



**LIFE Integrated Water Resource Management
Task Order No. 802
EPIQ II: Contract No. EPP-T-802-03-00013-00**

**Annual Work Plan
Year 4
(October 2007 – September 2008)**

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Acronyms and Abbreviations

AAU	Agricultural Administrative Unit
AED	Academy for Educational Development (a US based entity providing USAID funded assistance regarding environmental education and awareness)
APRP	Agricultural Policy Reform Program
ASC	Alliance Steering Committee
BCWUA	Branch Canal Water User Association
CD	Central Directorate
CDA	Community Development Association
CDIAS	Central Directorate, Irrigation Advisory Service
CTO	Cognizant Technical Officer. The USAID person responsible for supervising a technical assistance contractor
CY	Calendar Year
DAI	Development Alternatives, Inc. (a Washington DC based consulting firm working with IRG to implement the project)
DBAF	Dual Biological Aerated Filter (waste water treatment process)
EEAA	Egyptian Environmental Affairs Agency
EEPP	Egyptian Environmental Policy Program (a USAID funded program aimed at achieving environmental policy reform)
EPADP	MWRI Egyptian Public Authority for Drainage Projects
EPIQ	Environmental Policy and Institutional Strengthening Indefinite Quantity Contract
ET	Evapotranspiration
FAQ	Frequently Asked Questions
FWUO	Fayoum Water Users' Organization Project
GDA	Global Development Alliance
GD	General Directorate
GIS	Geographic Information System
GOE	Government of Egypt
GPS	Global Positioning System
GW	Groundwater
GWS	Groundwater Sector
HD	(Aswan) High Dam
IAS	Irrigation Advisory Service
IBRD	International Bank for Reconstruction and Development or World Bank
ID	Irrigation Department
IDS	Irrigation and Drainage system
IIIMP	Integrated Irrigation Improvement and Management Project
IIP	Irrigation Improvement Project
IRG	International Resources Group (a Washington DC based consulting firm that is prime contractor for the IWRMP)
IRU	MWRI Institutional Reform Unit
IRs	Intermediate Results
IS	Irrigation Sector of the MWRI
IT	Information Technology
IWMD	Integrated Water Management District
IWMU	MWRI Integrated Water Management Unit
IWRM	Integrated Water Resources Management
IWRMP	Integrated Water Resource Management Project
LAN	Local Area Network

LIFE	Livelihood and Income from the Environment (project)
LOE	Level of Effort
M&E	Monitoring and Evaluation
MALR	Ministry of Agriculture and Land Reclamation
MED	MWRI Mechanical and Electrical Department
MIC	MWRI Ministry Information Center
MISD	Matching Irrigation Supply and Demand
MOE	Ministry of Education
MOH	Ministry of Housing
MOU	Memorandum of Understanding
MSEA	Ministry of State for Environmental Affairs
MS	Master of Science
MWRI	Ministry of Water Resources and Irrigation
NGO	Non-Governmental Organization
NWRC	MWRI National Water Research Center
O&M	Operation and Maintenance
OJT	On-the-Job Training
PM&E	Performance Monitoring and Evaluation
RSC/WP	Red Sea Coastal/Water Project, short name for USAID Red Sea Coastal and Improved Water Resource Management Project
RWP	Relative Water Supply
SIRs	Sub-Intermediate Results
SOs	Strategic Objectives
STTA	Short-term Technical Assistance
TA	Technical Assistance
TOR	Terms of Reference
USA	United States of America
USAID	United States Agency for International Development
WCU	MWRI Water Communication Unit
WDC	MWRI Central Water Distribution Center
WPRP	Water Resources Results Package
WQU	MWRI Water Quality Unit
WUA	Water User Association

1. Introduction

1.1 Authorization

Under the United States Agency for International Development/Egypt (USAID/Egypt) funded Livelihood and Income from the Environment (LIFE) Integrated Water Resources Management (IWRM) Project (Contract No. EPP-I-802-03-00013-00 Task Order 802), International Resource Group (IRG), in association with the Academy for Educational Development (AED), Development Alternatives, Inc. (DAI), ECODIT, Environmental Quality International (EQI), Montgomery Watson Harza (MWH), and Training Resources Group, Inc. (TRG), together, are responsible for assisting the Government of Egypt (GOE) to promote integrated water resources management. The period of performance for the contract is October 1, 2004–September 30, 2008.

1.2 Purpose of Report

The purpose of this report is to present the LIFE/IWRM Annual Work Plan for Year 4 (October 2007–September 2008). The Annual Work Plan has been prepared based on agreements reached in an annual planning workshop and coordination meetings attended by key representatives of the technical assistance (TA) team, USAID, the Ministry of Water Resources and Irrigation (MWRI), and other key stakeholders.

The Annual Work Plan includes information on outputs that will contribute to achievement of each objective and related tasks, the inputs required, and level of effort needed. Flow charts are provided setting out all tasks to be completed, individual responsibilities for task completion, task durations, critical paths for task completion, and links to the Monitoring and Evaluation Plan (M&E) indicators and targets. The Annual Training Plan and Annual Procurement Plan are included as annexes.

1.3 Project Objectives

The GOE is implementing an aggressive irrigated agricultural area expansion program. This is in turn reducing the supply of water per feddan. In addition, the high cost of operating and maintaining the water delivery infrastructure is a serious strain on the national budget because farmers pay a very low portion of the actual costs. This is further compounded by decreasing water quality as the water conveyance system is increasingly used for waste disposal.

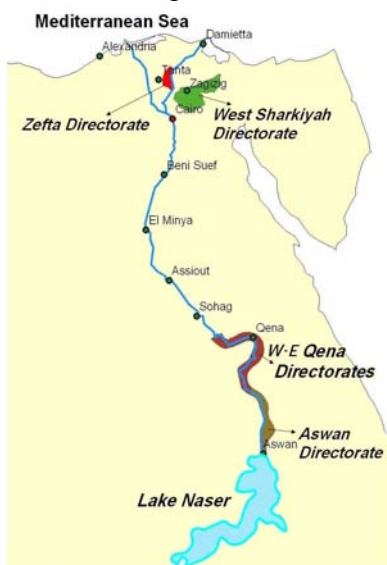


Figure 1 LIFE/IWRM Project Location Map

The objective of LIFE/IWRM is to provide technical assistance, training, and commodities in support of the decentralization of water management decision making and an increased participation of all rural inhabitants in such decision making in two priority geographical areas and five Irrigation Directorates: New Zifta and West Sharkiya in Lower Egypt, and West Qena, East Qena and Aswan in Upper Egypt, as shown in Figure 1.

With decentralization and participation, USAID expects greater civic responsibility in maintaining the water conveyance infrastructure and improvements in the quality of local water resources through better management. The objectives are

expected to be achieved through the formation and development of functional and sustainable Branch Canal Water User Associations (BCWUAs) and Integrated Water Management Districts (IWMDs), and improving the capacity of stakeholders to manage solid and liquid wastes in the targeted directorates.

SUB-OBJECTIVE 1. Rural inhabitants accrue immediate and long-term economic benefits from participating in water management decision making and governance of the water conveyance infrastructure.

SUB-OBJECTIVE 2. Local communities and private associations participate in water resources decision making, accept responsibility for maintaining the water conveyance infrastructure, and adopt improved management practices for solid and liquid wastes.

There are seven tasks under three performance requirement categories to be implemented under the LIFE/IWRM Program.

A.1 Performance Requirement I: Decentralized Management of Water Resources

1. Formation of Integrated Water Management Districts
2. Formation of Branch Canal Water Users' Associations
3. Equitable Allocation of Water Resources

A.2 Performance Requirement II: Stakeholder Engagement in Water Resources Management

4. Improved Maintenance and Upgrading of Water Management Equipment
5. Environmental Services for Improving Water Quality Management
6. Improved Wastewater Reuse Practices

A.3 Performance Requirement III: Capacity Building of MWRI staff

7. Graduate Degree Training for MWRI staff

There are also a number of issues that are common to all the tasks. These cross-cutting issues include commodity purchases; workshops and training; monitoring and evaluation; donor coordination; public awareness, information, education, and communications; and gender.

The LIFE/IWRM works closely with the MWRI Integrated Water Management Unit (IWMU), four Undersecretaries, five General Directors, 27 IWMDs, and other key stakeholders.

To facilitate implementation and to resolve any inter-sectoral issues, high level coordination is provided by a steering committee made up of the following members:

- Eng. Gamil Mahmoud, Chairman (MWRI Special Consultant to H.E. Minister)
- Chairman, Irrigation Department
- Chairman, Egyptian Public Authority for Drainage Projects
- Chairman, Mechanical and Electrical Department
- Head of Sector - Minister's Office
- Director, Institutional Reform Unit
- Coordinator, Integrated Irrigation Improvement and Management Project
- USAID representative
- LIFE/IWRM representative

2. Work Plan Components

2.1 A.1: Performance Requirement I: Decentralized Management of Water Resources

Task 1: Formation of Integrated Water Management Districts

The overall objective of this task is to assist MWRI in integrating all its district level delegations into Integrated Water Management Districts in the five target Directorates of New Zifta, West Sharkiya, East Qena, West Qena, and Aswan. Subsidiary goals are to support MWRI in order to:

- Decentralize the implementation and coordination of water management activities (notably O&M) by empowering IWMDs.
- Streamline internal communication flows, limit redundancies and make staff available for new tasks such as monitoring of water resources.
- Encourage water user participation with the IWMD as sole local MWRI entity and sole contact point for water users.
- Build and support a strong partnership between IWMD staff and water user representatives.
- Promote IWRM as a decentralized and participatory approach to manage water resources in a sustainable manner.

