



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

**Annual Report
Year 2
(2005 - 2006)**

Report No. 29

October 2006

This publication was produced for review by United States Agency for International Development. It was prepared by:


 **International Resources Group**
in association with EPIQ II Consortium

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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
BCWUA	Branch Canal Water User Association
CD	Central Directorate
CDA	Community Development Association
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)
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
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 & 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 Sate for Environmental Affairs
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
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

SUMMARY

International Resource Group (IRG) under the USAID/Egypt funded Livelihood and Income from the Environment (LIFE) Integrated Water Resources Management Project (Contract No. EPP-I-802-03-00013-00 Task Order 802) is responsible for assisting the Government of Egypt (GOE) to promote integrated water resources management. The period of performance of the Project is from October 1, 2004 to September 30, 2008.

The purpose of this report is to present the status and performance of LIFE IWRM for Year 2 (2005/2006). The Annual Report has the following content: summary of Project activities and accomplishments for the year (2005-2006) including tables showing accomplishments vs targets; planned activities for the following quarter (October – December 2006); and a section on problems, issues, and lessons learned.

The following items have been included as annexes: Annex A M&E Plan Update, Annex B Annual Financial Status Report, Annex C List of Project Reports, Annex D Status of Technical Assistance, Annex E Training Report, and Annex F Procurement Status Report.

A summary of the activities and accomplishments for the Year (October 2005 to September 2006) follows:

Annual Work Plan Workshop for Year 2 was held from 16-18 September 2005 at Palestine Hotel, Alexandria. H.E. the Minister MWRI; representatives from USAID including Anthony Vance, Gary Robins, Wafaa Faltaous, Sylvia Attallah, and Sahar Abdel Rahman; members of the Steering Committee; Under Secretaries, Director Generals, and select District Managers from the 5 Directorates; IWMU; and LIFE IWRM TA team attended.

The Annual Year 2 Work Plan, Life of Project Procurement Plan, Annual Year 2 Training Plan, and updated Monitoring and Evaluation Plan were approved by MWRI and EEAA in September 2006 and by USAID in October 2006.

PO was renewed with the MWRI Integrated Water Management Unit to provide support funding for Year 2 through September 2006. Eng. Gamil Mahmoud is head of the Unit.

Contract Modification was issued by USAID on March 26, 2006 to fully fund the award in the local currency.

Steering Committee meetings were held on 14 May and 30 Aug 2006

US Ambassador Francis Ricciardone visited Qena and met with BCWUA representatives in Luxor IWMD on 5 April.

USAID/Egypt staff participated in a number of visits and meetings to review Project activities that included several meetings with H.E. Minister MWRI and visits to IWMDs in each of the 5 target Directorates.

Doug Clark, IRG Corporate VP and EPIQ IQC Manager, visited Egypt in February and again in September to review and coordinate Project activities.

Annual Work Plan Workshop for Year 3 was held from 8 -10 September 2006 at Palestine Hotel, Alexandria. H.E. the Minister MWRI; Richard Rousseau (USAID); members of the Steering Committee including Wafaa Faltaous (USAID); Under Secretaries, Director Generals, and select District Managers and staff engineers from the 5 Directorates; IWMU; and LIFE IWRM TA team attended.

Annual Year 3 Work Plan was approved by MWRI and EEAA in September 2006.

Task 1 Formation of Integrated Water Management Districts has been completed. 23/23 new IWMDs have been formed. The total number of IWMDs including those formed under USAID RSC/WP is now 27 and includes all the Districts in the 5 target Directorates of West Sharkiya, New Zifta, East Qena, West Qena, and Aswan. The IWMDs are fully functioning and cover over 1.2 million feddan or 15% of Egypt's irrigated area. The IWMDs now have upgraded facilities, modern office equipment, training rooms, technical standards and guidelines. All admin and technical staff have been officially assigned to the IWMDs. MWRI has expressed an interest in preparing plans to extend the IWMDs to the remaining 180 irrigation Districts.

