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ENVIRONMENTAL MANAGEMENT AT MWRI

Report No. 51
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Water Policy Program

International Resources Group **Winrock International** **Nile Consultants**

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Acronyms and Abbreviations

APRP	Agricultural Policy Reform Program
CAA	Competent Administrative Authority
CEDARE	Center for Environment and Development for the Arab Region and Europe
CEIAU	Central Environmental Impact Assessment Unit
DRI	Drainage Research Institute
ECRI	Environment and Climactic Research Institute
EEAA	Egyptian Environmental Affairs Agency
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPADP	Egyptian Public Agency for Drainage Projects
EPIQ	Environmental Policy and Institutional Strengthening Indefinite Quantities Contract
GOE	Government of Egypt
HRI	Hydraulic Research Institute
IRG	International Resources Group
MALR	Ministry of Agriculture and Land Reclamation
MOHP	Ministry of Health and Population
MWRI	Ministry of Water Resources and Irrigation
NOPWASD	National Organization for Potable Water and Sanitary Drainage
NRI	National Research Institute
RIGW	Research Institute for Groundwater
SRU	Strategic Research Institute
UNICED	United Nations Conference on Environmental and Development
USAID	United States Agency for International Development
USEPA	United States Environmental Protection Agency
USGS	United States Geologic Survey
WPAU	Water Policy Advisory Unit
WPRP	Water Policy Reform Project

Executive Summary

Background

Over the past two decades the environmental impacts associated with growth and development have begun to be integrated into national resource management decision-making in Egypt. Today, achieving long-term sustainability in developing Egypt's natural resource base has become a driving force behind recent development planning efforts. In realizing sustainability in development, it becomes imperative that economic strategies be ever more compatible with long-range environmental planning. Nowhere is this more important than in the development of Egypt's limited freshwater resources.

As the lead GOE institution chartered with management of Egypt's water resources, the MWRI seeks to expand its project assessment capabilities by broadly incorporating the environmental impact assessment process (EIA) into critical aspects of its planning activities and decision making.

Environmental Impact Assessment

The Environmental Impact Assessment (EIA) is an institutional process created to integrate environmental considerations and stakeholder involvement into development decision-making. The EIA process has five main features that make it unique and effective. These include: identifying project alternatives, screening for possible negative impacts, identifying and recommending appropriate mitigation measures, gaining beneficiary consensus through public participation, and establishing monitoring and evaluation.

The process of fulfilling EIA requirements ensures that environmental issues are raised when a project or plan is first proposed and that all concerns are addressed as a project gains momentum through to implementation.

Need for EIA in MWRI

Presently, the Ministry possesses limited but critically needed technical and institutional capabilities and experience in conducting EIAs. In the near future, it is anticipated that MWRI will gain the capability to conduct EIAs on all future water resources projects, either directly as the project developer, or as the licensing Competent Administrative Authority (CAA).

Benchmark Statement and Verification Indicator

In response to this need, APRP Tranche V Benchmark C.3, "Environmental Management at MWRI," was undertaken to develop and formalize the EIA process within the MWRI institutional framework. Specifically, the benchmark states:

> *The GOE (MWRI) will approve a policy to improve environmental management of water resources in MWRI operations.*

The verification indicator for this benchmark is:

> *An approved MWRI policy that addresses procedures, mechanisms, and a plan to assure environmental concerns are addressed in the MWRI activities, by requiring that environmental impact assessments be conducted for proposed new projects.*

Benchmark Activities

Activities undertaken through the course of the benchmark are intended to lead to the development of a policy statement requiring EIA application to all future water resources projects in Egypt, and expanding the ministry's capability to implement the resulting policy. Benchmark activities included maintaining a high level of inter-ministerial cooperation, conducting stakeholder awareness workshops, a study tour to investigate the EIA process in the United States, reviewing and assessing present

MWRI capabilities and resources, and compiling a guide for applying EIA to future water resources projects in Egypt.

Benchmark Achievements

Achievements resulting from the aforementioned benchmark activities include an assessment of MWRI's existing resources and potential for conducting environmental assessments, a plan to adapt the EIA process to fit within the existing MWRI institutional framework, an EIA Source book to serve as a guideline for conducting EIAs within MWRI, a policy statement, and a mechanism and proposed implementation plan to fully establish the required level of institutional capacity within MWRI, mandating EIAs for all proposed water resources projects.

Policy Statement

A recommended policy statement was developed with input and modification from the involved GOE stakeholders. This was submitted to H.E. the Minister, who put it into force by means of his signature. Copies of the signed policy, in English and in Arabic, follow this page.

1 Introduction

1.1 Overview

The Agricultural Policy Reform Program (APRP) is a five-year, United States Agency for International Development (USAID) grant program involving several ministries. The Ministry of Water Resources and Irrigation (MWRI) is the lead Egyptian governmental agency charged with the management of water resources. The MWRI and USAID, under the umbrella of the APRP, jointly designed a water policy package consisting of integrated water policy and institutional reforms. USAID supports the Ministry's policy reform efforts by providing technical assistance and annual cash transfers based on performance in achieving identified and agreed-upon policy reform benchmarks.

Coordination among MWRI, USAID, and the water policy technical assistance program is through the Water Policy Advisory Unit (WPAU) and a project steering committee established by the MWRI. Technical assistance for the water policy analysis activity is provided through a water resources results package task order (Contract PCE-I-00-96-00002-00, Task Order 807) under the Environmental Policy and Institutional Strengthening Indefinite Quantity Contract (EPIQ) between USAID and a consortium headed by the International Resources Group (IRG) and Winrock International. Local technical assistance and administrative support is provided through a subcontract with Nile Consultants.

1.2 Purpose of the Report

A Memorandum of Understanding between the Arab Republic of Egypt and USAID, dated 15 July 2001, listed the mutually agreed policy reform benchmarks for APRP Tranche V (1 January 2001- 31 December 2001). The purpose of this report is to document the activities carried out by MWRI in support of the successful completion of the APRP Tranche V, Benchmark C.3 Environmental Management at MWRI.

1.3 Organization of the Report

This final benchmark report consists of five chapters in addition to three appendices. Chapter 1 is an introduction, providing an overview of the APRP, an explanation of the purpose of the report, and a description of the report contents and a justification of the need for EIAs in MWRI. A background, explaining the significance of considering environmental impact, a brief history of the EIA process, a description of the report contents, and the future vision of EIA within MWRI, is presented in Chapter 2. The T5 C.3 benchmark program, including benchmark statement, verification indicator, policy objective, anticipated long-term results, and project activities is given in Chapter 3. Results of benchmark activities addressing EIA as a process, a discussion of the EIA Source book developed under the benchmark, and institutional requirements required for implementation of EIA, are presented in Chapter 4. Chapter 5 addresses recommended policies to improve environmental management of water resources in MWRI operations, explains the organizational structure for the implementation of EIA in MWRI and the proposed implementation plan for further expanding the EIA system within the ministry.

Included in a separate bound volume, as documentation supporting this final benchmark report, are three appendices:

Appendix A	Environmental Impact Assessment Source book;
Appendix B	EIA Stakeholders Workshop Report, and;
Appendix C	United States Environmental Study Tour Report.

1.4 The Need for Environmental Assessment in MWRI

The MWRI does not possess a mechanism to fully consider the broader spectrum of environmental impacts associated with its development projects and thus has not conducted environmental impact assessments on a regular basis. As such, some water resources development projects have suffered from unanticipated negative environmental impacts. To minimize possible negative impacts of future water

resources projects, there exists the need for an effective management tool by which ancillary impacts on environment might be included in the project planning process.

Though there are many examples where such a mechanism would have been of benefit to MWRI in the past, the construction of mixing pump stations in the Nile Delta for drainage water reuse is one clear example. When the plan to construct these central-mixing stations was developed, little consideration was given to the impact that poor water quality would have on the utilization of these investments. As a result of this oversight, many of the Delta mixing stations have not been able to provide their full benefit, and since 1992, seven of the 23 stations in the Delta have been entirely or periodically closed, due to the fact that the quality of drain water was not acceptable for reuse in agriculture. If a mechanism to identify and assess the possible impacts of such projects had been available to decision makers, such outcomes might have been avoided.

Sound water resources development and a quality environment play critical roles in the future of Egypt and the well being of Egyptians. As such, the MWRI must strive to manage the coexistence of these two important planning variables. Accordingly, the Ministry must establish a mechanism for addressing the environmental issues while coordinating its relationship with other concerned stakeholders. To minimize the possibility of such oversights occurring in future projects, the Ministry needs to formally adopt the EIA process into its framework and adapt it appropriately to fit the current Egyptian context.

MWRI has for some time accepted the principal of environmental screening of water resources development projects at the planning stage. Efforts to initiate project screening in the form of impact assessments began nearly ten years ago through the efforts of the international donor community. In recent years, the MWRI has strived to initiate the basis for environmental assessment within its institutional planning framework. Presently, the Ministry possesses limited but growing capability to assess the broader range of impacts associated with some of its activities.

MWRI now seeks to expand its environmental assessment capabilities by fully adopting the EIA process. The Ministry is planning to adopt guidelines to implement environmental impact assessment (EIA) consistently and methodically. As a fist step, MWRI will apply EIA to all new projects executed by the Ministry. Ultimately, MWRI aims to fully incorporate the EIA process into the planning, construction, and operation of all its water-related development projects.