It is envisioned that this integrated approach will notably lead to:

- Enhanced maintenance planning and reduced maintenance costs.
- Better knowledge of water needs and supplies.
- Improved conflict management.

Since water resources will be used in a more efficient, sustainable manner, they will bring higher economic, social and environmental returns.

The process for establishing and strengthening IWMDs involves the following steps:

- Ministerial decree initiating the process.
- Definition of IWMDs boundaries and assignment of IWMD directors (decrees).
- Preparation of organizational plan and assignment of staff.
- Transfer of facilities and equipment from other MWRI entities.
- Revision of roles and responsibilities of IWMD staff.
- Preparation and implementation of action plans such as maintenance plan (and eventually integrated water management plan, see Task 3).

During Year 1 of the project, all irrigation and drainage districts were consolidated and restructured into IWMDs in the five target Directorates:

Directorate	Former irrigation districts	Original IWMDs	IWMDs formed during Year 1	Total IWMDs
New Zifta	5	1	4	5
West Sharkiya	5	1	4	5
East Qena	6	1	3	4
West Qena	6	1	4	5
Aswan	6	0	8	8
Total	28	4	23	27

During Year 2 and 3 the Consultant built the capacity of IWMDs and Irrigation General Directorates (GD) by supporting preparation of monthly progress reports, annual maintenance plans and budgets, updating of base maps, revision and clarification of responsibilities within MWRI, IWMD management and monitoring capacity building, training and awareness raising.

The key objective during Year 4 will be to focus on activities oriented toward achieving sustainability of the IWMDs after the completion of the Project. During Year 4 the Consultants will continue to build the capacity of the General Directorates to support, empower, and monitor the IWMDs. This will be done working closely with the GDs and IWMDs to strengthen their ability to maintain high levels of skilled staff, receive sufficient budget, maintain equipment, and continue the use of data management tools provided under the Project. The following activities are proposed:

- Continued support in preparing annual integrated maintenance plans.
- Assistance with ensuring all key positions are filled with qualified staff.
- Strengthen Directorate and District training capabilities.
- Support Directorates and Districts with monthly meetings and reports.

Several formal training courses are envisioned to ensure sustainability of the IWMDs and GDs:

- Directorate & IWMD training courses by local staff to include basic computer skills and computer maintenance.

The expected outputs for Task 1 during Year 4, the final year of the Project, include:

- Transfer of Project role to IWMDs, GDs, and other responsible MWRI entities.
- Improved maintenance processes with budget allocated in accordance with priorities set by IWMDs and BCWAUs.
- IWMDs properly staffed with qualified persons.
- Full use of equipment and data management tools provided through the Project.
- Improved management procedures (monthly reports and meetings) institutionalized by IWMDs and GDs.
- IWMDs and GDs able to maintain performance without Project support.

Figure 2 is a flow chart showing the activity schedule for Year 4.

The primary cooperating partners for this activity continue to be the MWRI/IWMU, the target GDs, and the IWMDs. Most of this work is being done by MWRI staff with the TA team providing training, strengthening processes, promoting systematized approaches, and assisting with process documentation.

Because the primary focus of the work is in the five target Directorates, IRG has recruited two experienced long-term senior water resource management specialists to serve as regional advisors. An advisor for Lower Egypt is stationed in Zagazig; an advisor for Upper Egypt is stationed in Qena. MWRI has provided offices on the MWRI premises for the advisors and IWMU has provided one engineer in Zagazig and another in Qena to support the regional advisors.

Figure 2 Year 4 Schedule for Task 1: Formation of IWMDs

Task No. 1: Formation of IWMDs - Year 4 Schedule

Activities	Sub-Activities	Year 4				Outputs	Year 4 Targets
		Q1	Q2	Q3	Q4		
1. Support to Establishment of IWMDs	1.1 Provision of guidelines for IWMD definition					MWRRI decrees to officialize IWMDs - Base maps for each IWMD	100%
	1.2 Preparation of base maps						
	1.3 Facilitation until finalization through decrees						
2. Support to preparation of organizational plans and transfer of staff	2.1 Facilitation of assignment of IWMD Managers					Organizational plans approved	100%
	2.2 Provision of guidelines for preparation of organizational plan						
	2.3 Support/training for preparation of organizational plans						
	2.4 Facilitation of transfer						
3. Support to transfer of facilities and equipment	3.1 Awareness raising at different levels of ID, EPADP, MED					Equipment /facilities transferred	100%
	3.2 Support to inventory of facilities/equipment						
	3.3 Facilitation of transfer						
4. Support to preparation of maintenance plans and budget requests	4.1 Provision of guidelines for preparation of maintenance plans					Maintenance plans prepared by IWMDs - Improved implementation & monitoring	100%
	4.2 Trainings on preparation of maintenance plans						
	4.3 Support for preparation of maintenance plans						
	4.4 Monitoring and Evaluation						
5. Revision/clarification of roles and responsibilities	5.1 Inventory of existing roles and responsibilities					Clear roles and responsibilities for all IWMD staff	100%
	5.2 Revision and clarification of mandates						
6. Support to IWMD management and performance monitoring	6.1 Building of management capacity					Monthly reports and meetings	100%
	6.2 Monitoring of IWMD performance						
7. Training and capacity building activities	7.1 Preparation of annual training plan					Number of training courses delivered	100%
	7.2 Preparation of training modules						
	7.3 Implementation						
	7.4 Monitoring and Evaluation						

Direct activity
 Facilitation, capacity-building, follow-up

Task 2: Formation of Branch Canal Water Users' Associations

The overall objective of this task is to enhance decentralized water management decision making and increased participation of all water users in such decision making. Greater civic responsibility can be expected in maintaining the water conveyance infrastructure and protecting the quality of local water resources through better management of locally generated liquid and solid wastes. To that end, the approach is to form and activate functional and sustainable Branch Canal Water Users Associations (BCWUAs). Subsidiary goals are to:

- Promote participatory approaches in all aspects of water management.
- Build capacity of the supporting MWRI institutions to form and strengthen Water User Associations) WUAs.
- Empower water users to better assess their needs and priorities, solve local scale conflicts and issues on their own, and partner with MWRI staff to solve large-scale issues.
- Improve decision making at local level by developing strong links between IWMD staff and WUA representatives, this partnership leading to:
 - Improved maintenance planning and reduced maintenance costs.
 - Better monitoring of water allocation and better conflict management.
 - Improved water quality (through better control of solid and liquid waste disposal).
 - Rapid response to water delivery problems.

The MWRI has 15 years experience establishing WUAs in Egypt, through various projects and with increasingly promising results. Most of these projects were implemented as pilot activities with the objective to demonstrate the benefits and sustainability of WUAs. Benefits from water user participation are now being acknowledged by both MWRI staff and water users. Since 2003, USAID has been funding the large-scale formation of BCWUAs, starting with 94 BCWUAs established in four initial districts in 2003-04.

During Year 1, 2, and 3 the LIFE IWRM Project supported the additional formation of over 500 BCWUAs. There are now 601 BCWUAs covering all the branch canals in the 27 target districts. The key principles for this large-scale effort were to streamline the BCWUA formation process, by:

- Increasing the awareness that BCWUAs are an opportunity with clear benefits for motivated MWRI staff and water users.
- Building the capacity of MWRI staff, chiefly at IWMD level, to support BCWUA development, now and in the future.
- Empowering IWMDs to partner with BCWUAs to promote participatory water management activities.

During Year 4 of the Project, the Consultant intends to continue to help strengthening the BCWUAs and their partnership with the IWMDs. The objective is to get water users involved in water management so that they actively participate in a more efficient and equitable use of water resources, while their needs and priorities are better identified and addressed by the MWRI. To achieve this objective, the following activities are proposed:

- Preparation of guidelines and training modules on participatory water management, and planning of participatory water management activities.
- Training of IWMD and BCWUA staff in the principles and practices of participatory water management.

- Monitoring of the performance of IWMDs and BCWUAs.