Task 2 Formation of Branch Canal Water Users' Associations supported the establishment in Year 2 of over 300 BCWUAs. The total number of BCWUAs in the 27 IWMDs is now 585 serving almost 500,000 branch canal water users and covering over 1000 branch canals. During Year 2 the Project strengthened the 273 BCWUAs formed during Year 1 and under the USAID RSC/WP with over 240,000 members, 5000 water user representatives, and 1600 board members. In collaboration with MWRI, and with the formal approval of H.E. Minister MWRI, the Project developed a streamlined program to directly involve District Managers and District staff; increase the number of water users represented by BCWUAs; and insure activation of the BCWUAs after establishment. The effort was very successful. The Project now has two years to concentrate on strengthening the BCWUAs and IWMDs in the procedures for implementing participatory irrigation management.

Under *Task 3 Equitable Allocation of Water Resources* the Project is introducing techniques for data-based decision-making, equipment for measurement-based water management, procedures for matching irrigation supply and demand, and concepts of integrated water resources management to the IWMDs.

Water monitoring networks have been established in all IWMDs. The water discharge measurement program continued. Initial calibration was completed at 86 irrigation canal flow monitoring sites enabling calculation of actual inflows into each IWMD. To evaluate water balance estimates for the IWMDs, 80 drainage sites were added to the flow monitoring program. Water quality and groundwater monitoring equipment was delivered and training provided to all Districts. Ground water inventories have been conducted by IWMD staff at over 3500 wells. Water quality monitoring of dissolved oxygen, Ph, salinity, and temperature is being done at over 250 sites.

To demonstrate procedures for continuous flow monitoring, one CSI CR 510 data logger was installed at Meit Bera Canal Intake in Quesna IWMD, New Zifta Directorate, and is providing hourly water level data via a low cost GSM/GPSR communication system.

Procurement, delivery, and transfer of IWMD computer and office equipment have been completed. Water level, complaints, matching irrigation supply and demand, ground water,

and water quality databases were installed at each IWMD. Daily water levels for over 1000 sites are being entered into the water level data bases. An Information System Assessment on Year 2 activities was prepared.

The implementation of the Matching Irrigation and Supply and Demand (MISD) program continued. Biweekly data from the Ministry of Agriculture is being collected by the 27 IWMDs on crops and cropping patterns. Water resource budgets were prepared by each IWMD manager.

A total of 27 digital district maps with District boundaries, canals, drains, water monitoring points, and water quality sampling sites have been produced by the IWMDs.

At the request of USAID, a *Task 4 Improved Maintenance and Upgrading of Water Management Equipment* follow-up work plan was prepared to extend the study to additional BCWUAs and pump maintenance providers. Three focus group meetings were held involving 18 BCWUAs. Five pump repair workshops were visited in three Directorates. Report is under review.

Task 5 Environmental Services for Improving Water Quality Management activities continued in Senbo Village, Gharbiya Governorate, the pilot area selected for demonstration purposes. Three interventions are being demonstrated: domestic solid waste collection & disposal, liquid wastewater treatment, and agricultural waste recycling. Key stakeholders have been identified; a socio-economic baseline survey conducted; and solid and liquid waste alternatives investigated. The water quality monitoring program is on-going. Senbo Community Development Association (CDA) purchased land for the waste water treatment plant. Construction was completed on the 600 m³/day Dual Flow Aerated Bio-Filters (DBAF) waste water treatment facility. Agriculture waste recycle STTA consultant completed the farmers focus group meetings and submitted the alternatives selected by farmers. An environmental solid waste management and water quality awareness campaign was initiated. The success of the pilot has been confirmed by USAID's interest in replicating the activity. USAID was successful in getting a commitment of additional funds for replication through a Global Development Alliance with Coca Cola under their Community-Watershed Partnership Program.

