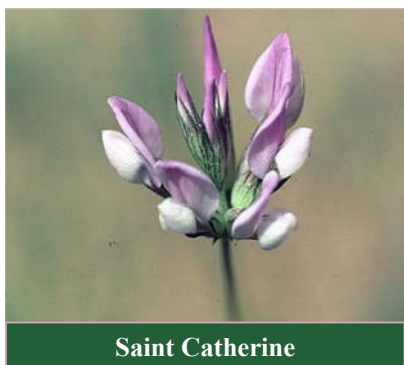
- Setting up a database for endemic and endangered animal and plant species, and acting on classifying and specifying their economic and social value in coordination with academic and research centers, as well as participating in the Global Biological Taxonomy Initiative.



Nabq Protectorate

- A national Committee was formed prepare a national law on biosafety; the bill was drafted to be submitted before the People's Assembly.
- Developing Species and ecosystems restoration programs which have been negatively affected by human activities, such as coral reefs and mangroves and Acacia. Regulating scuba diving and other water sports according to the capacity of coral reef systems, and rational utilization of aquaculture.
- Submitting reports to international organizations regarding development of conservation procedures and on biodiversity the effects of global climate change. Implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in cooperation with police, the

customs authority, the Ministry of Agriculture, Border Guards and NGOs.



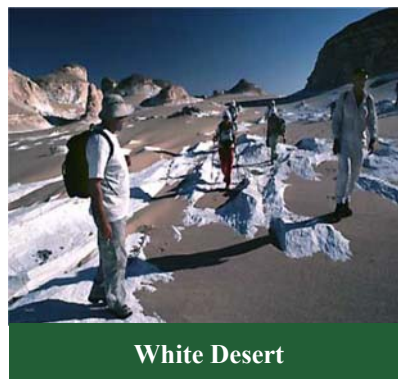
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- Using Information Technology and Geographical Information Systems in monitoring and assessing the conditions of important ecosystems and endangered species to help decision makers as well as academic researchers.
- Coordinating and cooperating at the local level with the ministries of Agriculture and Land Reclamation, Tourism, Local Development, Transportation, Interior, Defense, Culture, Information, Higher Education and Academic Research and affiliated administrations. Moreover, coordinating cooperation at the international level, and exchanging expertise, with UNEP and UNDP, IUCN, UNESCO, International Environmental Conventions Organisations and donors.
- Taking part in many international and national fora, most recently, the recently held Johannesburg World Summit on Sustainable Development, the Fifth Global Conference for Parks in Durban, the Eighth Conference of the Convention of the Parties (RAMSAR, Germany), the Fifth International Conference on Bird Migration (Spain), the Egyptian International Conference concerning Protected Areas (Sharm El-Sheikh), the First Conference of Parties to Cartagena Protocol on Biosafety, the

Second Exhibition of Mediterranean Parks, and finally, the International Summit on Sustainable Development in Small-Island Developing Countries.

Ecotourism

Ecotourism is a responsible type of tourism that is well-aware of ecological sustainability, the matter which ensures repeated visits of tourists to enjoy the charming nature and biological riches. Out of this concept, ecotourism activities were incorporated into the National Biodiversity Strategy, and ecotourism became one of the fundamental principles of declaring new protected areas.



White Desert

The current and future protected area network is the cornerstone of ecotourism where the unique natural and cultural heritage abound, the diverse flora and fauna and geological formations, that are all well managed by high quality cadres with the participation of local population. Tourism investors are now genuinely convinced of the need to protect these areas, for they constitute capital assets for their investments and ensure sustainable viability. More than a million tourists, 70% foreigners, visited these protected areas in 2004, which in turn supported other surrounding attractions. In the Protected Areas Training Center, tourist guides are made aware of and acquainted with the scientific ways and techniques of protection.



Elba Protectorate

Since most of the protected areas are found in remote areas which lack in basic infrastructure or services, they turn to play a very crucial role in providing an outstanding tourist service and taking much care of the visitors, as well as giving assistance to local communities. The Protected areas have modeled the typical Bedouin ecolodges, in St. Katherine and Taba protected areas, using local materials compatible with the surrounding environment and clean energy; the private sector also has established a Bedouin ecolodge in Siwa. Currently, other designs are being made in Wadi El Gemal-Hamata protected area. All those mentioned constitute a significant tourist attraction as tourists are provided the opportunity to live genuinely rustic, Bedouin life.

Supporting Local Communities and Women

Protected Areas Management and Development projects open up a lot of job opportunities in their local areas works in terms of direct or indirect technical, environment, or services. The Egyptian State Ministry for Environmental Affairs employs resident Bedouins and local population in managing and monitoring wild life, developing the endangered species, and managing solid waste. Moreover, the Ministry supports them to undertake environment-related

tourist activities.

Protected areas give assistance to local communities through assigning caravans to visit valleys and mountains and provide the locals with medical and vet care and administer free medicines. They also provide citizens with technical guidelines and environmental advise concerning development of endemic plants, collecting and marketing medicinal plants; and their drying clean agriculture , as well as encouraging citizens to undertake small-scale projects and traditional fishing to upgrade their production.



Saint Catherine Bedouins

Protected areas give special concern to Bedouin women who are the real cornerstone in such communities; Bedouin women are given training in manual artifacts, and support to form NGOs that would help them promote their products. Bedouin women also have a role to play in operating the Protected Areas either through management or secretary works. Women in these areas are taught first aid basics to be administered to women and children and are provided first aid bags.

In this respect, many successes have been achieved in South Sinai, Red Sea, and Matrouh Governorates, which will be furthered and conveyed to other zones.