2 Background

Economic, social, and environmental change is inherent to development. However, while development aims to bring about positive change, it can sometimes lead to unanticipated negative impacts, such as conflicts among stakeholders and beneficiaries, adverse changes in socio-economic conditions, and/or exploitation of natural resources at the expense of the environment.

In the past, economic growth was promoted as the single catalyst for increased well-being, and thus became the main thrust of development. During this period, little attention was given to adverse social or environmental side effects associated with development projects. In many cases throughout the world, focus on financial gain and economic growth as the sole measure of development has lead to unexpected and often serious long-term negative environmental impacts and increased socio-economic imbalance.

Today, it is realized that development entails more than economic expansion. To achieve true development, it is imperative that economic development strategies be compatible with long-range environmental planning. A first step in consummating the marriage of these critical elements requires the incorporation of environmental sensitivity into the development planning process.

This broadened definition of development has led to the concept of developmental sustainability. Sustainable development aims to increase general well being by providing greater opportunity for equity in fulfilling basic human needs, without compromising the environment and future generations. Today, sustainability has become an accepted and essential feature of development.

To facilitate sustainable development goals, management tools have been created which integrate environmental considerations into the development decision-making process. One such management tool is the Environmental Impact Assessment (EIA).

2.1 Environmental Impact Assessment

Developed in the 1970s, environmental impact assessment (EIA) is a process used to identify the broader spectrum of environmental impacts associated with a specific development project. Generally, the EIA process has five main features that make it unique and effective. These include:

1. Identifying project alternatives;
2. Screening for possible negative impacts;
3. Identifying and recommending appropriate mitigation measures;
4. Gaining beneficiary consensus through public participation, and;
5. Establishing monitoring and evaluation.

Through these actions, the EIA process provides a unique opportunity to demonstrate ways in which the environment may be improved through development. The EIA aids in predicting conflicts between proposed projects and environmental priorities, and provides an opportunity for conflict resolution and mitigation to minimize ancillary negative impacts.

Though EIA results in a number of important outputs, it is the process of fulfilling EIA requirements that gives it potency. The EIA process insures that environmental issues are raised when a project or plan is first discussed and that all concerns are addressed as a project gains momentum through to implementation. Most importantly, EIA enables monitoring programs to be established which evaluate project performance and assess future impacts. Monitoring, in turn, provides data by which project managers and development planners can adapt and improve future project activities and mitigation measures. Through use of the EIA process, it becomes possible to make informed choices and implement long-term planning, which in turn support sound development

The United Nations Conference on Environment and Development (UNCED) has made clear the importance of environmental considerations, specifically as they pertain to the impacts associated with water resources development. Agenda 21,

Chapter 18, from the proceedings of this important conference states, “Protection of the quality and supply of freshwater underscored the importance of environmental protection and conservation of the natural resource base in the context of water resources development for agriculture and development.”

Within the Government of the Arab Republic of Egypt during the past two decades, the importance of environmental protection and conservation measures in development planning and practice has been recognized.

An arid desert country, Egypt’s most important and limited natural recourse is undoubtedly fresh water. Major freshwater resources in Egypt presently include the River Nile, deep groundwater reserves, and to a far lesser extent water generated through desalinization of brackish water. As elsewhere, water resources development projects in Egypt can result in many far-reaching ecological and socio-economic changes.

While water resources projects are generally intended to benefit human population, some threaten the environment and in some cases the long-term productivity of the projects themselves. Pollution, soil erosion, desiccation, water-logging, groundwater depletion, displacement of people, loss of habitat and rare and endangered species, climate change, transmission and propagation of disease, and energy consumption are only some of the possible negative impacts associated with water resources development. Appropriately, recent Egyptian environmental law mandates that the EIA Process be applied to all future water resources development projects.

The EIA process makes sure that environmental issues are raised where a project or plan is first discussed and that all concerns are addressed as a project gains momentum through to implementation. Recommendations made by the EIA may necessitate the redesign of some project components, require further studies, and suggest changes which alter the economic viability of the project or cause a delay in project implementation. To be of most benefit, it is essential that an environmental assessment is carried out to determine significant impacts early in the project cycle so that recommendations can be built into the design and cost-benefit analysis without

causing major delays or increased design costs. Recommendations made by the EIA may necessitate the redesign of some project components, require further studies, and suggest changes, which alter the economic viability of the project or cause a delay in project implementation. To be of most benefit, it is essential that an environmental assessment be carried out to determine significant impacts early in the project cycle so that recommendations can be built into the design and cost-benefit analysis, without causing major delays or increased design costs.

EIA as a process can:

- Modify and improve the design of a proposed project;
- Ensure that the resources are used efficiently;
- Enhance the social aspects related to the proposals;
- Mitigate potential adverse impacts;
- Identify measures for monitoring and managing impacts, and;
- Facilitate informed decision-making.

EIA involves gathering and analysis of all relevant information on a proposed project to determine the likely consequences if this proposal is implemented in a given area, and if it should be implemented, what appropriate mitigation or alternatives must be considered in order to ensure environmentally sound and sustainable implementation.

2.2 EIA General Procedure

Usually, the proponent is responsible for carrying out the EIA. The requirements for the EIA may be set out in law, guidelines or other procedures depending upon the stakeholders of the project. Sometimes it may be necessary for the proponent to comply with more than one set of procedures. In this case, the need for good planning is even more important.

EIA is typically carried out by a team of people appointed especially for the task, with an appropriate range of scientific, economic, and social expertise. This group of people acts as an interdisciplinary team, meeting together to plan a systematic process

for carrying out the study. The team leader (often called the EIA project manager) plays a key role in the successful outcome of the process.

Not all projects need an EIA. Different EIA systems use different methods of choosing, or screening projects to decide which will not significantly affect the environment and which will. Some systems designate projects or areas using threshold lists. Others use judgement or initial evaluations to determine environmental significance based on proposal type, size, cost, the sensitivity of the environment to development, or the strength of community opinion.

The exact components, staging and responsibilities for an EIA process will depend upon the requirements of the country or donor. The main stages of the EIA procedure are:

- Screening,
- Scoping,
- Assessing,
- Mitigating,
- Reporting
- Reviewing,
- Decision-making
- Monitoring and Management, and
- Public Involvement.

Screening:
An initial assessment to decide whether a project requires further investigation in an EIA.

Scoping:
To identify the key impacts requiring further investigation, and prepare the terms of reference for the study.

Assessing:

The identification, analysis and evaluation of the significance of impacts.

Mitigation:

Developing measures to prevent, reduce or compensate for impacts or environmental damage.

Reporting:

Presenting the results of the impact assessment in a useful format.

Reviewing:

Assessing the adequacy of the EIA report, taking account of the points of view of stakeholders and assessing the acceptability of the proposal in terms of existing plans, policies and standards.

Decision-making*:*

Deciding whether the proposal can proceed and under what conditions. The decision-maker has the option to request that the proposal be rejected or redesigned (or certain aspects redesigned) so that adverse environmental impacts are minimized.

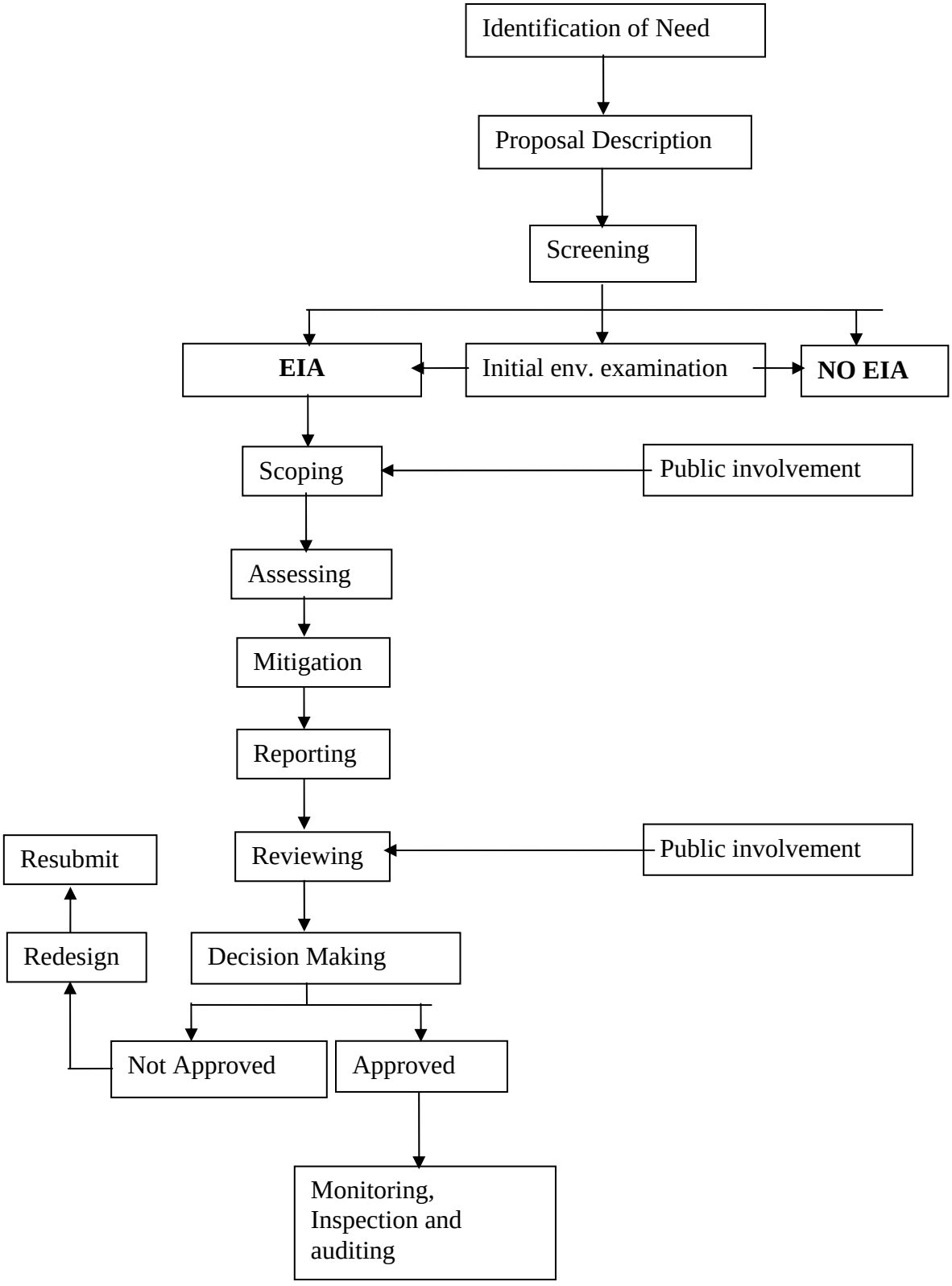
Monitoring and Management:

