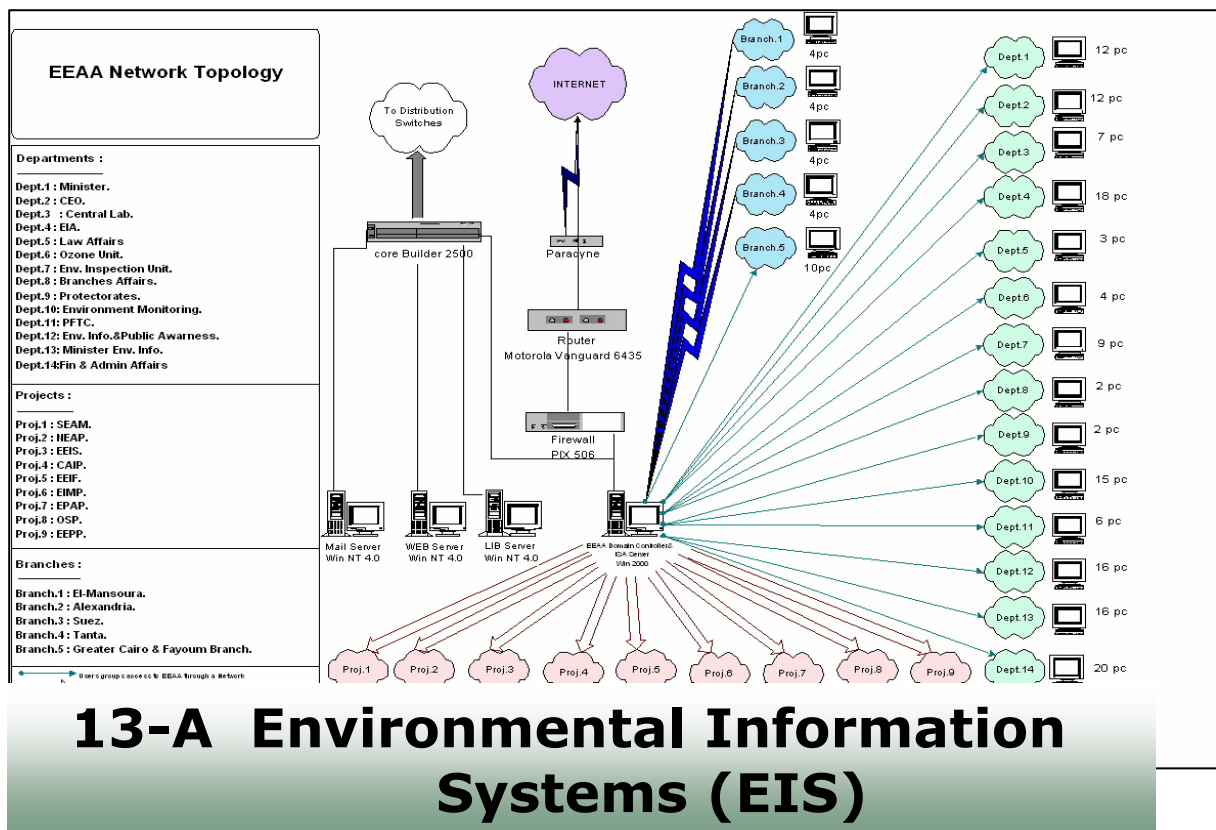


Chapter III



Environmental Management and Policy Analysis



13-A Environmental Information Systems (EIS)

Introduction

Taking the right decisions at the right time is an essential task of national institutions. Consequently, the extent of their success depends primarily on the extent of accuracy and updated available information. The environmental field relies significantly on precise and updated environmental information for taking present and future pollution prevention decisions.

Success of managing the State's natural resources depends on the capacity of control and continuous monitoring of the state of these important strategic resources. Such highly dynamic environmental information needs high-quality and highly flexible specialized information systems in order to be able to monitor and control the status of environmental resources and to be ready for prompt reporting of any emergency such as air or water pollution. In this

framework, MSEA philosophy can be divided into three main axis: Providing access to environmental information to all citizens, particularly investors; providing EIS systems to all MSEA and EEAA staff and decision makers; and finally, managing ecosystems through a wide network of automated systems. Furthermore, preparing technical cadres capable of handling such advanced information systems is considered one of the Ministry's priorities.

In order to achieve such targets and objectives, MSEA has established an Information Center equipped with state-of-the-art ICT equipment and computers, in addition to an integrated network for environmental information and data exchange among MSEA, its executive agency (EEAA) and the five RBOs (Cairo, Alexandria, Mansoura, Suez and Tanta) via integrated environmental systems and applications.

This information and data are submitted to

decision makers and environmental experts in order to provide suitable solutions for environmental problems and amending environmental laws, legislations and regulations to be in line with State priorities.