Participatory water management activities considered for BCWUAs include:

- Preparation of Annual Action Plans.
- Monthly, seasonal, and annual meetings with the BCWUA Board, IWMD, and Directorate level.
- BCWUAs local awareness meetings with users and representative assembly members.
- Compiling success stories.
- Assigning roles and responsibilities to BCWUA Board members.
- Monitoring of branch canal water supply.
- Preparation and implementation of water allocation plans within a branch canal (i.e. among mesqas).
- Direct implementation of small-scale canal maintenance activities by BCWUA members.
- Monitoring canal maintenance by contractors.
- Prevention and resolution of violations and complaints.
- Implementation of environmental services (e.g. solid waste collection) to improve water quality.
- Assisting IWMD staff to assess cropping patterns and water needs and thus improve matching irrigation demand and supply.
- Maintaining membership list and relevant process documentation.

A specific training course will be developed and delivered to build the capacity of IWMD staff so that they can encourage, assist, and train the BCWUAs to plan and carry out such activities.

In parallel, the Consultant will keep disseminating awareness material on the benefits of water user participation and also support awareness events involving representatives from local councils, government and non-government agencies, and from religious, civic, business, and education communities.

Figure 3 is a flow chart showing the activity schedule for Year 4.

The expected outputs/results for Task 2 during Year 4 are the following:

- Additional awareness activities and materials to promote water user participation.
- Staff trained in each IWMD to assist and train BCWUAs in their roles and responsibilities under participatory water management.
- IWMDs and Directorates actively working with BCWUAs.
- Strengthened and sustainable BCWUAs.
- Effective monitoring of BCWUA activities.
- BCWUAs partnering with IWMDs and involved in water management activities.
- Effective water management improvements due to water user participation.

The primary cooperating partner for Task 2 will be IWMD staff in all five target Directorates, key stakeholders, and IWMU. The MWRI Water Communication Unit will assist with public awareness activities.

Figure 3 Year 4 Schedule for Task 2: Formation of BCWUAs

Task No. 2: Formation of BCWUAs - Year 4 Schedule

Activities		Sub-Activities	Year 4												Outputs	Year 4 Targets	
			Q1			Q2			Q3			Q4					
1. Standardization of BCWUA formation process	1.1	Updating of process														Streamlined BCWUA formation process	100%
	1.2	Updating of guidelines															
	1.3	Updating of training material															
2. Awareness raising activities	2.1	Preparation of materials														Awareness material and events	100%
	2.2	Support to awareness events															
3. Training of IWMD staff for BCWUA formation and activation	3.1	Orientation														Trained staff in each IWMD	120%
	3.2	Preparation															
	3.3	Establishment															
	3.4	Activation															
	3.5	Participatory Water Management (PWM)															
4. Monitoring of BCWUAs	4.1	Updating of M&E tools														Process docum for BCWUAs	100%
	4.2	Monitoring of BCWUAs															
	4.3	Support to production of process documentation															
5. Support Participatory Water Management	5.1	Update of guidelines for Part. Water Management														Participatory Water Management activities implemented	100%
	5.2	Planning of Part. Water Management															
	5.3	Support to Part. Water Management activities															
	5.4	Support to BCWUAs Org/Inst. Strengthening															
	5.5	Monitoring															

Direct activity
 Facilitation, capacity-building, follow-up

Task 3: Equitable Allocation of Water Resources

The objective of Task 3 is to improve water management decision making processes within the MWRI by providing decentralized tools for improved data collection, analysis and use. The first and most critical sub-task is to achieve equitable water allocation via the “Matching Irrigation Supplies and Demands” (MISD) program at both district and directorate levels, i.e. to achieve better assessment of demands, and better control of allocations through enhanced water monitoring. The other sub-task is to build database management capacity at both district and directorate levels to support Integrated Water Resource Management. This second sub-task is cross-sectoral as it also supports the implementation of Tasks 1 and 2, as well as M&E and communication activities. The following are specific objectives for Task 3:

- Improve water monitoring capacity, procedures and systems at both district and directorate levels.
- Increase knowledge of water resource use and availability (for surface and groundwater resources, quantitatively and qualitatively).
- Build database management capacity to improve water management decision making.
- Promote and support volume based water allocation among canals.
- Achieve equitable water allocation via the “Matching Irrigation Supplies and Demands (MISD)” program at both district and directorate.
- Promote participatory and integrated approaches in water allocation and management.

The process for improving water management in the newly formed IWMDs involves the following steps:

- Selection and assignment of water monitoring and distribution staff within each IWMD.
- Procurement of computer and water monitoring equipment.
- Development of water monitoring program and training of the staff.
- Installation of water monitoring databases.
- Preparation and implementation of MISD and water monitoring programs.
- Preparation and implementation of water resource inventories, water allocation and management plans.

During Year 1, 2, and 3 of the project, data based management has been initiated by the IWMDs and the Directorates.

All IWMDs have been provided with:

- Office equipment (computers, printers, scanner, photocopier, fax machine)
- Water monitoring equipment (current meters, water quality meters)
- Survey equipment (GPS, digital cameras)
- Updated databases, paper and digital maps

Corresponding training activities (basic computer use, computer maintenance, use of databases, etc.) were carried out. Flow and quality monitoring networks were established in each IWMD. Major inflow and outflow canals, drains, and structures have been calibrated to determine flow discharges. Data collection efforts were started and are ongoing, with the data being entered into databases for storage, analysis, and consolidation. MISD, water level, complaint, groundwater, and water quality databases have been installed at each IWMD and Directorate. IWMDs are now capable of comparing monthly supply with demand and adjusting water allocation to each District. Ministry of Agriculture and Land Reclamation

(MALR) and MWRI are collaborating on estimating seasonal cropped area. Digital mapping is being used to make decisions on irrigation scheduling and service area

The key objective during Year 4 will be to focus on sustainability of the data based water management program. The Consultant will support this effort through the following proposed activities:

- Continued assistance to flow monitoring and water quality monitoring programs focusing on analysis and decision making. Support will be provided for expanding the calibration program, developing Directorate capability to support and maintain the data logger equipment, canal operations training, continuing to hold regular Directorate water distribution coordination meetings, and preparation of periodic monitoring reports.
- Facilitation of field data inventories (water structures) and improved water distribution processes.
- Strengthening of the MISD Program through improved coordination between MWRI and MALR focusing on agreement on actual irrigated areas.
- Population and maintenance of water resources databases (water level and flow monitoring, MISD, water quality, groundwater, complaints). Support will be provided to ensure continued MWRI support and maintenance capability at Directorate and Central level.
- Guidance in preparation and implementation of the Annual Integrated Water Distribution Plan for each IWMD.
- Improve coordination and two way transfer of information between IWMDs, Directorates, and Central level through data transfer, monthly coordination meetings, and preparation of integrated water management plans.
- Development of Directorate capacity to conduct training.
- Carrying out corresponding training events.

The Consultant will continue to facilitate the collaboration between the IWMDs, BCWUAs, the Irrigation General Directorates, Ground Water Sector, Water Quality Unit, Telemetry, Central Directorate for Water Distribution, and MALR to improve the flow of information, reinforce the capacity for continuous flow monitoring and strengthen the decision processes for water allocation.

Several formal training courses to build the capacity of MWRI staff within IWMDs and General Directorates are programmed as follows:

- Maintenance of water level, MISD, groundwater, water quality, and complaints data base software
- Canal operation
- Integrated water resource management planning
- Digital mapping refresher
- Refresher flow calibration training by Directorate staff

Figure 4 is a flow chart showing the activity schedule for Year 4.

The expected outputs for Task 3 during Year 4 are the following:

- Continued collection of quantitative and qualitative water data within each IWMD, and each General Directorate.
- MISD water requests and water allocation plans regularly prepared by IWMDs.

- Water databases installed and utilized by IWMDs and Directorates and data transferred to Central level.
- Digital maps available and regularly updated by IWMDs and Directorates.
- Improved data-based water management decision making.
- Transfer of Project role to IWMDs, GDs, and other responsible MWRI entities.
- Improved computer and equipment maintenance process with sufficient budget allocated in accordance with priorities set by IWMDs and BCWUAs.
- IWMDs properly staffed with qualified persons.
- Full use of equipment and data management tools provided through the Project.
- Improved management procedures (monthly reports and meetings) institutionalized by IWMDs and GDs.
- IWMDs and GDs able to sustain performance without Project support.

Major partners for this activity will include IWMU, Water Quality Unit, Groundwater Sector, Telemetry Unit, the Central Directorate for Water Distribution, Ministry Information Center, Directorate and IWMD staff, MALR, and the BCWUAs.