Implementing mitigation measures, monitoring impacts for compliance, checking that they are as predicted. Taking necessary action to ameliorate problems if they appear.

Public Involvement:

Public involvement takes place typically during the scoping and reviewing phases of EIA, but may also occur at any of the other stages of the EIA process. Public involvement programs can range in purpose from those that aim only to provide the public with information, through to those that encourage the full involvement of the public in the decision-making process. Public involvement must be carried out in a manner that is appropriate to the culture of the people concerned. A flow chart of the EIA Process is presented as Figure 2.1.

Figure 2.1 Flow Chart of EIA Process



2.3 MWRI Responsibilities Related to EIA

The Egyptian Government has enacted several important environmental laws and ministerial decrees in an effort to incorporate the environmental dimension into its institutional planning and decision-making framework. Among these laws is Law 4/94, which defines the roles and responsibilities of government as it relates to the environmental impacts associated with development. Law 4/94 is complemented by executive regulations issued by the Prime Minister as decree No. 338 of 1995.

Law 4/94, concerning protection of the environment, was created to address pollution measures and controls for existing, as well as new and/or expanded developments and projects. Under Law 4/94, new projects will require an EIA. Articles 19 through 23 and 70 through 73 of law 4/94 stipulate measures related to the required EIA. This precedent-setting law defines the Egyptian Environmental Affairs Agency (EEAA) as the national institution mandated to oversee and implement Law 4/94.

EEAA was established in 1982 as the public entity affiliated with the competent Minister for Environmental Affairs. EEAA is chartered with the responsibility and authority to formulate national environmental policy as well as to prepare the necessary plans for the protection, promotion and enforcement of environmental laws, including Law 4/94.

In 1994, discussions between EEAA and the line ministries were conducted, detailing each entity's respective role and responsibility in carrying out the EIA process. In 1996, EEAA formalized the responsibilities of line ministries based upon agreements resulting from these discussions. The remainder of this chapter focuses on the roles and responsibilities of the MWRI in implementing the EIA process.

2.4 MWRI Present Situation Related to EIA

Activities discussed in this section were the result of work conducted under the APRP T5 C.3 benchmark, principally a survey of environmental units, human resources and

previous EIA studies conducted by MWRI. While the discussion is by no means exhaustive, it provides the reader with a general sense of MWRI's present responsibility, capability, and future potential to carry out its role in the EIA process and establishes a starting point for further EIA development within the Ministry.

Law 4/94 states that a Competent Administrative Authority (CAA), or licensing authority, must evaluate and approve all EIAs before project construction works can be initiated

The MWRI is somewhat unique with respect to the accepted EIA process in that it serves both as a licensing agent to approve projects constructed by other CAAs as well as a developer for projects planned and implemented internally. As such, the Ministry plays two roles within the current EIA system.

MWRI as a Developer

The Ministry acts as the proponent and developer for many water resources-related projects. As the developer, the MWRI initiates projects according to national need and then carries out the planning and implementation of approved projects. Under these circumstances, the Ministry is responsible for preparing and submitting an EIA to EEAA following the respective national procedures. An example of a project in which MWRI served as the developer is the planning and construction of the Esna Barrage

MWRI as a Competent Administrative Authority (CAA)

Many water resources projects and projects effecting Egypt's water resources are developed by entities other than the MWRI. In this case, the external entity must prepare and submit a detailed EIA to the Ministry. Under these conditions, the MWRI acts as the Competent Administrative Authority. MWRI receives the EIA, submitted by the developer, and then sends it to EEAA for review and comments. The Ministry takes EEAA's comments into consideration when issuing the licenses and acting as the CAA by approving or rejecting the project. Developments around Lake Nasser are examples of projects where the Ministry acts as the CAA.

Environmental Units in the MWRI

As previously mentioned, the concept of environmental impact assessment was introduced to MWRI nearly ten years ago (1992). Today, several environmental assessment units within MWRI departments are in various stages of development. Two environmental units officially established in the MWRI include:

- The Mechanical and Electrical Department in 1998, and;
- The Egyptian Public Authority for Drainage Projects (EPADP) under the Planning and Follow-up Department in 1999.

Human Resources with EIA Background in the MWRI

The survey revealed that some personnel within MWRI have received formal EIA training and acquired various levels of technical expertise, including:

- Four engineers in the Irrigation Improvement Sector who have received short EIA training in the USA or Japan;
- Two engineers from the Reservoirs and Grand Barrages who received EIA training in Germany;
- One person in the strategic Research Unit of the NWRC who has an M.Sc. degree in environment, and;
- Several engineers who have attended short courses in environmental engineering at the MWRI training center.

EIA studies conducted in the MWRI

In general, few EIA studies have been conducted within the Ministry. Among EIA studies conducted by the MWRI, four were reviewed.

The first is an EIA study for the Northern Sinai Agricultural Development Project (El-Salam Canal). This study was funded by the World Bank and carried out in 1992 by Euro Consult in association with Pacer and Darwish Engineers.

The North Sinai Development Agency undertook a second feasibility study including an EIA for the North Sinai Integrated Rural Development Project (Phase II) in 1997.

This study was funded by JICA and was carried out by SANYU Consultants Inc. and Pacific Consultants International.

The third study was an EIA study for the South Egypt Development (Toshka) Project. The study was undertaken by the Center for Environment and Development for the Arab Region and Europe (CEDARE) in 1998. The study followed the EEAA guidelines together with a checklist approach developed by CEDARE.

The fourth and final study examined is a feasibility study for the New Hammadi Barrage and Hydropower Project, including an EIA. Funding for this EIA was provided by the KFW. An environmental group within the Reservoirs and Grand Barrages Sector of MWRI was established to conduct this study. This group was composed of local and foreign experts.

Additional activities related to EIA in the MWRI

Within MWRI, some departments are carrying out EIAs for selected activities, including the:

Mechanical and Electrical Department, where efforts have been undertaken for the assessment of drain conditions and the effects of the low quality water in the drains on pumping stations. World Bank EIA experts conducted this study in 1991.

Drainage Research Institute,, which conducted a similar study as those undertaken by The Mechanical and Electrical Department in 1996 for El-Tabia Pumping Station.

Irrigation Improvement Sector has assumed the responsibility for conducting EIA studies for World Bank Projects within the Irrigation Improvement Sector of the Ministry.

EPADP, where two reports were published in 1999 and 2001 on Environmental Assessment Issues by a local consultant. Additionally, a local consultant is currently aiding in EIA studies for select drainage water pumping stations in the middle and northern Delta Region.

High Aswan Dam Authority, where an Inter-Ministerial Committee was formed for environmental management of Lake Nasser, resulting in a booklet containing guidelines regarding lake water utilization. This committee includes representatives of the Ministries of Water Resources and Irrigation, Agriculture and Land Reclamation, Tourism, Health, Transportation, Environment and Community Development

Several Nile Water Research Center Institutes have also become involved in the EIA Process and the development of related environmental management tools.

- The Drainage Research Institute (DRI) has conducted several studies of water quality monitoring throughout Egypt. Further, the DRI participated in the development and operation of water quality software (SIWARE).
- The Environmental and Climatic Research Institute (ECRI), established in 1994, is keeping a low profile but is working on some EIA studies related to its activities.
- The Research Institute for Groundwater (RIGW) has conducted several studies regarding groundwater pollution and seawater intrusion. Further, the institute is responsible for a network of piezometers for water level and quality monitoring, of some of Egypt's more important groundwater aquifers.
- The Strategic Research Unit (SRU) has participated in a Canadian and an Italian funded project for establishing a decision-support system based on environmental balance.
- The Nile Research Institute (NRI) conducted a Canadian funded project for integrated Nile development in the early 90's.
- The Hydraulic Research Institute (HRI) conducts a wide range of hydraulic studies, which can provide support for any EIA study requiring such expertise.

MWRI's Future Potential to Conduct EIAs

The assessment of the MWRI past and present EIA studies and resources revealed that while present resources are limited, there exists a need in the MWRI to expand its capabilities in the future to conduct EIAs for many more of its water resources development activities.