As ICT specialized technical cadres are one of the significant factors affecting the sustainability and success of such systems, if not the most significant, MSEA has qualified more than 40 specialists in the establishment and management of information systems and networks at a high technical level since 1997.

MSEA Information and Computer Center has received an “excellent” grade and won second position for the third year in a row in the annual competition held for information centers at the ministries and governmental organizations levels by the Cabinet’s Information and Decision Support Center.

In order to facilitate citizens’ access to information, MSEA has established a distinguished website (www.eeaa.gov.eg) which present MSEA and EEAA information and data.



MSEA and EEAA Website

It also provides information on MSEA tasks and responsibilities, instructions and general guidelines, namely on natural resources, achievements, environmental laws and regulations, environmental action, news and projects undertaken by MSEA as well as cooperation protocols between

Egypt and foreign governments and international organizations. Moreover, the website provides MSEA services to organizations, institutions, investors and businessmen such as:

- Submitting an Environmental Impact Assessment (EIA) application for an establishment or a project.
- Submitting an application to the Public Sector Industries for the participation in the Environment Protection Fund (EPF).
- Submitting a request for assistance from EPF.
- Financing projects by the World Bank.

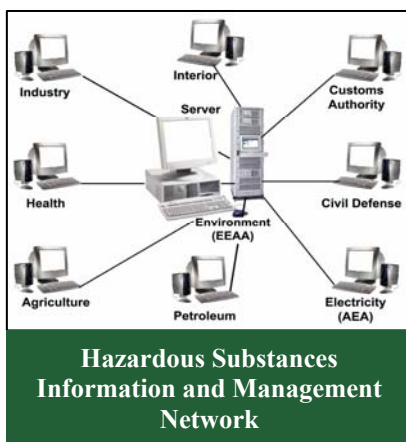
MSEA gives the maximum care to citizens' complaints. It has established a center for receiving such complaints depending on an information system, which follows up complaints until they are solved. In order to expand the service, a special web page for receiving citizens' complaints has been designed on MSEA website on the Internet.



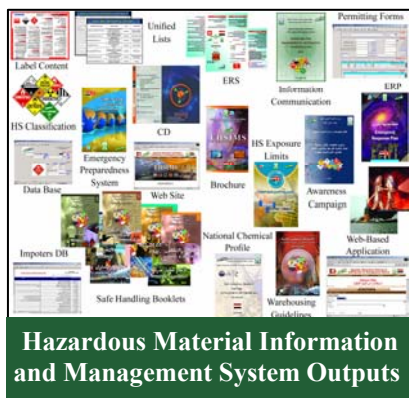
Services Provided by MSEA

MSEA also provides access to a specialized library for researchers containing electronic indices for documents metadata, such as the author’s name, title, publisher, reference words and year of publication. These lists currently include around 6,500 documents (1500 documents in Arabic and 5000 in English) available for environmental library visitors or through the library website.

With respect to specialized EIS systems, an information system has been established in order to evaluate and follow up EIA studies and hazardous substances management in Egypt in collaboration with line ministries (Agriculture, Industry, Health, Petroleum, Electricity and Energy, and Interior), in addition to Customs Department and Civil Defense Authority via an information network linked to MSEA in order to provide an integrated database including lists of existing hazardous substances .



As for environmental pollution, systems for environmental information management of new industrial cities and their generated industrial pollution, continuous follow-up and inspection have been established, besides existing industries and industrial zones, in addition to cities and urban communities system.



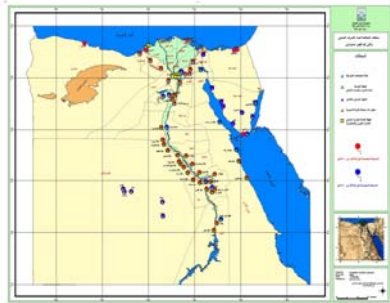
Concerning nature protection, a database for biodiversity has been created including a survey of all existing flora and fauna in Egypt and all their relevant details (habitat, location in Egypt, economic value and the importance of scientific classification for each species). This database helps decision makers when undertaking any activity or project (industrial, commercial or tourist) in any area. It also helps in identifying the degree of protection provided for such species and whether or not they are endangered due to human interference.



With respect to pollution monitoring, a 42-station integrated monitoring network has been established to monitor air pollutants. The network monitors and analyzes air quality data in Greater Cairo. Currently, in cooperation with the Meteorological Authority, air pollution status can be predicted three days in advance, which allows prompt response to overcome high pollution rates and crisis management according to projections concluded by the system.