Figure 4 Year 4 Schedule for Task 3: Equitable Allocation of Water Resources

Task No. 3: Equitable Allocation of Water Resources - Year 4 Schedule

Activities	Sub-Activities	Year 4				Outputs	Targets Year 4
		Q1	Q2	Q3	Q4		
1. Institutional arrangements	1.1 Support to definition of IWMD boundaries					IWMD distribution staff assigned	100%
	1.2 Selection of water distribution staff						
	1.3 Guidelines for responsibilities of water distribution staff						
2. Water monitoring	2.1 Guidelines for definition of water monitoring networks					Monitoring networks, water monitoring data (flow and quality)	115%
	2.2 Procurement of water measurement equipment						
	2.3 Trainings on water measurement						
	2.4 Procedures for data-based water management						
3. MISD	3.1 Installation of MISD database					Water requests and allocation plans prepared by IWMDs and Directorates	100%
	3.2 Guidelines for water requests and allocation plans						
	3.3 Support for preparation of water requests & allocation plans						
	3.4 Monitoring and Evaluation						
4. Water resource databases	4.1 Updating of water resource databases					Computer water management systems in IWMDs and Directorate	100%
	4.2 Procurement and installation of computer systems						
	4.3 Training for computer and database use						
	4.4 Procedures for databases maintenace and training						
5. Digital mapping and BC data	5.1 Procurement of computers					Digital mapping systems in Directorates	100%
	5.2 Provision of support maps						
	5.3 Support to inventories of water data, preparation of base maps						
	5.4 Training and monitoring						
6. Integrated water management planning	6.1 Guidelines for water resource inventories/water balances					Water resource inventories and management plans	100%
	6.2 Support to preparation of water inventories/water balances						
	6.3 Guidelines for integrated water management plans						
	6.4 Support to preparation of integ water management plans						
7. Training and capacity building activities	7.1 Preparation of annual training plan					Number of training courses delivered	100%
	7.2 Revision of training modules						
	7.3 Implementation						
	7.4 Monitoring and Evaluation						

Direct activity
 Facilitation, capacity-building, follow-up

2.2 A.2: Performance Requirement II: Stakeholder Engagement in Water Resources Management

Task 4: Improved Maintenance and Upgrading of Water Management Equipment

The purpose of this Task was to assess the capacity of the Governorate technical schools administered by the Central Department of Technical Education within the Ministry of Education (MOE) to provide training in the repair and maintenance of agricultural and irrigation equipment and in business management. A rapid assessment of both vocational and technical schools in the Project's priority Governorates was conducted and a report submitted to USAID in September 2005. USAID requested an updated assessment that included data collected from additional focus group meetings with newly formed BCWUAs and an extended pump maintenance workshop survey. The final report "Updated Assessment of Egyptian Farmers' Need for Improved Maintenance of Irrigation Equipment and Training to Manage Water Users' Associations" was prepared and submitted to USAID in November 2006.

Based on discussions held with USAID and MWRI on the updated assessment, the following is proposed for implementation during Year 4:

- Prepare materials for raising awareness of BCWUA members (farmers) regarding maintenance of irrigation pumps
- Conduct training sessions for BCWUA Chairpersons on raising awareness of their membership regarding pump maintenance

The expected outputs for Task 4 during Year 4 are the following:

- BCWUA Chairpersons receive training materials on pump maintenance for use in conducting awareness training of their membership

Partners for this activity will include IWMU, WCU, IWMD staff, and BCWUAs.

Task 5: Environmental Services for Improving Water Quality Management

The extent of the problem of solid and liquid wastes and their adverse affect on the water quality of irrigation, drainage, and groundwater systems in the five target Directorates is well documented (“Management of Solid and Liquid Wastes for IWMD and General Directorates”, H. Dorrah and H. El-Zonfely, September 2004). LIFE/IWRM is implementing a pilot activity to address this problem. This is being done using guidelines established under the MWRI policy for stakeholder participation in decision making (EPIQ Report # 50, Public Participation in Decision making, Dec. 2001) and includes the following steps:

- Stakeholder Mobilization
- Data Collection and Problem Definition
- Assessment of Alternative Methods for Wastewater Treatment and Reuse and Solid Waste Management
- Pilot Projects
- Formation of Management Consortia
- Training and Awareness Raising

5.1 Senbo Pilot Project

One target branch canal in an existing IWMD (Senbo, South Zifta IWMD) where a BCWUA had already been established was selected as a pilot project area.

During Years 1, 2, & 3 of the Project the following activities were completed:

- Selection of a Pilot area: Senbo Branch Canal in S. Zifta District, Zifta Irrigation Directorate, Gharbiya Governorate
- A pilot area survey on trends in solid and liquid waste disposal/reuse behavior
- A water quality monitoring plan for the pilot area
- An analysis of existing solid and liquid waste disposal practices and an assessment of alternative disposal/reuse methods
- A feasibility plan describing alternatives and interventions with recommendations for implementing the pilot project that included costs, economic and financial feasibility of alternatives, O&M requirements, institutional constraints and requirements, etc.
- Stakeholder mapping plan
- Process documentation of all stakeholder meetings, focus group meetings, and training activities
- Design reports for all funded interventions to include cost recovery and financing plans, O&M plans, staffing plans, institutional requirements, and follow-up support requirements
- Assistance in expanding the existing domestic solid waste collection system in the pilot area through a public awareness program (Clean-up week)
- Technical support to initiate agricultural waste recycling program
- A 600 m³/day Dual Biological Aerated Filter (DBAF) waste water treatment facility was constructed, tested and put into operation
- Five persons were employed under an OJT program by the Project to operate the DBAF
- Provided training and public awareness activities to support pilot programs

During Year 4 LIFE/IWRM will continue the original scope of Task 5 with the following:

- Continue monitoring water quality in the drain close to the Senbo pilot area where the effluent of the DBAF system is discharged.
- Provide support to CDA/BCWUA to transfer operation and maintenance of the DBAF treatment plant.
- Provide training and public awareness activities as needed to support the first Pilot program.

The expected output for the original Task 5 scope of work in Year 4 is the transfer of the Senbo Wastewater Treatment facility to Tanta Wastewater Company and/or CDA.

5.2 Global Development Alliance (GDA)

Because of the success of the Senbo pilot program USAID expanded the LIFE/IWRM contract scope of work and provided additional funds to accommodate a GDA initiative “Environmental Services for Improving Water Quality Management in Rural Areas of Egypt” between the Coca Cola Africa Foundation, USAID, MWRI, IRG and UNICEF.

The overall objective of the GDA will lead to:

- Improved water resources quality
- Reduced water health hazards
- Increased water productivity

This effort will be accomplished by utilizing the following general steps:

- Stakeholder Mobilization
- Data Collection and Problem Definition
- Assessment of Alternative Methods for Wastewater Treatment and Solid Waste Management
- Pilot Projects
- Formation of Management Consortia
- Training and Awareness Raising

During Year 4 of the project, the Consultant will:

- Provide project management and coordination support to the Alliance Steering Committee (ASC) including establishment of criteria for site selection and stakeholder meetings.
- Monitor water quality in canals and drains as required.
- Implement the design, construction and testing of three wastewater treatment facilities.
- Procure and contract for delivering services and commodities, including equipment for agricultural waste recycle and water quality measurements.
- Provide training on operation and maintenance of the liquid waste facilities and agricultural recycle program.
- Provide technical assistance to UNICEF as needed, including assistance with the public awareness program.
- Support ASC to facilitate collaboration between alliance partners when appropriate and as requested.

Figure 5 is a flow chart showing the GDA activities for Year 4.

The expected outputs for Task 5 GDA activities for Year 4 are:



- Three new wastewater treatment facilities in three sites constructed and operated under the GDA activity.
- Two agricultural recycle programs implemented under the GDA activity.
- Training to CDAs and BCWUAs in the new pilot areas on agricultural recycle and operation and maintenance of the wastewater treatment facilities conducted.

Key partners will include the Alliance Steering Committee; UNICEF; pilot area BCWUAs, Community Development Associations, local councils, local communities, and IWMDs; Governorate and local officials of the MOH, MWRI and MALR; and MWRI IWMU, MWRI Central Laboratory, MWRI Water Quality Unit, and MWRI Water Communication Unit.

Figure 5 Year 4 Schedule for Task 5: Environmental Services for Improving Water Quality Management

Task No. 5: Environmental Services for Improving Water Quality Management Project Schedule - Year 4 Schedule

	Activities	Sub-Activities	Year 4				Outputs	Year 4 Targets	
			Q1	Q2	Q3	Q4			
Task No. 5.1: Senbo Pilot	1. Collect and Review Data on Existing Solid and Liquid	1.1 Collect and review secondary data						Waste Water Reuse Profile Prepared	100%
		1.2 Collect and review field data							
		1.3 Identifying areas requiring intervention and plan of action							
		1.4 Water quality monitoring							
	2. Stakeholders Mobilization	2.1 Identify and develop cooperative linkage with key players						Working Groups Formed	100%
		2.2 Stakeholder focus group mtgs. & formation of working groups							
	3. Assess Alternative Methods for Treatment and Disposal/Re-Use of Solid Waste and Wastewater	3.1 Identify disposal, treatment and re-use methods						Solid & Liquide Waste Reuse Alternatives	100%
		3.2 Analysis of alternative and selection of methods							
	4. Pilot Projects	4.1 Selection of pilot project area						Pilot Project Implemented	100%
		4.2 Implementation of pilot activities in pilot Areas							
		4.3 Monitoring Operation of the pilot activities							
	5. Formation of Management Consortia	5.1 Selection of members and setting up the institutional structure						Management Consortium Formed	100%
		5.2 Formalization of the consortia							
	6. Training and Awareness Raising	6.1 Inception workshop						Public Awareness Workshops held	100%
		6.2 Public Hearing							
		6.3 Training workshops							
		6.4 Public Awareness workshops							