Environmental Awareness and Education

Protected Areas and awareness raising Biodiversity Conservation programs are a cornerstone in achieving sustainable development. That's why those programmes varied according to the cultural and scientific levels, the quality of participants and beneficiaries of the protection. Awareness activities are carried out through several mechanisms, among conferences, symposia, workshops, or meetings, in addition to the CDs, posters, brochures or others. The Nature Conservation Training Center in Sharm El-Sheikh plays a very important role in providing environmental education to divers, safari organizers, local administration personnel and investors, sensitizing them with the value of protecting natural resources and how far they are interrelated with their future career and incomes. Moreover, visitor reception centers have been established in more than 50% of the protected areas to raise awareness of the manpower there.



Environmental Awareness

Collaborative action is underway with the different mass media, both national and foreign, to promote Egypt's natural and cultural wealth and sensitize people with the importance of stewarding this wealth for the good of the generations to come.

6-e Future Challenges

- Egypt, like many world countries, is heading towards economic transformation within globalization and free foreign trade and the definite accelerating growth of national investments and the increasing volume of trade. This will be further reflected as the demand on natural wealth increases, necessitating striking delicate balance between conservation and development activities, and maximizing economic and social revenue of natural resources.
- There is still a range of protected areas that lack in adequate infrastructure, human cadres and capabilities necessary to achieve sound management and conserve their natural wealth, such as Elba, White Desert, Siwa, Degla and Nile Islands protected areas. These protected areas harbor a wealth and diversity of natural and aesthetic heritage that enable them to increase tourism added value and the economies of these zones.
- Enhancement of tourist development, as an important resource of national income, and further development of urban communities with the increased population growth, have constituted pressuring factors on the planned protected areas.
- Out of the experience gained over the past twenty years, protected areas should be declared in sequence and provided with human cadres and capabilities before their fundamental elements are adversely affected.
- Protected areas need to be constantly funded to ensure updating of protection systems with advanced scientific techniques, utilizing biotechnology and the IT booms.
- It is one world now. Like other countries, Egypt is liable to invasive species

that travel across countries and influence their biodiversity, as well as genetically-engineered species and other organisms that negatively affect safety of humans, animals and plants, in addition to the global climate change and other cosmic factors. All this necessitates reinforcing national capacity, national and international cooperation in order to face these changes.

- Due to the open skies among nations, mobility of transport, growth of global tourism and increased research and studies, it has become imperative to exert more efforts to protect intellectual property rights of the national gene resources and the cultural heritage that constitute strategic stocks for the generations to come.
- In order to start building upon the past twenty year achievements and realizing the objectives of the National Biodiversity Strategy (up to 2017), one of the major priorities is to develop scientific management in protected areas especially following the termination of foreign cooperation projects.
- All these challenges and other internal and external factors command considering radical solutions to achieve self funding for Biodiversity and Protected Area management programs, as well as economics-based institutional development of the nature protection sector, and forming national board of trustees for overseeing biodiversity conservation.

6-f Future Vision

- Providing institutional support to activate the national Biodiversity Strategy through forming a Supreme Board/ Authority for overseeing the national program and mobilizing financial and

technical resources, both internal and external, to undertake its activities under the international changes.

- Developing a balanced organizational structure for nature protection, within jurisdiction of the State Ministry of Environmental Affairs, and providing specialized manpower and adequate financial capabilities to achieve protection and conservation over 15-17% of the area of Egypt, in addition to conserving biodiversity in Egypt within the context of the national and international obligations. A proposal has been submitted to the Cabinet Premier in 2003 on the economic management of protected areas through establishing a holding company involving three companies for ecotourism breeding of wild animals and planting medicinal and aromatic plants. The preliminary economic feasibility study indicated that this holding company could achieve a 25% annual investment return.
- Standardizing management, monitoring and evaluation systems in the protected areas and important ecosystems according to agreed specific standards and indicators, and continuing the Protected Areas management plans and developing all related scientific and technological capacities, and enhancing integration of these protected areas into the national economy and public involvement.
- Developing a National Ecotourism Strategy in Egypt in cooperation with the Ministry of Tourism, the Egyptian Federation of Tourist Chambers, investors, and the Civil Society. Setting a well-defined plan of ecotourism activities that identify the roles played by the different sectors and overseeing its implementation. Moreover, setting a remarkable map designating the hundred

most important ecotourist destinations, in which current and future protected areas stand as pilot models. In addition to participating in media and cultural program campaigns as well as Specialist Training programs.

- Achieving maximum benefit from foreign cooperation programs, particularly natural resources management in the Red Sea in cooperation with the USAID; Conservation of medicinal plants in St. Katherine in cooperation with GEF; Rehabilitation of Mangrove trees in cooperation with the FAO; Achieving regional development in South Sinai in cooperation with the EU; Realizing sustainable development along the coastline of Ras Mohammed Protected Area. Sustainable management of biological resources and developing the Wadi Rayan, Siwa and Elba protected areas in cooperation with the Italian Government. Sustainability must be ensured for all these programs after they have reached their end of term.
- Preparing academic and technical studies of natural wealth and biodiversity in order to declare new protected areas according to the priorities of zones in the Egyptian Western Desert. Encouraging cooperation with donors to develop these protected areas, as well as projects of establishing the Egyptian museum natural history breeding centers, gene banks and rehabilitation negatively affected species.
- Setting and implementing ad hoc programs on fighting all invasive species, issuing the Biosafety Law, and activating the Intellectual Property Act on natural and cultural heritage and participating in development of environmental laws. In addition to developing capacities and achieving coordination and cooperation to address these challenges.
- Supporting and developing all education, awareness raising, and information programs and involving civil society and women to further reinforce protection and conservation techniques in a manner that enhance public opinion and promoting their partnership.