The multidisciplinary structure of the Ministry is perhaps its greatest asset with regard to EIA potential. The MWRI is composed of institutes and departments, each specializing in a specific aspects of water resources management. Since the EIA is a multidisciplinary or interdisciplinary exercise, an EIA for water resources projects will require the expertise of several disciplines of physical, social, biological, and financial sciences. Given the diverse institutional specialization of the ministry as a whole, experts from the different institutes can contribute to a successful EIA. Further, the NWRC has a number of laboratories, computer software and hardware, field equipment, etc., covering the different aspects of water resources assessment and management to support EIA efforts. Lastly, a wealth of national water quality data exists in the different institutes.

A mechanism has to be established to channel the individual efforts of the institutes into interdisciplinary teams, properly balanced and adjusted for the specific study. Capacity building will be necessary in some aspects. Some external expertise might also be required, for example for social, economic or biological studies. Another important area of required improvement is efficient sharing of data and information among different agencies of the MWRI as well as between the MWRI and other stakeholders with relation to Egypt's water resources. In brief, while MWRI's present EIA capabilities appear limited, great potential exists for it to quickly assimilate and implement the EIA process broadly and effectively.

2.5 MWRI Future Vision

Within the past two decades, the ancillary impacts associated with growth and development have begun to be considered in national resource management decision-making in Egypt. As the lead GOE institution chartered with management of Egypt's water resources, the MWRI seeks to incorporate the environmental dimension into

critical aspects of its planning activities and projects. To date, the EIA concept has been modestly and inconsistently applied to a limited number of MWRI projects.

In response to this situation, the present benchmark of the APRP was designed to develop and formalize the EIA process within the MWRI institutional framework. It is the goal of this important benchmark to develop a policy that will insure that the EIA process is effectively implanted and methodically applied to all MWRI project-planning activities. One specific goal of the benchmark is to identify recommended procedures and mechanisms required for MWRI to establish a dedicated, well-trained, and interdisciplinary environmental unit. This proposed environmental unit will exist within the Ministry and will interface with the EEAA, which is empowered to oversee the EIA process through Egyptian Environmental Law 4/94.

In the future, it is anticipated that MWRI projects will be screened and categorized as projects with no foreseeable impacts, or Type A projects (*white projects*); projects with potential impacts, or Type B projects *(gray projects);* and projects with unquestionable impacts, or Type C projects *(black projects)*. The EIA process will be applied to all MWRI project activities to the recommended level of detail based upon the project category. The MWRI will coordinate and oversee adequate mitigation and monitor follow-up activities to ensure that the recommendations of each project-specific EIA study are implemented. In this manner, the MWRI will improve its water resources management to better serve the Arab Republic of Egypt and its people.

3 Benchmark Program

The Government of Egypt recognizes the need to institutionalize the environmental dimension into its development planning process. As such, it has enacted laws to establish the EIA process at the national level. Through the diligence of the EEAA, the roles and responsibilities for carrying out environmental impact assessments have been defined for all responsible GOE line ministries. The GOE Ministry responsible for national water resources development is the MWRI. Through the APRP Tranche V C.3 Benchmark, the GOE intends to formalize the EIA Process within the MWRI.

3.1 Benchmark Statement

Accordingly, the T5 C.3 Benchmark states that:

> *The GOE (MWRI) will approve a policy to improve environmental management of water resources in MWRI operations.*

3.2 Verification Indicator

The indicator established to confirm completion of this benchmark is as follows:

> *An approved MWRI policy that addresses procedures, mechanisms, and a plan to assure environmental concerns are addressed in MWRI activities, by requiring that environmental impact assessment be conducted for proposed new projects.*

3.3 Policy Objectives

The approved environmental policy is intended to achieve the following objectives:

1. Provide guidelines which address the broader range of environmental concerns affecting Egypt's water resources development and management.
2. Preserve Egypt's environment and water resources base while simultaneously creating a more productive economy and healthier environment for the benefit of all Egyptians.
3. Foster sustainable development of new projects in the national water sector.

3.4 Anticipated Long-term Effects

Expected effects of this benchmark include, but are not limited to:

- Enforcement of Law 4 of 1994 and its Executive Regulation;
- Identification of mechanisms and procedures for ensuring that environmental matters are properly addressed in MWRI water resources planning, operation, and management activities;
- Establishment of specific channels for coordination between MWRI and other agencies responsible for environmental matters;
- Creation of a dedicated central multidisciplinary environmental unit to conduct MWRI EIA work;
- Increased awareness of the importance of integrating environmental parameters, where appropriate, into all Ministry water management activities by the Ministry staff, at all levels.

3.5 Benchmark Activities

This section provides a brief description of the critical activities conducted under the APRP T5 C.3 benchmark.

Activities carried out by WPAU/EPIQ and MWRI in support of this benchmark included:

- Fostering Inter-ministerial cooperation and collaboration;
- Investigating the present EIA practices and capabilities in MWRI to clarify their operating procedures, mechanisms and effectiveness;
- Conducting a study tour to the USA to learn EIA history and practices in the US water sector;
- Sponsoring and conducting a discussion workshop for MWRI and other stakeholders to discuss and revise the MWRI EIA Guidelines;
- Sponsoring and conducting an awareness workshop for middle management staff of MWRI, and;
- Preparing an EIA Source book that tailors general EIA requirements to particular water activities undertaken by MWRI. This source book is intended to be a reference guide for MWRI staff in the future.

Inter-ministerial Co-operation and Collaboration

The EIA process requires the participation of numerous stakeholders, including government institutions and agencies, the private sector, and the general public. As such, developing and implementing the EIA under the APRP Tranche V C.3 benchmark included the participation of several ministries and agencies. The Benchmark Working Group was led by Eng. Nasser Ezzat (WPAU) and included members from the EPIQ Team, MWRI, EEAA, and two private consulting companies that deal with EIA preparations for a variety of interests. Additionally, the following ministries were invited to the Environmental Management Stakeholders workshop: MWRI, MALR, EEAA, NOPWASD, and MOHP.

MWRI Capabilities and Resources

In the early stages of the EIA benchmark activity a survey of existing environmental units, human resources, and previous EIA Studies conducted by the MWRI was performed. The purpose of this survey was to assess MWRI's present capabilities and potential to conduct EIA work in the future.

EIA Source book

An EIA Source book was written and prepared to serve as a guide for applying the EIA Process within the Egyptian Institutional framework. This guidebook is intended

to serve as a reference baseline for application of the EIA process within the Egyptian context. The source book is presented in its entirety in Appendix A.

EIA Awareness Workshop

An Awareness workshop was conducted on August 16 and 17, 2001, for middle management of the MWRI. The focus of this two-day affair was to present a discussion of the EIA process in general, Egyptian environmental regulations, MWRI environmental experience and capabilities, and the ongoing benchmark objectives and activities. An opportunity was provided for participants to discuss the presentations in detail and to provide feedback to the working group. The presentations resulted in lively discussion and the objective of increasing environmental awareness among MWRI staff was achieved.

Study Tour

The United States has successfully developed and implemented EIA as a process over a 30-year period. There is much to be learned from the experience of other countries, specifically the United States, regarding the EIA process and its application. As such, MWRI organized a study tour to the United States from July 15-30, 2001, to help participants learn more about EIA as a part of the APRP Water Policy Benchmark C.3, relating to environmental management. The objectives of the study tour were to learn:

- EIA history in the US water sector;
- EIA practices in the USEPA, USGS, and World Bank;
- EIA practices in the California water sector;
- Environmental dimensions of California water resources management;
- Reference water EIA Guidelines;
- Reference water EIA projects, and;
- Society responses to water EIA.

A description of the study tour is detailed by the study tour report included as Appendix C.

Stakeholder Workshop

An Environmental Management Stakeholder Workshop was conducted on October 17 through 19, 2001 in Ras Sidr. During this workshop a draft EIS policy and timeline was presented to the participants. Representatives from MWRI, EEAA, NOPWASD, WPAU, EPIQ, and Chemonics Egypt attended this workshop. The main objectives of the stakeholders' workshop were to:

- Exchange knowledge and experience regarding Environmental Impact Assessment for MWRI activities;
- Seek consensus on the importance of public participation;
- Present and discuss major contents of the MWRI EIA source book;
- Recommend strengthening institutional setup (unit, staff, funding) procedures and mechanisms to support the EIA Process in MWRI, including a plan to implement such policy, and;
- Discuss relations between MWRI and EEAA.

A detailed discussion of the subject matter presented during this workshop can be found in the workshop minutes, included as Appendix B.

Policy Statement and Implementation Plan

A recommended policy statement and implementation plan for the EIA process within the MWRI was developed from the draft statement, with input and modification from the involved GOE stakeholders. A plan and timeline for establishing an environmental unit and implementing the EIA process within the MWRI was developed. This plan includes training and financing an environmental unit within the ministry and providing the physical resources necessary to accommodate this unit. This draft implementation plan and timeline was presented during a stakeholder workshop for discussion, modification, and approval by the benchmark working group.

4 Benchmark Achievements

Activities carried out under the T5 C.3 Benchmark resulted in several important achievements, including:

- Identifying resources necessary to implement EIA in MWRI;
- Preparing an EIA Source book that tailors general EIA requirements to particular water activities undertaken by MWRI, and;
- Developing and proposing a policy to improve environmental management and an implementation plan to expand EIA within MWRI.