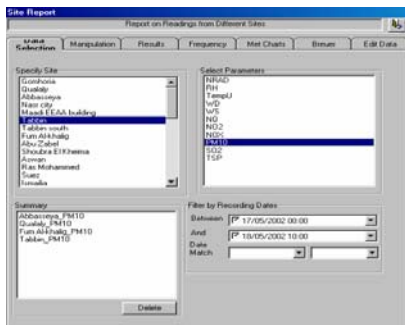


Additionally, cement factories are monitored round the clock and chimney emissions compared to permissible rates stipulated by the environment law.



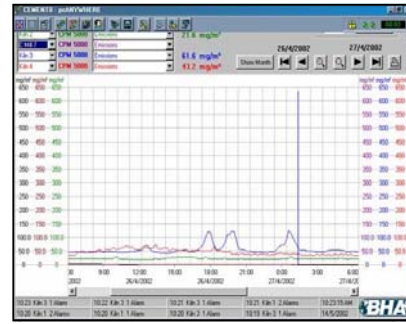
Map of Air Pollution Monitoring Stations

Moreover, water pollution is monitored through the network along the Mediterranean and Red Sea Coasts, in addition to the pollution of ships crossing the Suez Canal.



Air Pollution Emission Rates

In addition to the previous network, there is a database of ISO-14000 certified companies and factories, and a database of environmental NGOs, as well as a database of agreements and cooperation protocols in environment and existing environmental projects in Egypt.



Cement Factory Emission

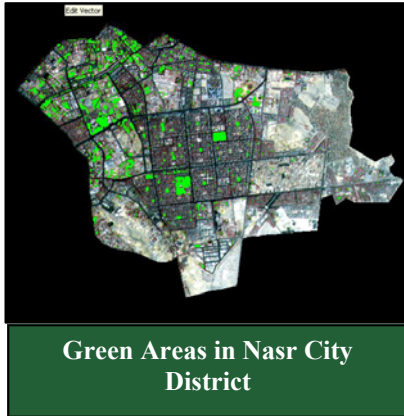
Geographic Information Systems (GIS) is a basic tool for the preparation of environmental applications for obtaining data supported by photos and digital maps for analysis and study purposes. Among the most important applications implemented are a solid waste management system (agricultural and municipal wastes) and selecting the best safe land filling sites for solid wastes, in addition to the special system of the national program for the safe usage of treated wastewater in planting tree forests.



Sanitary Drainage Plants Map (Tree Forests)

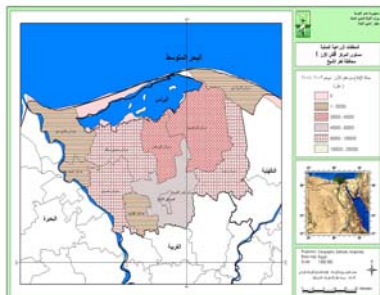
The MSEA being keen on keeping up with the great development in GIS systems, has established a remote sensing unit for developing some environmental applications such as identifying green areas in some residential districts in Cairo, monitoring and following up of the following: the development of some new urban communi-

ties; urban encroachment on agricultural lands in Greater Cairo region; oil pollution in the Gulf of Suez; the Red Sea coast mangrove trees and corals, the pollution resulting from industrial emissions in Greater Cairo (Shoubra El Kheima and South Helwan).



Green Areas in Nasr City District

To promote the concept of e-government, MSEA has automated personnel affairs department including the payment of employees payrolls and dues, electronic recording of employees' data, in addition to the introduction of latest technologies such as the use of electronic fingerprints in recording employees attendance, and developing an electronic archiving system for circulating and filing documents in the different MSEA sectors and departments. Currently, full automation of the Financial Affairs Department (warehouses, procurement, budget, audit, write-off and settlements) is underway.



Map of Rice Cultivated Areas in Kafr El Sheikh Governorate

Despite significant development in EIS systems implementation and use, challenges still exist in this sector including difficult access to, and exchange of data, particularly among governmental bodies, as such data exists in several sectors outside MSEA, and obtaining them in a high quality and precision form would require spending huge amounts of money.

Addressing this issue requires prompt and decisive intervention by the Cabinet of Ministers Information and Decision Support Center through the conclusion of cooperation protocols regulating access to data and information needed by any governmental body within a data exchange integrated system among governmental organizations.

The second challenge lies in the process by which this tremendous ICT development can be coped with. MSEA is relentlessly updating available ICT systems, which requires large funds to upgrade equipment, computers, networks, telecommunications, systems and programs, besides renewal of their usage licenses and continuous training of ICT specialists to keep up with such rapid development.

Thus, large funds should be allocated in the State Budget for this purpose.

Future Vision

In this ICT age, and the interaction of economic, social and environmental factors, we have become one global village where information and data are transferred momentarily, unrestricted and in complete transparency. In order to protect natural resources for achieving sustainable development, the following should be implemented:

- Establishing an integrated EIS network