Task 6 Improved Wastewater Reuse Practices is being implemented in coordination with MSEA/EEAA. The purpose of the activity is to demonstrate environmental feasibility of treated wastewater reuse for commercial crops and to promote private sector participation. The coordination between the Project, USAID, EEAA, and MALR has been excellent at all levels. A 10 feddan site in Luxor was approved by the Luxor Governor and permission was granted to use effluent from the Luxor treatment plant for the demonstration. The Luxor Demo site was surveyed and basic data collected. The installation of the irrigation system was completed. Crops have been selected and agreed upon based on the newly approved Egyptian Wastewater Reuse Code. Six crops are under cultivation. Environmental Monitoring Report was prepared and environmental monitoring was started. Five agricultural graduates were appointed to support the field activities. Two of them are females. A training plan for the 5 graduates working at the demo site is under implementation. Business plans were prepared. A marketing plan that includes collection of data on market venues and market situation is under preparation.

Task 7 Graduate Degree Training for MWRI Staff sponsored two participants for their second year of a two year MS degree program at Utah State University. Two persons are attending their second year at American University in Cairo for MS degrees. Seven participants are enrolled in local Egyptian University MS programs.

Monitoring and Evaluation continued. Monthly meetings were conducted with the IWMDs. Each District Manager now submits a monthly status report. Regular data collection continued by the IWMDs to monitor complaints, cropping patterns, yields of main crops, rotations, water requests, and actual water allocations. Base line studies were conducted with the IWMDs, and procedures for performance monitoring developed using indicators such as quality of irrigation service, water demands vs. deliveries, equity of water distribution, and areas covered by BCWUAs. Baseline conditions in each of the Project IWMDs were evaluated. A Monitoring and Evaluation Report for Year 1 was prepared. Improved procedures for collecting, analyzing, and reporting the M&E IWMD data were introduced. The follow-up Year 2 M&E Field Survey of Farmers in Twenty-Seven Integrated Water Management Districts (5,000 respondents) using staff from the IWMDs as enumerators was completed. Year 2 M&E report was prepared.

Public Awareness, Education, and Communication Support is being provided to all Project activities. The MWRI Water Communication Unit is the key partner for this effort. The Project has prepared and disseminated over 80,000 Project brochures, folders, booklets, flyers, calendars, and posters; and prepared two videos on IWRM and BCWUA benefits. During Year 2 a 45 page, illustrated flip-book, communication tool kit “Discussion Guide to Share with Water Users” with accompanying CD was prepared to support formation of BCWUAs. Over 450 copies were delivered to IWMD BCWUA training teams and BCWUA boards. A 13 page flip-chart kit based on the “Discussion Guide” was printed and issued to each IWMD. Work on a video designed to demonstrate the step-by-step process of BCWUA formation and activation was started. The Project continued to maintain and update the Project web site (www.iwrmeg.org).

Gender issues are being integrated into all activities. One General Director, four IWMD District managers, and 25% of the IWMD section heads are women. Discussions on gender issues were included in all BCWUA training. Ten percent of the BCWUA board members are women.

Training has been used to provide technical assistance through a combination of formal and on-the-job programs. As of September 2006, the Project had conducted over 150 formal training programs with over 500 training days for 2,700 trainees. Twenty percent of the participants were women. Topics included IWMD organization, integrated maintenance, management and communications, BCWUA formation, computer use, water monitoring, MISD, databases, and digital mapping.

Procurement program has supplied all the commodities approved under the original Life of Project Procurement Plan. Because most of the procurement was done locally, the procurement was completed with major cost savings and in a very short time.

ACCOMPLISHMENTS DURING YEAR 2 (2005-2006)

Task 1: Formation of Integrated Water Management Districts

Eric Viala (LTTA, Expatriate Water Resources Management Specialist) is coordinator for this task. Eng. Nabil Fawzi (LTTA, Local Water Resources Management Specialist) is assigned as Regional Advisor for Upper Egypt. He is supported by Eng. Yehia Youssef (IWMU). Eng. Maher Khodary (LTTA, Water Resources Management Specialist) is assigned as Regional Advisor for Lower Egypt. He is supported by Eng. Mohamed El Hamrawy (IWMU). Eng. Tarek Kotb (I&D Maintenance Specialist) provided local STTA support. Activities carried out during the report period by LIFE IWRM team included:

- Monthly coordination meetings held with MWRI managing staff (Undersecretaries, General Directors, and IWMD managers) within the five target Directorates to disseminate information, monitor progress, discuss upcoming steps, identify roadblocks, and share experiences.
- Drafting of report template and support to preparation of monthly reports by IWMD managers (reports submitted to General Directors).
- Continued technical and administrative empowerment and advice provided by the two regional Project offices. Support to assignment and definition of responsibilities of all technical and administrative staff in the IWMDs.
- Establishment of a training room in each IWMD.
- Facilitation of transfer of equipment, facilities, budgets, and staff from EPADP and other MWRI entities to IWMDs.
- Completion of training activities on complaints database for IWMD staff in all five target Directorates.
- Finalization and installation in all IWMDs of complaints database. Complaint records entered for 2004-2005 in each IWMD, current complaints being reported on a monthly basis.
- Completion of training course on management & communications for IWMD managers and section heads in Lower Egypt.
- Completion of training course on integrated maintenance for IWMD staff in five target Directorates. Each IWMD prepared an integrated maintenance plan for year 2006-07.
- Provision of digital base maps for each IWMD (1/25,000 geo-referenced map and satellite picture, see also Task 3).
- Lobbying for MWRI maximal support to the newly established IWMDs. Several field trips were organized with Eng. Gamil, Head of IWMU, and other MWRI officials.
- Preparation of Year 3 work plan, training plan and procurement plan.

Main field visits:

- On February 7-8, a USAID/Egypt Team visited various Project activities in Qena governorate. The USAID Team included Anthony Vance (Associate Director, Environment and Infrastructure), Gary Robbins (Team Leader Agribusiness Competitiveness and Exports), Eng. Wafaa Faltaous (Project CTO), Nihal Montasser (Acquisition Specialist), Sahar Abd El Rahman (Financial Specialist), and Seba Auda (Program Office).

- On April 5, US Ambassador Francis Ricciardone visited Project activities in Qena governorate and met with BCWUA representatives in Luxor IWMD. He was accompanied by a USAID Team that included Anthony Vance (Associate Director, Environment and Infrastructure), Gary Robbins (Team Leader, Agribusiness & Exports), Eng. Wafaa Faltalous (Project CTO), and Manal Alfred (PR Officer).
- On June 26-28, a USAID Team visited the Project activities in Qena governorate. They met with MWRI staff as well as with BCWUAs in the following IWMDs: Armant and Luxor. The USAID Team included Steffi Meyer (Program Officer), David Rhoad (Development Officer), Eng. Wafaa Faltalous (Project CTO), and Sahar Fouad (Financial Officer).
- Annual Work Plan Workshop was held in Alexandria on September 8-10, 2006. Project achievements were presented to H.E. the Minister, and the Year 3 Work Plan was approved. Five IWMD managers were invited to present their perspective of the Project benefits. Five junior IWMD staff also delivered technical presentations. These presentations were very well received and contributed to strengthen MWRI support for the IWMD and BCWUA concepts.

Table 1 Task 1 Accomplishments vs Project Benchmarks

Task No. 1: Establishment of IWMDs - Year 2				
	Activities	Outputs	Target	Completed
			Yr 2	Yr 2
Task No. 1: IWMDs	1. Support to definition of IWMD boundaries	MWRI decrees to officialize IWMDs - Base maps for each IWMD	100%	100%
	2. Support to preparation of organizational plans and transfer of staff	Organizational plans approved	100%	100%
	3. Support to transfer of facilities and equipment	Equipment /facilities transferred	100%	75% (*)
	4. Support to preparation of maintenance plans and budget requests	Maintenance plans prepared by IWMDs	Yr3	75%
	5. Revision/clarification of roles and responsibilities	Clear roles and responsibilities for all IWMD staff	100%	100%
	6. Support to IWMD management and performance monitoring	Monthly reports and meetings	100%	100%
	7. Training and capacity building activities	Number of training courses delivered	60%	60%

(*) In some locations transfer of equipment from EPAD to IWMDs has faced problems and delays (see Section IV PROBLEMS, ISSUES, AND LESSONS LEARNED)