4.1 Resource Requirements for EIA Development in MWRI

Establishing and implementing the EIA process within the MWRI will require allocation and commitment of physical, financial, and institutional resources.

Physical Resources

Physical resources are relatively easy to identify and may be acquired through conventional procurement methods. Required physical resources will certainly include, but may not be limited to, office space, office supply equipment (computers/software and other office machinery and furniture), environmental monitoring and sampling equipment, vehicles, and adequate operating budget.

Human Resources

While MWRI presently has a small cadre trained in the EIA process; additional staff will be required. As stated previously, execution of the EIA process requires a multi-disciplinary team. The required staff can be formed by training existing staff, hiring new staff, and/or using outside consultants. The disciplines that are lacking at present are in the areas of plant and animal biology, air quality, public health, and anthropology. The working groups concluded that it is not feasible for MWRI to have all the required human resources on staff and recommends using outside consultants and other GOE entities for highly specialized areas of EIA.

Financial Resources

Commitment of financial resources will be required to establish and maintain EIA capability and implement the EIA process within MWRI.

Capital to establish EIA capacity within the Ministry can be provided through GOE sources and through international donor involvement. In the past, the GOE has provided financial support of related environmental assessment activities. The World Bank is presently supporting EIA development within the GOE, and other donor groups have identified interest in providing future support in maintaining environmental units within the Ministry.

Costs of preparing EIA documents can be significant. In cases where the Ministry is acting as the developer of a project, these costs should be included with the project budget itself as a dedicated line item. In cases where the Ministry is acting as the responsible licensing authority, the cost of conducting environmental impact assessment and obtaining the appropriate permissions from the Ministry is the responsibility of the developer.

Institutional Resources

Institutional resources will be required to establish and maintain EIA capability and implement the EIA process. Within MWRI, institutional resources include but may not be limited to training, capacity building, and leadership. Presently, only a handful of MWRI personnel have undergone formal environmental impact assessment training. Additional training will be required to establish technically competent environmental units within MWRI. As the proposed EIA implementing body will be new to the Ministry, capacity building will be required to empower the fledgling environmental unit. Capacity building will require strategic placement of the unit and support from within as well as outside the Ministry. Lastly, strong leadership is necessary to establish and maintain operating protocol and procedures, and to maintain the intended direction and focus of the implementing body.

Institutional requirements necessary to implement the EIA process effectively within MWRI include:

- Political commitment;
- Institutional development;
- Institutional structure;
- Technical capacity, and;
- Administrative and legal framework.

These resources form the resource base required to institute and implement the EIA process within MWRI.

Political Commitment

Political commitment is simply the will of MWRI to institute the EIA process. Political commitment is required of top management within MWRI in support of the EIA process and is perhaps the most critical requirement for successful integration of EIA into the ministry, since, to use an old expression, "where there is a will there is a way." Without the political commitment of MWRI, there is almost no chance that the process will be effectively implemented in the future.

The organization wishing to introduce the EIA procedure within its system must therefore be committed to this act and willing to provide all the financial and technical support required to achieve this goal.

Institutional Development

A clear mission or objective is necessary before the EIA process can be effectively established with MWRI. Institutional development of the EIA process is required to establish, formalize, fortify, and define the EIA process within the institutional framework of the MWRI, and to define institutional boundaries and appropriate inter-ministerial and intra-ministerial protocol through which the EIA process can operate. The organization should have the facilities, technical background and suitable manpower to implement the proposed system effectively.

Institutional Structure

Organizational structure is required to define the formal relationship among staff members and to specify their roles and responsibilities both to the EIA process and to MWRI. Administrative systems must be developed to govern the EIA work through policies, procedures, and guidelines. These systems should be consolidated in the form of a written procedure manual. An entity or group of entities will be responsible for the implementation of the EIA system within the organization. A mechanism should be established to coordinate work among the responsible entities.

Technical Capacity

The MWRI is one of the largest ministries in Egypt. It has 23 sectors and departments. The Ministry also houses the National Water Research Center, which consists of 12 institutes carrying out research in a variety of water resources-related fields. Moreover, there are two environmental units: one in the Mechanical and Electric Department and the other in the Egyptian Public Authority for Drainage Projects (EPADP). These institutes and the environmental unit have great potential for future participation in the EIA system. However, they need capacity building in the field of EIA preparation and management.

Also, the Ministry needs to identify which projects require EIAs. The MWRI projects were classified according to the guidelines prepared by EEAA to identify the ones requiring EIA (EIA Source book, Chapter 4). A technical background providing information about the environmental, and social and health aspects of project types was included in Chapter 5 of the EIA Source book.

Administrative and Legal Framework

An administrative and legal framework is required to provide the necessary institutional operating structure and legal guidance and authority within the Ministry in order to mandate and apply the EIA process effectively and efficiently. This framework must provide:

- The power to enforce EIA recommendations;
- Correct deviations identified through application of the EIA process;

- The flexibility and capability to collaborate and coordinate both within and outside the Ministry, and;
- The technical capacity for EIA review and monitoring.

Law 4/94 on the environment is the only basis that sets the requirements for the preparation of an EIA. There is no legal body or framework responsible for implementation of an EIA system in the MWRI. However, the Ministry of Water Resources and Irrigation has realized the importance of planning for environmentally sound projects and is willing to set up an internal structure or mechanism for implementation of the system.

4.2 EIA Source book for Water Resources Development

An EIA Source book was written and prepared to serve as a guide for applying the EIA Process within the Egyptian Institutional framework. This guidebook is intended to serve as a baseline reference for application of the EIA process within the Egyptian context and was prepared as a support for the environmentally sound policy that will be adopted by MWRI. This source book is to be of general use throughout MWRI and has three main functions:

- To describe the methodology and output of EIAs;
- To provide inter-disciplinary advice related to water resources to those engaged in preparing EIAs, and;
- To enhance institutional capacity for carrying out an EIA.

The Source book presents the different roles and responsibilities of the MWRI in the EIA process as both a developer of projects as well as a Competent Administrative Authority (CAA). The guide presents the basis for preparing EIA studies and establishing environmental units within MWRI. Further, this reference recommends a methodology for grouping MWRI projects and provides lists of typical impacts associated with each of the project groups, and provides basic screening forms for MWRI project groups. Lastly, the EIA Source book recommends an EIA process for projects proposed by MWRI, as well as for projects proposed by external developers,

discusses the importance of identifying potential impacts, developing mitigation measures, and enhancing public involvement in the EIA process. It also describes the actual EIA decision-making process and how this process should be applied to fit into the MWRI's existing institutional framework. A copy of the EIA source book is included as Appendix A to this final report.

4.3 Adapting the EIA Process to MWRI

While the EIA process itself has been previously established, existing conditions within the MWRI require that it be adapted to better fit the present institutional framework of the Ministry.

Efficient implementation of an EIA system requires the presence of a strong institutional setup, in addition to the support of technical expertise. In spite of the fact MWRI staff members have expertise in different disciplines, the EIA know-how is limited. The Ministry also lacks the presence of an institutional framework through which the EIA system can be implemented and efficiently managed.

The diversity of sectors and activities within the Ministry results in a rather complex organizational structure. Moreover, different entities within the Ministry have to take part in the EIA activities, as the system should benefit from the already existing expertise within the Ministry. Accordingly, it is required to study the structure carefully in order to suggest how the EIA would fit in.

The implementation of an effective EIA system, in general, depends on the provision of sufficient political and organizational support to ensure the achievement of environmental management objectives of an institution. It also requires proper mechanisms and procedures to secure the following criteria:

- Consistency
- Standardization
- Quality Control
- Impartial review and decision-making

To fulfill and ensure those criteria, sectors or departments can be responsible for conducting the EIA; however, the process as a whole should be managed by a central body. This body should also take part in some of the activities entailed in the EIA process, as well as integrating the roles played by other entities in the Ministry.

Following are the criteria that must characterize the body responsible for managing the EIA system within the Ministry:

- Clear mandate and provisions
- Political power to implement the EIA among strong sectors
- Power to enforce EIA recommendations/reverse decisions
- Power to correct deviations from set environmental standards
- Flexibility and capability to collaborate and coordinate with sectors/ departments
- Technical capacity for EIA review and monitoring
- Human resources
- Capacity to deal with work load
- Administrative/institutional constraints
- Acceptance of the body within the Ministry
- Involvement in training and capacity building

The activities involved in the EIA process are analyzed regarding the possible roles played by different existing and suggested entities in the Ministry. Stimulating, but downscaling the existing EIA system in Egypt is regarded as the most appropriate methodology to devise and implement a system in the Ministry. Accordingly, the Ministry could benefit from the accumulated experience instead of starting an institutional setup from scratch. Table 4.1 demonstrates the potential roles played by each entity.

Table 4.1 MWRI Roles in the EIA Process as CAA and as Developer

EIA Process Activity	Competent Administrative Authority	Developer
Screening	MWRI	Sector / Department
EIA preparation	Proponent	Sector / Department
EIA Review	MWRI	Central Body & EEAA
Project Implementation	Proponent	Sector / Department
Monitoring	Proponent	Sector / Department
Post Audit	EEAA	Central Body
Quality Assurance/Review	EEAA	Central Body

The Ministry's projects are proposed by individual Sectors and/or Departments according to the national needs. Using the MWRI guidelines, they would be able to easily classify the project according to its EIA requirements (A, B or C).