 Direct activity
 Facilitation, capacity-building, follow-up

	Activities	Sub-Activities	Year 4				Outputs	Year 4 Targets	
			Q1	Q2	Q3	Q4			
Task No. 5.2: GDA	1. Establishment of ASC and Selection of sites	1.1 Establishment of ASC						Waste Water Reuse Profile Prepared	100%
		1.2 Develop site selection criteria and selection of sites							
		1.3 Baseline survey							
		1.4 Data collection and monitoring water quality							
	2. Stakeholders Mobilization	2.1 Identify and develop cooperative linkage with key players						Working Groups Formed	100%
		2.2 Stakeholder mtgs. & formation of working groups							
	3. Assess Alternative Methods for Treatment and Disposal/Re-Use of Solid Waste and Wastewater	3.1 Analysis of alternative and selection of methods						Solid & Liquide Waste Reuse Alternatives	100%
		3.2 Get Approval on selected Alternatives							
	4. Design and Implementation	4.1 Design of Alternatives						Pilot Project Implemented	100%
		4.2 Procurement Process							
		4.3 Implementation of Wastewater Treatment Facility in 3 Pilots							
		4.4 Implementation of Agr. Waste recycle Scheme in two Pilots							
		4.5 Test and Transfer							
	5. Training and Awareness Raising	5.1 Public Awareness Development						Training and PA	100%
		5.2 Public Awareness Launch							
		5.3 Training							
	6. Monitoring and Final Report	6.1 Monitoring						Final report	100%
		6.2 Final report							

 IRG
 UNICEF

Task 6: Improved Wastewater Reuse Practices

The Project is providing technical assistance, guidelines, and commodity support for the design, installation, operation, and monitoring of a demonstration wastewater reuse site producing a variety of approved commercial plant species in accordance with the “Egyptian Code for Reuse of Treated Wastewater in Agriculture” issued April 2005. Regular comprehensive monitoring of water, soil, and plant tissue for pollution constituent tracking on the demonstration site is being carried out. The environmental and economical feasibility of reuse of treated wastewater to cultivate the approved commercial crops is under evaluation. The Luxor wastewater reuse demo site is operational.

The steps for implementing this task include:

- Site selection.
- Crop selection and cropping layout.
- Irrigation system installation.
- Participation of agricultural graduates.
- Orientation and training.
- Irrigation and crop management plan.
- Environmental monitoring plan.
- Field implementation.
- Private sector participation.
- Environmental and economic evaluation.

During Years 1, 2, and 3 of the Project the following activities were completed:

- A Task 6 committee, headed by Ministry State of Environmental Affairs with representatives from Ministry of Agriculture and Land Reclamation, Ministry of Water Resources and Irrigation, and LIFE/IWRM team, was formed.
- A demonstration site (9 feddans), approved by the Governor and MOH in Luxor, was selected for the wastewater reuse pilot.
- Base line data was collected at the demo site on water quality, and soil type and quality.
- A topographic survey was conducted.
- Irrigation system design was prepared.
- Irrigation and crop management plan was prepared.
- Environmental monitoring plan was prepared and approved by MSEA and USAID.
- Procurement of all needed equipment, materials, and irrigation system piping.
- Installation of irrigation system, pump station, and the field office.
- Crop selections were approved. The following six crops are being cultivated: flowers, Jojoba, Jatropha, flax and sorghum.
- 5 agricultural graduates were trained on safe agriculture practices utilizing treated wastewater.
- A second group of seven new graduates were interviewed and selected for the Luxor demo site OJT program.
- 5 Graduates were given training in preparation of business plans.
- Samples were collected from crops and sent for analysis.
- MSEA/EEAA initiated discussion with Egyptian large investors and a Telecom Company to establish a revolving fund to help graduates to replicate the demo site results at other locations.

- Economic Feasibility Report was prepared.

During Year 4 LIFE/IWRM will:

- Continue growing crops to validate the results.
- Continue monitoring health, costs, markets, and environment to evaluate the environmental and economical impacts.
- Continue training of graduates.
- Share results and findings with private sector.

Figure 6 is a flow chart showing the activity schedule for Year 4.

The expected outputs for Task 6 for Year 4 are:

- Environmental Evaluation report
- A new group of trained graduates
- An awareness program to inform private sector on findings of the project
- Transfer of the demo site to MSEA/EEAA or other entity approved by USAID.
- A final report on the use of treated wastewater for irrigation based on the accomplishments and lessons learned from the Luxor demo site.

Cooperating Partners:

The primary cooperating partners for this activity is MSEA/EEAA. MALR will work closely with MSEA/EEAA and provide the field support and agricultural guidance. MWRI/IWMU and MWRI Central Lab will provide technical assistance.

Figure 6 Year 4 Schedule for Task 6: Improved Wastewater Reuse Practices

Task No. 6: Improved Water Reuse Practices -Year 4 Schedule

	Activities	Sub-Activities	Year 4				Outputs	Targets Yr 4		
			Q1	Q2	Q3	Q4				
Task No. 6: Improved Water Reuse Practices	1. Site Selection							Demo site & project office identified	100%	
	2. Crop Selection and Cropping Layout	2.1	Review existing water reuse crops in Egypt and the reuse area						Crops selected and approved	100%
		2.2	Review Egyptian Water Reuse Code (MSEA)							
		2.3	Reach agreement on crop selection (MSEA approval)							
		2.4	Prepare cropping layout (inc. spacing and number)							
	3. Participation of Agricultural Graduates	3.1	Investigate the situation of FAs and BCWUAs in Luxor						Graduates appointed and contracted	100%
		3.2	Selection of a BCWUA overlapping with FA							
		3.3	Appointment of Graduates							
	4. Orientation and training	4.1	Orientation to FA and BCWUA						NGOs oriented and graduates trained	100%
		4.2	Orientation to Graduates							
		4.3	Training of Graduates on safe agricultural practices							
	5. Baseline Assessment and Environmental Monitoring Plan	5.1	Baseline environmental survey of target site						Baseline data collected - EMP prepared and approved - Environmental evaluation complete	100%
		5.2	Environmental Monitoring Plan (EMP)							
		5.3	Environmental monitoring according to EMP							
		5.4	Environmental Evaluation Report							
	6. Irrigation and Crop Management Plan	6.1	Evaluate infrastructure needs						Irrigation and Crop Management Plan completed	100%
		6.2	Prepare irrigation plan (BOQs, specifications)							
		6.3	Prepare crop management plan based on crop selection							
	7. Field Implementation	7.1	Provide shelter and storage room						Irrigation network installed - Crops irrigated according to Irrig & Crop Management Plan- Demo site transferred	100%
		7.2	Procure irrigation supplies and other ancillary equipment							
		7.3	Execute land preparation works (e.g., leveling)							
		7.4	Install irrigation system							
		7.5	Purchase seeds/seedlings and plant them							
7.6		Irrigate crops according to Irrigation & Crop Management Plan								
7.7		Sample and analyze soil, water and plants according to EMP								
7.8		Demo site transferred								
8. Private Sector Participation	8.1	Consultation workshops to discuss WWR with private sector						Awareness Program	100%	
	8.2	Identify market outlets for existing water reuse crops								
	8.3	Present and discuss findings with private sector								
	8.4	Prepare public awareness								
9. Preliminary economic evaluation of water reuse in Luxor	9.1	Review yield results of MOA water reuse project in project area						Economic evaluation complete	100%	
	9.2	Prepare report on economic evaluation of WWR in target area								
	9.3	Prepare final report on findings of demo experiment								

Direct activity
 Facilitation, capacity-building, follow-up

2.3 A.3: Performance Requirement III: Capacity Building of MWRI Staff

Task 7: Graduate Degree Training for MWRI Staff

Funds have been obligated to LIFE/IWRM by USAID to provide academic degree training to MWRI staff. Both U.S. and Egyptian institutions are being used to provide the degree training.

During Years 1, 2, and 3 the Project assisted MWRI in the following activities:

- Nine persons were sponsored for M.S. Graduate Degree Training.
 - Two persons attended and completed their degrees at Utah State University, USA, in irrigation and hydraulic engineering.
 - Two persons attended American University Cairo in environmental engineering.
 - Five persons attended local universities.
- Prepared progress reports on status of MS Students.
- Provided financial and logistical support for all trainees.
- Gave support and assistance to trainees to carry out some investigations as part of their theses.

During Year 4 LIFE/IWRM will:

- Continue monitoring progress of all trainees.
- Successfully complete the graduate degree training activity taking place at Egyptian universities.

Figure 7 is a flow chart showing the activity schedule for Year 4.

The expected outputs for Task 7 during Year 4 are:

- Two persons complete their MS degrees at American University Cairo in environmental engineering.
- Five MWRI engineers successfully complete their MS program at Egyptian universities.