Task 2: Formation of Branch Canal Water Users' Associations

Eric Viala (LTTA, Expat Water Resources Management Specialist) is coordinating this task with assistance from Eng. Moamen Mohamed Said El Sharkawy (IWMU) and Eng. Amira Abdel Hady (IWMU). Dr. Khaled Wassif (MWRI) provided local STTA support. Activities carried out during the report period by LIFE IWRM team included:

- Support to signing of MOUs between MWRI and BCWUAs established in 8 IWMDs during Year 1.
- Preparation and dissemination of illustrated Discussion Guide on BCWUA formation to support IWMD staff during BCWUA establishment activities.
- Decentralization and streamlining of BCWUA formation process: training material and procedures simplified and optimized to allow IWMD staff to directly establish

and activate BCWUAs. A strategy memo was prepared to empower IWMDs and approved by H.E. the Minister for implementation.

- Preparation and dissemination of guidelines on each step of the BCWUA establishment and activation processes.
- Completion of training activities on BCWUA activation for IWMD staff in 11 IWMDs where BCWUAs were established during bridging period and Year 1. All concerned BCWUAs (273) subsequently approved Internal Regulations and prepared BC priorities.
- Support to these 11 IWMDs for holding regular individual meetings and (twice) seasonal district-level meetings with their BCWUAs.
- Preparation of BCWUA initiation decrees for all 16 IWMDs without BCWUAs. These decrees were signed by H.E. the Minister.
- Completion of training activities on BCWUA establishment for IWMD staff in 16 IWMDs. All 16 IWMDs have established BCWUAs (total of 312 new ones): data on water users was collected, BCWUA areas were defined, water user representatives were selected, Board elections were held and Board members confirmed through decrees from MWRI Undersecretaries.
- Preparation of Year 3 work plan, training plan, and procurement plan.

The status of BCWUAs at the end of Year 2 is presented in Table 2.

Table 2 Status of BCWUAs

Directorate	W. Sharkiya	New Zifta	E. Qena	W. Qena	Aswan	Total
Milestone						
Established	135	105	102	124	119	585
MOU	79	62	31	57	44	273
Internal regulations	79	62	31	57	44	273
BC Priorities/ Maintenance Plans	79	62	31	57	44	273
Action Plans	23	36	29	56	42	127

Table 3 Task 2 Accomplishments vs Project Benchmarks

Task No. 2: Establishment of BCWUAs Yr 2				
	Activities	Progress indicators	Target	Completed
			Yr 2	Yr 2
Task No. 2: BCWUAs	1. Standardization of BCWUA formation process	Streamlined BCWUA formation process	100%	100%
	2. Awareness raising activities	Awareness material and events	80%	80%
	3. Training of IWMD staff for BCWUA formation and activation	Trained staff in each IWMD	100%	75% (*)
	4. Monitoring of BCWUAs	Process docum for BCWUAs	50%	50%
	5. Support Participatory Water Management (Pilot Activities)	Participatory Water Management activities implemented	0%	10%

(*) training on activation will be completed first quarter of Year 3. Focus during Year 2 was on formation.

Task 3: Equitable Allocation of Water Resources

Eric Viala (LTTA, Expat Water Resources Management Specialist) is coordinator for this task with assistance from Eng. Alaa Abbas (IWMU), Eng. Mohamed Hamed (IWMU), Eng. Hisham Shehab (IWMU), Dr. Ragab Ali Abdel Azim (MWRI), and Dr. Mohamed Rami Mahmoud (MWRI). Dr Tom Sheng (IRG) provided short-term technical assistance.

Activities carried out during the report period by LIFE IWRM team included:

- Completion of training activities on water levels database for IWMD staff in all five target Directorates.
- Finalization and installation in all IWMDs of water levels database. IWMDs are entering daily records for over 1000 sites into the database. Back data for 2004-2006 has been entered.
- Completion of MISD training activities for IWMD staff in all five target Directorates. Almost all IWMDs (25/27, except Wadi El Nokra and Wadi El Saïda in Aswan Directorate which are new lands under development) are now regularly collecting agricultural crop data and preparing biweekly water requests according to the MISD process.
- Completion of On-the-Job-Training activities on flow monitoring and of training activities on calibration for IWMD staff in all five target Directorates.
- Flow monitoring program implemented in each IWMD, with a total of 83 canal inflow/outflow sites eventually calibrated. Flow monitoring initiated on 82 main drain inflow/outflow sites. 121 marble staff gages being installed to support flow monitoring.
- In collaboration with MWRI Telemetry Section, procurement and installation of one Campbell Scientific data logger at Meit Bera Canal Intake in Quesna IWMD. GSM modem connections to collect water level were established at Quesna IWMD, Zifta Directorate, Telemetry Office Cairo, and Project office.