When EIAs are required, the proposing sector, acting as the developer or proponent, will have to carry it out either internally, in cooperation with other technical institutions/units, or through the use of external consultants.

After the EIA is prepared, it is necessary to review it to make sure that all environmental considerations were fully integrated and that any negative environmental impacts are dealt with properly. Review of EIAs, therefore, should be carried out by another body to avoid bias and ensure impartial review. EIA review will be conducted through a suggested body within the ministry. Where technical expertise is lacking, this proposed review body should obtain the help of an external consultant (university, center, private consultants, etc)

Activities of project monitoring during construction and operation phases and post audits can be carried out by the implementing sector. However, the central body should perform quality control monitoring, which can be carried out during any stage

of the project cycle, again in order to assess environmental performance with feedback to improve the process and manage the system.

The existing environmental units cannot perform all of the above activities at present, as they do not have the necessary resources, experience or mandate.

From the above discussion, it appears that different existing bodies in the ministries can be involved in the EIA process, given sufficient technical and administrative training. Executing sectors/departments play a major natural role according to their technical expertise. However, to ensure the effectiveness of the system in the sense of consistency, quality standards and impartiality/objectivity, it is necessary, as stated earlier, to have a central body managing the system and conducting the review and quality control procedures.

Analysis of the Alternatives for Managing the EIA System

Generally speaking, two alternatives exist for creating an implementing entity for EIA within MWRI. Alternatives considered include:

- Upgrading an existing institution within MWRI, or;
- Establishing a new Central Environmental Impact Assessment Unit (CEIAU) within the Ministry.

Upgrading one of the Ministry's Existing Institutions

In spite of the fact that the Ministry's' institutions have the technical capacity needed to prepare EIAs, they lack EIA experience itself. The EIA process is a multi-disciplinary, not a mono-disciplinary process, while all the ministry's institutions are primarily mono-disciplinary. On the other hand, most of the technical expertise needed to prepare the EIAs will be drawn from the Ministry's institutions. Having any one of these institutions manage the system would risk the impartiality of the review. Moreover, none of these institutions have the capacity to undertake the load of all the Ministry's projects, which will result in delaying the EIA review process.

Establishing a CEIAU

Establishing a CEIAU in the Ministry's headquarters would have several advantages over upgrading one of the institutes. These include:

- Facilitating cooperation and collaboration within the Ministry's sectors and departments, and reducing the time needed for the EIA review and discussion;
- Better access to decision makers in the Ministry and consequent involvement in policymaking, allowing for integrating environmental issues into the Ministry's plans;
- Awareness of all the planned projects and ability to have an overall picture of the Ministry's plans, and;
- Technical support for vother institutions within the Ministry, as necessary.

Moreover, formulating a new unit will allow for properly structuring and mandating it to organize, manage and monitor the implementation of EIAs across all sectors/departments of the Ministry. It is also expected to provide a framework to ensure that all EIAs carried out within the Ministry are up to a common standard and that all EIA-based decisions are consistent. Accordingly, the unit should be granted sufficient political support and executive power in order to be able to achieve its mandate properly.

Organizational Niche of CEIAU within the MWRI

During the stakeholders workshop, different options for the proposed unit were discussed, and five alternatives for the location of the unit within MWRI were identified as follows.

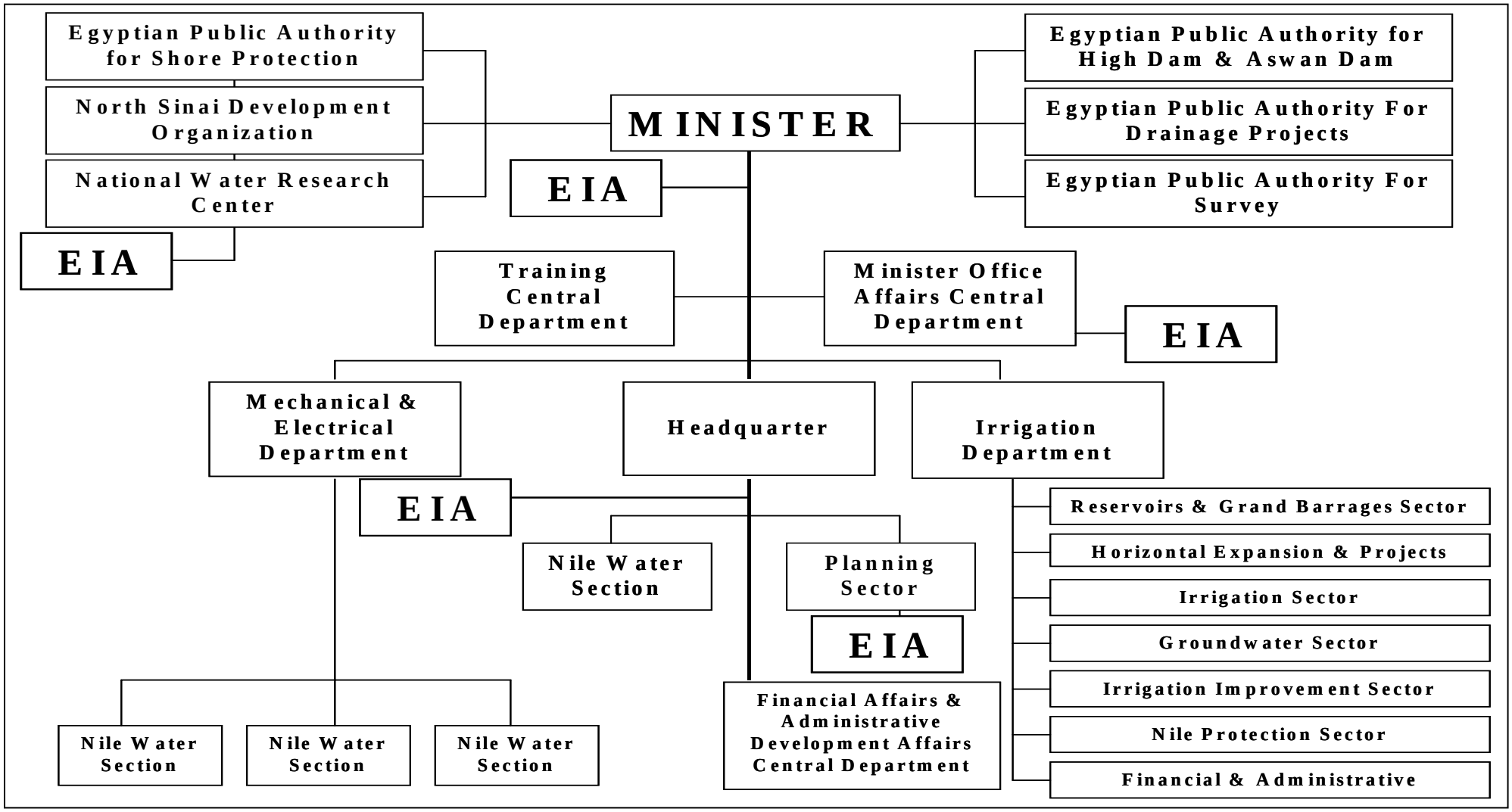
- Directly affiliated to the Minister.
- Directly affiliated to the Minister's office.
- Within headquarter.
- Within the planning sector.
- Within the National Water Research center.

There was consensus among the stakeholders that formulating a new unit will allow for properly structuring the Unit.

The stakeholders also favored affiliating the CEIAU within the Planning Sector.

Figure 4.2, following page, shows the different alternatives for location of the unit within the MWRI organizational chart.

Figure 4.2 Alternatives for Placement of the CEIAU within MWRI



It was also recommended during the stakeholder workshops to establish a top management committee from members of both the MWRI and EEAA for coordination and oversight of MWRI's EIA efforts.

This committee should have periodic meetings to discuss issues of cooperation with regard to the EIA Process and review critical EIAs as required. Most importantly, the committee will be responsible for:

- Adapting MWRI activities according to EEAA regulations;
- Solving problems resulting from conflicts between EEAA regulations and MWRI needs, and;
- Providing final review and approval for critical EIA reports.

4.4 EIA Procedures & Mechanism within MWRI

The working group considered specific procedures and mechanisms to be used to implement EIA within MWRI. The recommended mechanism is described briefly in the remainder of this section.

At the initial stages of the project planning cycle, the proposing sector or department will use the screening lists and other reference materials contained in the Environmental Source book to classify the project as having no impacts (A), minor impacts (B) or major impacts (C). Once the project is classified, the following procedure will be followed.

List A Projects

- The Environmental Screening Form A will be completed by the concerned sector or department and a copy sent to the CEIAU for record keeping;
- The CEIAU will register the documents and check whether the selected category is correct and whether the information submitted complies with the requirements;

- In case the project was misclassified as a List A project, the CEIAU will notify the department of the correct classification and send it back for correction;
- If no comments are received from the CEIAU, the department will proceed with project implementation and notify the CEIAU of project completion.

List B Projects

The procedure consists of two stages: (1) a screening (filling out Form B) possibly followed by (2) a scoped EIA on certain identified impacts/processes.