Cooperating Partners:

The key partners for this activity are IWMU, USAID, Utah State University, American University in Cairo, Cairo University, Ain Shams University, and Helwan University.

Figure 7 Year 4 Schedule for Task 7: Graduate Degree Training for MWRI Staff

Task No. 7. Graduate Degree Training for MWRI Staff - Year 4 Schedule

Task No. 7. Graduate Degree Training for MWRI Staff	Activities	Sub-Activities	Year 4												Outputs	Year 4 Targets
			Q1			Q2			Q3			Q4				
1. Determine MWRI Training Priorities	1.1	Review Training Needs Assessment													MWRI Priorities for Graduate Degree Training	100%
	1.2	Meet Senior MWRI Personnel														
2. Design Procedure for Selection of Trainees	2.1	Screening Candidates for Academic Training													MWRI selection panel convened - Candidates selected	100%
	2.2	Organize Selection Panel														
	2.3	Selection of Candidates														
3	Selection of Training Institutes in USA & Egypt														Institution selected for prospective trainees	100%
4	Assist Trainees with Application Process														Candidates applications to US & Egyptian Universities	100%
5. Assist US bound Trainees	5.1	English Language Courses to candidates to pass TOEFL exams													TOEFL Exam passed Orientation Departure to US	100%
	5.2	Pre-departure Orientation for US-bound Candidate														
	5.3	Assist US Candidates with Formalities: Visa, Allowances etc.														
6. Monitor Progress of Trainees in US & Egypt	6.1	Trainees in USA													Evaluation reports	100%
	6.2	Trainees in Egypt														

Direct activity
 Facilitation, capacity-building, follow-up

2.4 Cross-Cutting Components

Monitoring and Evaluation

The purpose of the Monitoring and Evaluation (M&E) component of the project is to provide LIFE/IWRM Project stakeholders with the information needed to follow and manage the Project's progress and assess its outcomes and impacts. The M&E activity integrates closely with Tasks 1, 2, and 3 and with the cross-cutting *Information Systems* component.

The following steps were taken during Years 1-3 to maintain an effective project monitoring and evaluation program:

- Assembled data required to calculate all indicators contained in the M&E Plan.
- Advised and assisted USAID on input to the USAID/Egypt performance monitoring plan as it relates to LIFE/IWRM.
- Carried out a base line survey and annual farmer field surveys in the 27 IWMDs. For each survey over 4500 persons were interviewed.
- Advised and assisted District Managers and General Directors and their Staff in establishing performance goals and monitoring their results in terms of those goals.
- Coordinated with the Information Systems teams to refine and regularize the IWMD information system to assemble, process, store and report data useful to managers at various levels.
- Evaluated and reported on the M&E Plan performance indicators measured during Years 1-3.

During Year 4 LIFE/IWRM will:

- Refine M&E data reporting systems.
- Carry out the Year 4 M&E Field Survey.
- Assemble relevant secondary M&E data from all project IWMDs.
- Work with stakeholders to interpret the meaning and implications of Year 3 performance indicator values, relative to baseline values.
- Organize training for district staff on conducting field surveys.
- Evaluate and report on the M&E Plan performance indicators for the life of the Project and prepare the Life of Project M&E Report.

The key partners will include USAID, IWMU, the IWMDs, and the five Directorates.

Public Awareness, Education, and Communication Support

To achieve success in the core activities of the project, namely formation and strengthening of IWMD and BCWUAs, public awareness, education, and communication support is essential. LIFE/IWRM is working closely with MWRI Water Communication Unit staff (WCU) in support of these activities. The public awareness team has been engaged in various cross-cutting communication activities including planning, shooting and editing video, still photography, writing, and design and production of program materials.

During Year 1, 2, and 3 LIFE/IWRM accomplished the following:

- Over 85,000 Project brochures, BCWUA Booklets, BCWUA FAQ Flyers, Project folders, notebooks with slogan and logo, cartoon posters, illustrated Nile water pollution posters, IWRM campaign mugs, IWMD booklets, calendars, tea glasses with the BCWUA campaign logo, BCWUA campaign logo hats, and LIFE Water hats in English and Arabic were designed, printed, and distributed to IWMDs and BCWUAs.
- A communication tool kit or “Discussion Guide” to support BCWUA field staff was prepared and over 700 Arabic copies and 50 English copies along with a CD data show were produced and distributed to IWMDs and BCWUA board members.
- Production of thirty, 13 page, flip chart kits based on the “Discussion Guide” with a carrying case was completed and distributed to each IWMD Office
- The Project assisted the Water Communication Unit in preparing several videos to include one on Farmer Participation entitled "Start with Your Selves"; one designed to demonstrate the step-by-step process of BCWUA formation and activation; and a short video on the Luxor Waste Water Reuse demo for EEAA;
- A “Clean-up week” public awareness event on solid and liquid waste management was conducted at Senbo to support Task #5: Environmental Services for Improving Water Quality Management pilot activities.
- BCWUA membership cards were prepared for board members.
- Conducted three Awareness Workshops for all MWRI irrigation and drainage Undersecretaries and General Directors.
- Delivered the English and Arabic version of the ten USAID lobby display boards.
- Printed and distributed 10,000 3x7 cm Awareness Cards describing LIFE project and Egypt’s water resources.
- Participated in several conferences and exhibitions.
- Collected over 200 IWMD and BCWUA success stories and translated them to English.
- WCU published three issues of a quarterly newsletter on success stories that were distributed to the IWMDs; journalists; ordinary irrigation & drainage districts; all Irrigation/ Drainage/ Groundwater Directorates & Undersecretaries; MWRI Staff in Ministry Building Cairo; and related projects i.e. World Bank IIIMP & W. Delta, Fayoum, CDIAS, & IIP.
- Support was provided by WCU for video and photographic documentation of all project training and field activities.
- Project web-site (www.iwrmeg.org) and photo archive were initiated and maintained.

For Year 4 LIFE/IWRM will:

- Continue to assist with training material development, enhance presentation and packaging; support training and workshops as required; maintain and update project website; prepare success stories; expand photo archives; and ensure gender is reflected in all communication materials and events (All tasks).

- Support awareness events at central, governorate, district, and branch canal levels to be delivered by MWRI staff and BCWUAs through the development of presentation material and the handling of logistics (Task 1, 2).
- Continue developing awareness material that will support the fieldwork to activate and strengthen BCWUAs (Task 2).
- Continue to produce communication materials to promote data-based water management, create a clientele for the water monitoring and database management activities and thus ensure their sustainability. This includes preparation of practical examples to show uses and benefits of reliable data, compiling success stories, and developing communication support to disseminate those examples and success stories (Task 3).
- Develop an awareness program on irrigation equipment maintenance (Task 4).
- Assist and support UNICEF in the awareness program being developed for the Global Development Alliance: Environmental Services for Improving Water Quality Management in Egypt (Task 5).
- Develop an awareness program to inform private sector on findings of the Luxor wastewater reuse demo project (Task 6).
- Continue to support USAID related public awareness and communication efforts on behalf of the Project (All tasks).
- Investigate the promotion of project results and achievements through various media such as TV adds, newsletters, brochures, videos, awareness events, etc. (All tasks)

Gender

In keeping with USAID and the GOE's plan, as described in "Egypt and the 21st Century," the gender component of this project is addressing the need for increased participation and involvement of women in the water resources management and irrigation sector.

During Year 4 the Project will continue to:

- Increase awareness as to the importance of gender equitable approaches in all aspects of water resources management and irrigation and among all users.
- Measure the impact of specific actions taken to increase participation and training among female participants.
- Train stakeholders in specific actions that will ensure gender equitable opportunities in all tasks outlined in the project.

3. Training

Training is an important component of the LIFE/IWRM and is used to support all the task activities. LIFE/IWRM has a full time training/workshop coordinator to support this effort.

For Year 1, 2, and 3:

- Annual training plans were prepared and updated to identify and track training programs.
- Data for all training was entered into the USAID TraiNet system.
- Training partners included IWMU staff, MWRI organizations, local consultants, and where required, local training service providers.
- Project training database was developed.
- Training modules for all training courses were assembled.
- Made arrangements for three project-sponsored participants (MWRI staff) to attend the US Committee on Irrigation and Drainage Conference to be held in Sacramento, California in October 2007.

Table 1 presents an initial list of training activities that have been identified as necessary to support Year 4 of the Project. Some of these training activities are tentative and indicative and will be adjusted throughout the course of implementation.