Table 4 Water Flow Monitoring Points

Directorate \ Sites	W. Sharkiya	New Zifta	E. Qena	W. Qena	Aswan	Total
Canals	19	18	12	14	20	83
Drains	14	18	10	12	28	82
Total	33	36	22	26	48	165

- Procurement of equipment for groundwater and water quality monitoring to all (27/27) IWMDs.
- Completion of training activities on groundwater and water quality monitoring for IWMD staff in all five target Directorates. All IWMDs involved in water quality monitoring at several sites (total of about 200 canals, 120 drains and 20 wells). Also about 3500 wells inventoried so far.
- Drafting of template for District water budget. Each IWMD has prepared its seasonal water budgets, comparing water needs and supplies.
- Finalization of 1/25,000 digital base maps for all IWMDs in all five target Directorates.

- Completion of training activities on digital mapping for IWMD staff in all five target Directorates. Digitizing of canals and drains on 1/25,000 digital base maps for all IWMDs ongoing.
- ARC-View GIS software delivered to Directorates. Two training events completed on ARC-View GIS for Directorate staff in all five target Directorates.
- Continuing support to computer maintenance in all IWMDs.
- Preparation of Year 3 Workplan, training plan and procurement plan.

Table 5 Task 3 Accomplishments vs Project Benchmarks

Task No. 3: Equitable Allocation of Water Resources - Year 2				
	Activities	Outputs	Target	Completed
			Yr 2	Yr 2
Task No. 3: Equitable Allocation of Water Resources	1. Institutional arrangements	IWMD distribution staff assigned	100%	100%
	2. Water monitoring	Monitoring networks, water monitoring data (flow and quality)	100%	100%
	3. MISD	Water requests and allocation plans prepared by IWMDs	30%	30%
	4. Water resource databases	Computer water management systems in IWMDs	60%	60%
	5. Digital mapping and BC data	Digital mapping systems in Directorates	50%	50%
	6. Integrated water management planning	Water resource inventories and management plans	50%	50%
	7. Training and capacity building activities	Nb of training courses delivered	60%	60%

Task 4: Improved Maintenance and Upgrading of Water Management Equipment

Dr. Wadie Fahim Mankarious (IRG), Senior Organization/Institutional Development Specialist, is coordinator for this task. The purpose of this Task is 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 agriculture and irrigation tools and equipment and in business management. The original assessment carried out in Yr 2005 included three focus meetings with 9 BCWUAs, and three interviews with 7 Technical Schools. A report was issued and submitted to USAID in September 2005. USAID reviewed the original report and recommended that the activity should be expanded to include input from additional BCWUAs and pump repair workshops. For this purpose during Year 2 additional focus group meetings and an extended pump maintenance workshop survey were conducted in three Governorates.

Activities carried out during the report period by LIFE IWRM team included:

- Follow-up work plan prepared and approved by MWRI and USAID.
- A local consultant to conduct the Updated Assessment Study was identified and a Purchase Order signed.

- Focus group meetings (3) were completed. A total of 18 BCWUAs participated and five pump repair workshops were visited in three Directorates. A total of 63 BCWUAs Board members representing 18 BCWUAs participated in these meetings.
- Another five pump repair workshops were visited and 12 mechanics interviewed.
- Draft report was submitted by the consultant and it is under review.