Filling Form B

- The department or sector will complete the Environmental Screening Form B and send it to the CEIAU for review and record keeping;
- The CEIAU will register the documents and check whether the selected category is correct and whether the information submitted complies with the requirements;
- In case the project was not considered a List B project, the CEIAU will notify the department of the correct classification and send it back for correction;
- If the project was classified correctly, the CEIAU will review the documents (through the use of external reviewers) and submit to the department its opinions and possible proposals for measures to be taken to ensure protection of the environment. This will be done within a stipulated period of time;
- The CEIAU registers the documents, its opinions and proposals in the EIA register;

- The department ensures implementation of the CEIAU decision and registers all information in the environmental register.

When Scoped EIA is requested

- In case the department is requested to conduct a scoped EIA study for selected impacts/processes, the department must submit a completed study to the CEIAU for review and record keeping;
- The CEIAU will register the study and will verify that the information included in the scoped EIA study complies with the required information according to the TOR;
- The CEIAU will review the documents (through the use of external reviewers) and submit to the department its opinions and possible proposals for measures to be taken to ensure protection of the environment. This review will be completed within a stipulated timeframe;
- The CEIAU registers the documents, its opinions and proposals in the EIA register;
- The department ensures implementation of the CEIAU decision and registers all information in the environmental register.

List C Projects

- The department or sector will review the environmental aspects provided for each type of project and the lists of potential impacts and mitigation measures (Annex C) for the group of projects to which it belongs;
- The department will then execute the relevant TOR for EIA preparation. The EIA team could be formed from the experts of the institutions of the MWRI and external expertise could be hired for disciplines that are not present in-house;
- After the EIA study is complete, the department will send it to the CEIAU for review and record keeping;

- The CEIAU will register the documents and confirm whether the selected category is correct and whether the information included in the EIA study complies with the required information according to relevant TOR;
- The CEIAU will evaluate the documents (internally or using external expertise) and submit to the department its opinion and possible proposals for measures to be taken in order to ensure the protection of the environment within a stipulated timeframe of receipt of the completed documents. Failure to do so within this timeframe shall be considered as an approval of the assessment;
- The CEIAU will register the documents, its opinion and proposals in the EIA register;
- The department will ensure implementation of the CEIAU decision and register all information in the environmental register.

Requirements for Initiation of the EIA System

The following steps should be followed to initiate the proposed EIA system within the MWRI:

1. A Ministerial Decree should be issued to the CEIAU stating its mandate.
2. Inside each department or sector, staff members should be designated as being responsible for the preparation of the environmental impact assessment studies and for liaison with the CEIAU. The candidate staff members will require capacity building in EIA.
3. A higher level of capacity building will be required for the staff of the CEIAU.
4. Training and capacity building should be done regularly for the different levels of EIA personnel, to ensure sustainable high performance.

5. Within the project planning stage, a separate budget should be established for the EIA process and a timeframe will be specified for EIA preparation and review.

4.5 Policy and Implementation Plan

A final policy statement and implementation plan for the EIA process within MWRI was developed from the draft statement with input and modification from the involved GOE stakeholders. A plan and timeline was also developed for establishing an environmental unit and implementing the EIA process within MWRI. This plan includes staffing, training and financing an environmental unit within the Ministry, and providing the physical resources necessary to accommodate this unit. This draft implementation plan and timeline was presented during a stakeholder workshop for discussion, modification, and approval by the joint steering committee. The environmental management policy statement, proposed implementation plan, and timeline are discussed in detail in the following chapter.

5 Recommended Policy

5.1 Policy Statement

The policy statement recommended by the working group is as follows.

> *In a phased process, a policy to strengthen and integrate the environmental dimension into all activities of the MWRI will be implemented in order to protect human and environmental health and to achieve sustainable management of natural resources while achieving the national development objectives. The procedures, mechanisms and implementation plan proposed in the Agricultural Policy Reform Project's Report No. 51, shall be the basis for executing this policy.*
>
> *In the future, integration of the environmental dimension should not be limited to new projects of the MWRI, but will be extended to all MWRI policies, plans, and programs.*
>
> *This policy will be implemented from the 1st of January, 2002.*

This draft was transmitted to H.E. the Minister and, after review and consideration, he signed it. A copy of the signed policy is included in the Executive Summary of this report.

5.2 Organizational Structure

The mandate of the CEIAU will be to introduce and integrate the environmental dimension into all MWRI activities in order to provide for the protection of human health and management of natural resources while achieving the Ministry's national development objectives.

Before designing the organization and structure of the CEIAU, the roles and responsibilities of the unit should be highlighted. These include:

- Providing policy and planning frameworks that set contexts for the EIA of projects/activities;
- Providing guidance on types of proposals likely to attract EIAs and on levels of required assessment of each category;
- Setting project-specific guidelines for different types of projects;
- Ensuring compliance of executing sectors with EIA procedures;
- Ensuring implementation of monitoring plans;
- Monitoring, evaluating and upgrading the EIA process to ensure its efficiency and effectiveness;
- Pursuing educational opportunities inherent in the EIA process and upgrading the technical skills of stakeholders, and;
- Interlinking with other environmental bodies in the Ministry.

The organization of the unit is recommended to include two sections. A Quality Control and Post Audit Section would ensure compliance with procedures and guidelines and ensure proper environmental performance. An EIA Review Section would perform an independent review of EIAs prepared within MWRI. Both sections should be supported by a common administrative staff.

The following presents the recommended responsibilities of the unit head and of both sections of the CEIAU.

The Unit Head

The general framework for the responsibilities of the CEIAU head entails planning and coordinating the unit activities. In this respect, the section heads report back to the unit head. The unit head has to be a senior staff member to gain approval among the Authorities and Department heads. He/She would be responsible for:

- Developing the working strategy for the unit, as well as the overall planning of activities, in coordination with the concerned staff members;

- Overseeing the overall proper execution of contracts for services for the different components of the management system;
- Coordinating the activities carried out by the different sections/staff members within the Unit, in order to ensure the smooth overall operation of the Unit;
- Coordinating the activities of the Unit with those carried out by concerned external entities, concerned ministries, etc.;
- Overseeing the response to complaints received related to the day-to-day performance and/or operation of the different system components (complaints from contractors and/or developers would probably be received directly at the Unit. However, public complaints would be received by the MWRI complaints office, which would then transfer them to the Unit);
- Overseeing the proper operation of the different sections, within the mandate and responsibilities of the Unit;
- Overseeing the planning of the inspection activities carried out by the Unit, and coordinating them with those carried out by other concerned bodies, if needs arise;
- Determining, with the concerned staff members, the need for training and capacity building within the Unit, and developing the necessary plans, and;
- Overseeing the identification of needs for overall future expansion of the Unit, and/or extensions of its services.

The EIA Review Section

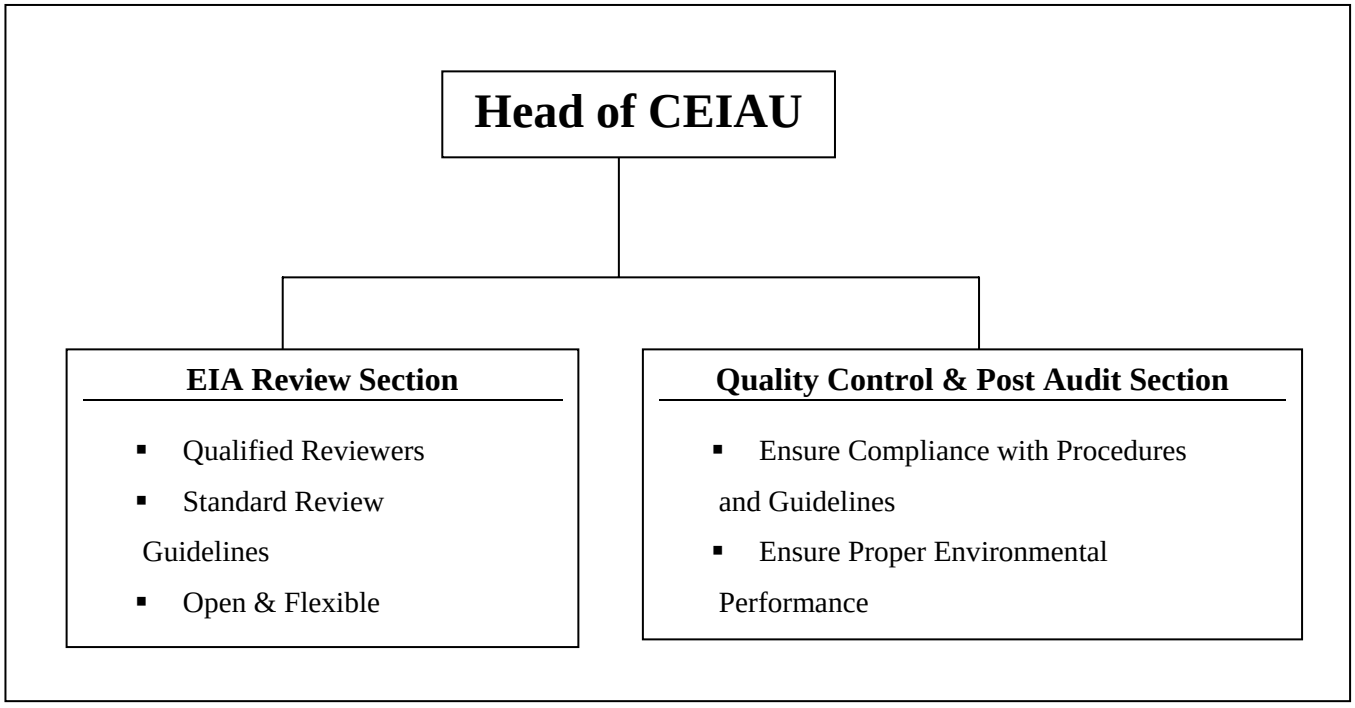
The main role of this section is to organize and manage the EIA review process. This would require understanding of the type, nature and components of the projects to be reviewed. It is also necessary to have access to a roster of qualified EIA reviewers in all fields in which the Ministry's proposals fall. Equally important is the preparation of clear guidance to reviewers on areas of review, in order to receive an objective review and final opinion regarding a specific EIA. There are several internationally accepted EIA review guidelines that could help in this task. Open and flexible

coordination and communication pathways are necessary to provide for smooth operation in a timely fashion.