Table 1 Training Plan Year 4

ID Code	Course Title	Type	Target Group	Dur. Days	Events	Number Trainees	Date	Venue
Task# 1 Formation of Integrated Water Management Districts								
1.8.1	Maintenance Monthly Meeting	Meeting	IWMD/G.D	1	45	60	Q1/Q3	Each Directorate
1.9.4	LIFE IWRM Awareness Workshop	Workshop	IWMD/G.D	2	3	150	Q2/Q3	1 U.E / 2 L.E / 1
1.11.1	Directorate Training Courses by Local Staff	Class	GD	2	10	100	Q1/Q3	Each Directorate
8.2.107	Directorate Monthly Meeting	Meeting	IWMD/G.D	1	36	50	Q1/Q3	Each Directorate
8.4.1	District Monthly Meeting	Meeting	IWMD	1	243	162	Q1/Q3	Each District
Task# 2 Formation of Branch Canal Water Users' Association								
2.4.1.1	BCWUA Participatory Management 1	Class	IWMD Staff	4	6	200	Q1	Each Directorate
2.4.2.1	BCWUA Participatory Management 1	OJT	IWMD Staff	15	4	405	Q1/Q2	Each Directorate
2.4.3.1	BCWUA Participatory Management 2	Class	BCWUA	1	135	601	Q1/Q2	Each Directorate
2.4.4.1	BCWUAs Local Awareness Meeting (RA)	Meeting	WURs / IWMD	1	601	30,050	Q1/Q3	Each Directorate
2.4.5.1	BCWUAs Annual Coordination Meeting	Meeting	BCWUA	1	9	601	Q1/Q2	Each Directorate
2.4.6.1	Water Advisory Monthly Meeting	Meeting	IWMD Staff	1	45	50	Q1/Q3	Each Directorate
Task# 3 Equitable Allocation of Water Resources								
3.4.1.1	Digital Mapping Refresher Training	Class / Field	IWMD/GD	3	6	72	Q1	Each Directorate
3.4.2.1	Canal Operation	Class / Field	IWMD/GD	2	27	810	Q1/Q2	Each Directorate
3.4.3.1	Integrated Water Management Plan	Class / Field	IWMD/GD	3	6	60	Q2	Each Directorate
3.4.4.1	MWRI/MALR Seasonal Coordination Mtg	Meeting	IWMD/GD	1	10	300	Q1/Q3	Each Directorate
3.3.14.5	Water Distribution Monthly Meeting	Meeting	IWMD/GD	1	45	60	Q1/Q3	Each Directorate
Task# 4 Improved Maintenance and Upgrading of Water Management Equipment								
4.4.1.1	Improved Maintenance of Irrigation Equipment	Class	BCWUA	1	5	50	Q1/Q3	Each Directorate
Task# 5 Environmental Services for Improving Water Quality Management								
GDA Task								
5.4.1.1	GDA Monthly Meeting	Meeting	Steering Committee	1	9	10	Q1/Q3	Cairo
5.4.2.1	As Recycle	Class	CDA	3	4	60	Q1/Q3	L. & U. Egypt
5.4.3.1	As Recycle	OJT	CDA	15	1	60	Q1/Q3	L. & U. Egypt
5.4.4.1	O&M of Waste Water Treatment	Class	CDA	3	4	60	Q1/Q3	L. & U. Egypt
5.4.5.1	O&M of Waste Water Treatment	OJT	CDA	15	1	60	Q1/Q3	L. & U. Egypt
Task# 6 Improving Water Reuse Practices								
6.4.1.1	Monthly Coordination Meeting	Meeting	Steering Committee	1	3	10	Q1/Q3	Luxor / Cairo
6.4.2.1	Improving Water Reuse Practices	Class	Graduates	8	1	8	Q1/Q3	U. Egypt
6.4.3.1	Public Sector Awareness	Workshop	Graduates	1	1	25	Q1/Q3	U. Egypt
6.2.23	Reuse of Treated Wastewater in Agriculture	OJT	Graduates	30	6	8	Q1/Q3	U. Egypt
Task# 7 Graduate Degree Training for MWRI Staff								
7.3	In-country long-term tng	MS Degree	MWRI Staff	2 Years	1	2	2005/07	AUC
7.5	In-country long-term tng	MS Degree	MWRI Staff	2 Years	1	5	2005/07	Egyptian University
7.8	Overseas short-term Tng	Conference	MWRI Staff	10 Days	1	3	Oct-07	U.S.A
M&E Task								
8.6.25	M&E Workshop	Workshop	MWRI/IWMD/GD	1	1	50	Q2	Cairo
8.6.26	Performance Benchmarking	Class	IWMD/GD	1	5	50	Q2	Each Directorate
Cross Cutting		Events	Venue					
8.4.1.1	Coordination Mtg :IWMDs,US & GDs	5	MWRI Building					
8.4.2.1	Close Out LIFE IWRM Project Workshop	1	Alexandria					

4. Procurement Plan

LIFE/IWRM has undertaken selected procurement of Project and MWRI commodities and equipment. All equipment was procured in accordance with USAID, GOE, and IRG standard procurement regulations. USAID is required to approve the list in advance before procurement can proceed.

The commodity procurement plan for Year 4 is summarized in Table 2. The information in Table 2 along with a list of procurements actually accomplished in Years 1-3 is presented in Annex G. These commodities are primarily intended to meet the logistical requirements of the technical assistance team and the GOE counterparts. Procurement of some of these items is tentative and subject to availability of funds. Because this is the final Year of the Project all equipment procured under the Project will be transferred to MWRI, EEAA, or other entities as approved by USAID.

Table 2 Year 4 Procurement Plan

Item	Description	Equip Set
Project Office Setup/Equipment (Cairo and Regional Offices)		
Cairo Office	Minor refurbishment & Equipment	Lump Sum
	Notebook Computer	2
	External Hard Drive	10
	Norton Anti virus update	10
	Digital Camera, small	2
	DVD Camcorder	1
Performance Requirement I : Decentralized Management of Water Resources (Task # 1,2,3)		
District/Directorate Computer Equipment and Peripherals Set	Expendables, Xerox and HP Cartridges and office stationary supplies	27
BCWUA Equipment	Maintenance Equipment (long handle reed sickle, digging hoe, fork, knife, dauner sickle)	601
Performance Requirement II: Stakeholder Engagement in Water Resources Management		
Task 5: GDA	Agriculture Recycle System (tractor, shredder, pump, compost mixer)	2
	Waste water treatment facility (Dual Biological Aerated Filter Plant or equivalent)	3
Task 6: Improved Wastewater Reuse Practices	Emergency pump; replacement pipes; seeds; seedlings	Lump Sum

5. Organization of Long and Short-term Staff

A summary of the level of effort (LOE) proposed under the contract for LIFE/IWRM for Year 4 is presented in Table 3. LOE identified in the implementation plans presented in the Annexes are indicative and will be finalized after the work plan has been approved.

Table 3 LIFE/IWRM Year 4 Level of Effort (LOE)

Labor Detail Schedule	Position Title
Expat LTTA	
Dr. Jeff Fredericks	Chief of Party
Local LTTA	
Dr. Ibrahim El Assiouty	Deputy Chief of Party
Nabil Fawzi	Senior Water Resource Mgt Specialist (Upper Egypt)
Maher Khodary	Senior Water Resource Mgt Specialist (Lower Egypt)
Dr. Wadie F. Mankarious	Senior Environmental and Water Resources Mgt Specialist
Dr. Ragab Ali Abdel Azim	Water Resources Management Specialist
Dahlia Hamdy	Organization/Institutional Development Specialist
Mahmoud Said	Financial/Procurement Manager
Amany Mahmoud	Office Manager (Cairo)
Shehab Younis	Administrative Assistant (Lower Egypt)
Nahid Nabil	Administrative Assistant (Upper Egypt)

Category	Position	Year 4 proposed LOE (days)
IRG STTA Staff		
Home Office Staff – US	Home Office Management (technical and admin)	60
Consultant STTA – Expat	Technical Expertise	180
Consultant STTA - CCN (local)	Technical Expertise	1200
Subcontractors (International Firms)		
AED		
Consultant STTA - Expat	Sr. Env. Education and Awareness Specialist	60
ECODIT		
Consultant STTA – Expat	Expatriate Environmental Management Specialist	20
Consultant STTA - Local	Technical Expertise	60
DAI		
Consultant STTA - Expat	Technical Expertise	60

6. Annual Reporting

A list of reports prepared during Years 1, 2 and 3 is presented in Table 4.