Quality Control and Post Audit Section

This technical section is responsible for ensuring compliance with the Ministry's EIA procedure, standards, and guidelines. It is also responsible for carrying out post audits on operational projects to demonstrate the projects' proper environmental performance and that required environmental issues (i.e. Mitigation measures, monitoring activities) are being adequately dealt with. These steps are of paramount importance since they assume the proper environmental performance of the Ministry's projects in addition to building a good environmental image for the Ministry.

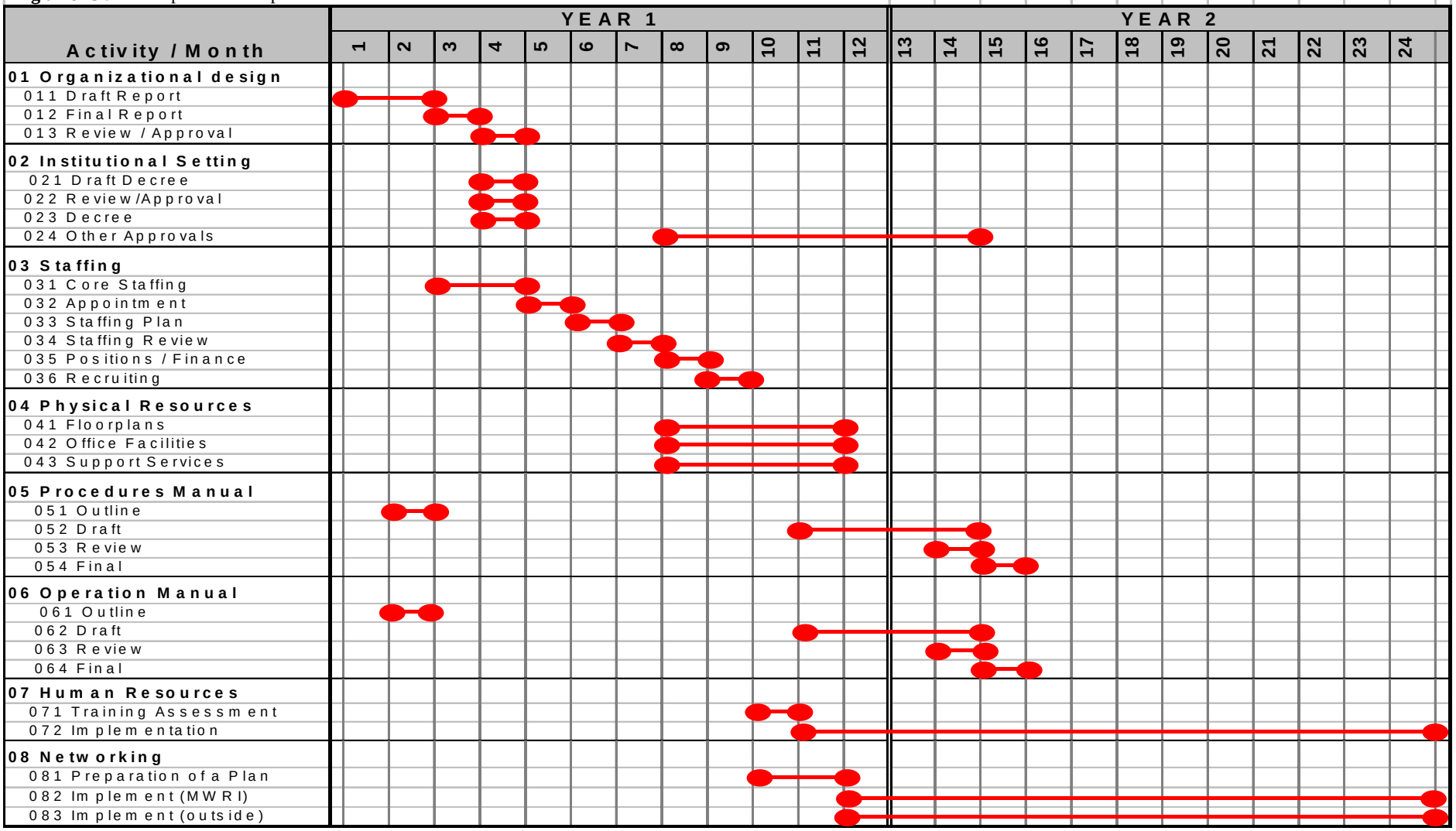
Figure 5.1 Organizational Structure of the Suggested Body



Recommended Implementation Plan

A recommended two-year plan to institute and activate the EIA process and establish a dedicated environmental unit within MWRI was developed by the Benchmark Working Group. Figure 5.2 depicts the proposed implementation plan.

Figure 5.2 Proposed Implimentation Plan for EIA Environmental Unit in M W R I



Activities included under this implementation plan include:

- Finalization of Organizational Design
- Institutional Setting
- Staffing of an environmental unit within the ministry
- Physical Resources
- Procedures Manual
- Operation Manual
- Human Resources Development
- Networking between other ministries and GOE agencies

Finalization of Organizational Design

The organizational design of the Environmental Unit and its location or placement within the Ministry will, in many ways, determine its function, performance, and effectiveness in applying the EIA process. A draft of the proposed organizational design of the Environmental Unit will be prepared within the first two months of the implementation plan for review. Comments on the draft plan will be compiled and included in the final plan to be submitted one month after review comments on the draft are received.

Institutional Setting

As with the organizational design of the Environmental Unit, the Unit's placement or institutional setting within the MWRI will have significant implications for the ability of the Unit to effectively apply the EIA process. Several alternate institutional settings have been proposed, including placing the unit directly under the office of the Minister, The Ministry's Central Affairs Department, or under the Ministry Planning Department. Final placement of the Unit within the ministerial framework will be left to the discretion of H.E. the Minister of MWRI. A draft Ministerial Decree is anticipated within the first two-weeks of the filth month of the plan. Review and approval of the draft is expected to take little more than one week. A final decree will then be issued before the end of the fifth month. Other necessary approvals will be solicited between the eighth and fourteenth months of the implementation plan.

Staffing

A two-phased staffing approach of the proposed Environmental Unit is recommended. The first phase of staffing will establish the core individuals within the Unit and will commence once the draft organizational design report is finalized. A multidisciplinary group of qualified individuals from various sectors of the ministry will make up the core of the Environmental Unit. A two-month period is designated for establishing staffing criteria and identifying required staff qualifications. A one-month period is provided for appointment of core staff within the Unit.

The second phase of staffing will be initiated during month six of the first year of the implementation plan. The Phase 2 staffing plan will identify additional technical support personnel and administration necessary to round out the Environmental Unit and make it fully functional.

Once the Phase 2 staffing plan is complete, it will be submitted for the review and approval of the Organization Department. One month is provided for review and approval of the proposed staffing plan.

Once approval of the staffing plan is obtained, the recommended positions of the Unit will be secured and financed. Financing and securing staff positions with the Environmental Unit is expected to require one month.

Once financing of the positions is secured, staff will be recruited from outside the Ministry or from existing departments within the Ministry itself. This process is expected to occur during the ninth month of the first year of the proposed implementation plan.

Physical Resources

The newly established Environmental Unit will require physical operational resources, including a dedicated area within the Ministry with in to work, as well as ancillary support services. Office area requirements and a preferred office floor plan are to be calculated and prepared over a four-month period extending from the sixth

through the tenth month of the first year of the two-tear implementation plan. Support Services are to be identified and established during the same four-month period.

Procedures Manual

Establishment of a dedicated Environmental Unit within the MWRI is a new endeavor. As such, a procedures manual will be required to define how the newly formed Environmental Unit will function and be integrated into the existing institutional framework. A four-step process for developing a final procedures manual is recommended under the proposed plan. An outline of this manual should be prepared early in the implementation plan. This outline will be completed over a two-week period during the second half of the second month. A draft of this manual will be created over a four-month period, commencing at the beginning of the tenth month of the proposed plan. The draft will be initiated once the unit is fully staffed. Review of the draft manual will be completed during the third month of drafting and a final manual will be prepared during the following month.

Operation Manual

Consistent and diligent application of the EIA process for all pertinent MWRI Project activities is paramount to the successful implementation of EIAs with the Ministry. To define consistent operating procedures of the Environmental Unit within the Ministry and between the unit and other ministries and agencies, development of an operation manual is recommended. Development of this manual is to occur concurrently with the development of the procedures manual.

Human Resources Development

Once established, training of Environmental Unit personnel will be required. An assessment of training needs will be conducted to determine the level of effort and specific training needs of the Environmental Unit. This assessment is expected to require one month and is scheduled to occur during the tenth month of the first year of the implementation plan. Implementation of the required training will commence during the end of the tenth month and will extend through the end of the second year of the implementation plan.

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