Table 4 Year 1, 2, & 3 Reports




No.	Title
1	Annual Work Plan Year 1 (October 2004 – September 2005)
2	Quarterly Report (October - December 2004)
3	Monitoring and Evaluation Plan
4	Quarterly Report (January - March 2005)
5	Quarterly Report (April - June 2005)
6	Task 5: Senbo Village Household Survey
7	Task 5: Alternative Methods for Solid Waste Management and Treatment and Disposal of Wastewater
8	Task 5: Technical Report with Specifications & Table of Quantities of Sewage Pump Station & Treatment Plant for Senbo Village Zifta Markaz – Gharbiya Governorate
9	Task 4: Assessment of Egyptian Farmers' Need for Improved Maintenance of Irrigation Equipment and Training to Manage Water Users' Associations
10	Monitoring and Evaluation: Field Survey of Farmers in Twenty Seven Integrated Water Management Districts
11	Task 1: Establishing Integrated Water Management Districts
12	Violations Data Base User Manual (Arabic)
13	Complaints Data Base User Manual (Arabic)
14	MISD Software User Manual (Arabic)
15	Task 5: Design and Cost Analysis of Agriculture Wastes Recycling Alternatives for Senbo Village – Gharbiya Governorate
16	Annual Work Plan Year 2 (October 2005 – September 2006)
17	Annual Report Year 1 (2004 – 2005)
18	Water Level Data Base User Manual (Arabic)
19	Monitoring and Evaluation Report Year 1
20	Information System Year 1 Assessment
21	Task 6: Design of Irrigation Network for the Luxor Demonstration Site
22	Task 6: Environmental Monitoring Plan for the Luxor Demonstration Site
23	Quarterly Report (October - December 2005)
24	Quarterly Report (January - March 2006)
25	Task 6: Irrigation and Crop Management Plan
26	Monitoring and Evaluation: Field Survey of Farmers in Twenty Seven Integrated Water Management Districts (Year 2)
27	Annual Work Plan Year 3 (October 2005 – September 2006)
28	Information System Year 2 Assessment
29	Annual Report Year 2 (2005 - 2006)
30	Task 4: Updated Assessment of Egyptian Farmers' Need for Improved Maintenance of Irrigation Equipment and Training to Manage Water Users' Associations
31	Monitoring and Evaluation Report Year 2
32	Quarterly Report (September - December 2006)
33	Task 6: Economic Feasibility Study of Using Treated Wastewater in Irrigation
34	Quarterly Report (January - March 2007)
35	Quarterly Report (April – June 2007)
36	Monitoring and Evaluation: Field Survey of Farmers in Twenty Seven Integrated Water Management Districts (Year 3)
37	Information System Year 3 Assessment
38	Monitoring and Evaluation Report Year 3
39	Annual Work Plan Year 4 (October 2006 – September 2007)

A list of reports to be prepared to support the Project for Year 4 is presented in Table 5.

Table 5 Year 4 Report Requirements

Report	Frequency
Annual Progress Report	On November 1 st 2007
Contractor Demobilization Plan	NLT July 1 2008
Final Report (Draft)	NLT July 1 2008
Quarterly Progress Reports	30 days after the end of each quarter.
Quarterly Financial Report	10 days after the end of each calendar quarter
Annual Financial Reports	10 days after the end of 4 th quarter
Other Special Reports –TraiNet; trip and consultant reports; technical reports; and seminar reports and evaluation.	As required in Work Plan
Progress Reporting Requirements – Frequent briefings and discussions on progress and implementation issues	As required in Work Plan

Attachment 1: MWRI Work Plan Approval

 <p>MWRI Ministry of Water Resources and Irrigation</p> <hr/> <p>Steering Committee for Projects & Activities Funded by USAID</p>	<p>وزارة الموارد المائية والري اللجنة التوجيهية للمشروعات والأنشطة الممولة من الوكالة الأمريكية للتنمية الدولية</p>
September 16, 2007	
	
<p>Dr. Jeffrey Fredericks Chief of Party LIFE Improved Water Resource Management USAID, Cairo</p> <p>Subject: 4th Year Workplan Workshop</p>	
<p>Dear Dr. Fredericks,</p> <p>Please find attached the minutes of the 4th year Workplan Workshop held on 7-9 September, approved and signed by H.E the Minister of Water Resources and Irrigation.</p> <p>Best regards.</p> <p>Sincerely Yours</p> <p> Eng. Gamil Mahmoud Chairman of the Steering Committee</p>	
<hr/> <p>Ministry Building 9th Floor-El Warak-Giza Tel: (202) 5449554; 5449459; 5449475 Fax: 5449530 E-mail: gamil@mwri.gov.eg</p> <p style="text-align: right;">مبنى الوزارة - الدور التاسع - طابق رقم 9 - الوزارة - القاهرة هاتف: (202) 5449554; 5449459; 5449475 فاكس: 5449530 البريد الإلكتروني: gamil@mwri.gov.eg</p>	

**Memorandum to be presented to H.E. the Minister
Regarding
The 4th year work plan workshop of the Integrated Water Resources Management
Project**

The workshop was held in Palestine Hotel – Alexandria on 8,9 September 2007 and attended by H.E. the Minister, the Steering Committee members, USAID representatives, Heads of the Central Directorates, Directors of the General Directorates (within the project area), IWMDs Engineers in addition to the IWM unit & IRG teamwork. The following are the main recommendations:

1. The importance of co-operating with the Water ethics unit in the ministry of water resources and irrigation to present the lessons learned from implementing the concept of participation and decentralization in the project's area.
2. The importance of equitable water allocation at the branch canals level.
3. Studying the possibility of extending the Water Quality Program to encompass the other pollutants effects such as fertilizers, pesticides.
4. The necessity of establishing a mechanism for the coordination between IWMDs and the GW General Directorates concerning issuing the wells licenses.
5. To activate the BCWUAs role concerning preventing violations especially the rice violations.
6. To formulate a committee at the General Directorates level involving representatives from the Ministry of Water resources and Irrigation and the concerned governmental institutions in addition to the WU representatives.
7. The importance of involving the WUAs in improving Sugar cane areas, also MWRI will deal with the Ministry of Military production to increase the payment period to simplify the process for the farmers.
8. To activate the BCWUAs role in cleaning the private mesqas.
9. The importance of presenting the project's achievements through numbers and percentages before and after the implementation of the integrated water resources management activities.
10. To study the possibility of developing a mechanism to identify the informal usage of the agriculture wastewater.
11. To exchange experiences among the different sections inside the district.
12. To use the Drainage Institute database concerning the Agriculture drainage reuse in the Integrated Water Resources Management Plan within the districts.
13. To identify the best solutions to re-qualify the districts' staff to be redistributing the employees on the different positions.
14. To insert an item on the districts budget for operating and maintaining the new equipment those were provided by the project.
15. To increase the WUs awareness about the negatives of the expansion in planting rice and its effects on the water policies at the National level, also to disseminate the information regarding the measures that have been taken by the government to decrease the rice plantation as follows:
 - a. Subsidize the corn producers
 - b. Force additional fees on exporting rice
 - c. Increase the fine on the illegal rice plantation.

16. To apply the corrected procedures concerning the main canals maintenance using wires in the mean time to provide the safety tools to the labors on the manual maintenance activities.
17. To benefit from the digital maps teamwork inside districts in determining the cropping pattern.
18. To cooperate and coordinate with the other institutes which work on the field of producing the digital maps like the Egyptian General Authority for Survey and the Ministry Information Center.
19. To assess the progress in implementing the participation concept at the ministry level.
20. The IWMU should continue to give the technical support to the IWMDs after the end of the project.
21. Disseminate and distribute the guidelines that had been prepared by the project within the Ministry sectors.
22. Formulation of a work group to evaluate the achievements of the project, extract the lessons learned to be utilized by the other similar projects.
23. The IRU will be responsible of preparing the guidelines concerning the expansion in implementing the integrated water resources management concept.
24. To involve the responsible entities of constructing and operating the wastewater treatment stations from the beginning in executing waste water treatment pilot projects.
25. MWRI would provide the needed support to the IWMU.
26. To establish a mechanism to ensure experiences exchange among districts.
27. To provide the needed support to the MISD program.
28. To involve the IRU in evaluating and studying the relation between the Ministry's units and BCWUAs.
29. To maximize the benefits from the digital maps.
30. To benefit from the available information from the Water Quality Monitoring National Network.
31. To make an evaluation for the project performance and its economic and social effects on the stakeholders.
32. To coordinate with the Egyptian General Authority for Drainage projects in using its equipment inside IWMDs.
33. To study the opportunities to co-operate with the National Water Research Center.
34. To cooperate and coordinate with other projects at the same field.
35. To benefit from the data collected at the districts level in implementing the Integrated Water Resources Management concept.

All the participants agreed on the 4th year work plan, taking into consideration the above mentioned recommendations and notes.

The Head of the Steering Committee
Eng. Gamil Mahmoud

Approved by
H.E. Dr. Mahmoud Abu-Zeid
Minister of water Resources and Irrigation

Attachment 2: EEAA/MALR Work Plan Approval

Ministry of State for Environmental Affairs
Egyptian Environmental Affairs Agency

Dr. Jeffrey Fredericks, COP Life/IWRM Project

After Greetings....

Referring to Year 4 Work Plan that will start October 2007 – Sept. 2008.

We have reviewed the plan and we herewith submitting our comments:

1. It is important to add a separate study for the feasibility and economic evaluation for growing *Jatropha* with sanitary wastewater irrigation. This should be done in the first half of the 4th year plan in order to clarify the results of the final evaluation of the project. It is noticed that the study on “Economic Feasibility Study of Using Treated Wastewater Irrigation” (Report No. 33, March 2007) included various numbers for this crop that has not been collected from the field which gave a negative impression on the vital important crop.

This study is fundamental and very important for the EEAA and is considered one of the major points of concern.

Best regards

Dr. Moustafa El Hakeem
Minister Advisor for Afforestation

Dr. Mawaheb AbulAzm
Executive Director