Table 6 Task 4 Accomplishments vs Project Benchmarks

Task 4: Improved Maintenance and Upgrading of Water Management Equipment				
	Activities	Outputs	Target	Completed
			Yr 2	Yr 2
Task No. 4	1. Verify Findings on Pump Maintenance	Pump Maintenance needs determined	100%	100%
	2. Determine Training Needs of BCWUA	Needs Assessment completed	100%	100%
	3. Conduct Rapid Assessment of Training Facilities	Rapid Assessment Completed	100%	100%

Task 5: Environmental Services for Improving Water Quality Management

Dr. Wadie F. Mankarious (IRG) is coordinator for this task. He is assisted by Eng. Mohamed Hamed (IWMU). STTA was provided by Dr. Mohamed El-Hussaini (Waste Water Treatment Consultant), Dr. Samir Ahmed El-Shimi (Ag Recycling Consultant), Dr. Sherif M.A. El-Didy (Groundwater Consultant), and Eng. Ahmed Abdul Maksoud (MWRI). MWRI Water Quality Unit assisted with the water monitoring program and the MWRI Water Communications Unit assisted with the public awareness campaign.

Activities carried out during the report period by LIFE IWRM team included:

- Pilot activities continued in Senbo Village and Senbo Branch Canal.
- Water quality monitoring continued.
- On October 25, 2005, a field visit was conducted by USAID staff: Mr. Anthony Vance, Mr. Jim Harmon, Mr. Gary Robins, Eng. Wafaa; and MWRI Staff: Eng. Gamil Mahmoud and Eng. Mohamed Hamed to the Dual Biological Aerated Filter (DBAF) facility in Hawamdia village.
- Dr. Hussieni was contracted to assist with preparation of the design, tender documents, and technical drawings for the DBAF wastewater treatment facility for Senbo Village.
- LIFE-IWRM team and Eng. Gamil, IWMU visited Senbo village and met with the CDA and BCWUA Board members. CDA/BCWUA requested Project support to get approval for reclassification of the land to be used for the DBAF waste water treatment plant (350 m²) from agricultural land to public utility land.
- As a result of a letter sent by H.E. Minister MWRI to Minister of Agriculture, land for the DBAF in Senbo was reclassified from agriculture to public utilities land.

- A quotation for implementing the DBAF facility in Senbo was prepared, approved and published in Ahram Newspaper. Four contractors out of 17 were selected through pre-qualification screening. High Technology Projects & Marketing was selected and a 90 day completion contract was signed in March 2006.
- A signing ceremony was conducted on 21 March in Senbo to hand over the site for construction of the DBAF system to the Contractor. The New Zifta General Director, Chairman of Senbo CDA, Chairman of Senbo BCWUA, the Contractor, and LIFE Project staff attended.
- Construction of the 600 m³/day DBAF was completed in June 2006.
- A letter was sent by H.E. Dr. Mahmoud Abu-Zeid to Gharbiya Governor requesting assistance with electricity connection to the plant. The Project paid the cost of electricity hook-up to the DBAF. The electricity hook-up for the DBAF is still pending. The Project supplied the DBAF site with a new generator to be used until the site can be connected to the local electric power grid. The generator will serve as a backup power supply.
- Gharbiya Governor sent a team from Water/ Wastewater Gharbiya Office to visit the Senbo DBAF plant and investigate the progress.
- DBAF water samples were collected with assistance from the MWRI Water Quality Unit and sent to MWRI central lab. Water samples were collected on 28 August and 11 September. Both samples met LAW 48 standards for BOD, TSS, & COD. The samples did not meet the standards for fecal coliform. Adjustments to the DBAF's chlorination process are being made.
- Agricultural waste recycle STTA consultant was identified and P.O. signed. The Consultant met with farmers and discussed different alternatives for agricultural waste recycling for their final decision. The alternatives selected by farmers were submitted for review.
- Dr. El-Didy, Groundwater Consultant, was hired to design the monitoring system to determine the impacts on the groundwater in Senbo village before and after implementation of the DBAF treatment plant. A groundwater pumping test was conducted in Senbo.
- Meetings with Senbo village residents were held to begin preparation of the public awareness campaign to support Task #5 activities. Clean-up week sponsored by MWRI WCU, South Zifta IWMD, and Senbo Youth Club was held 19-24 August.
- A proposal to USAID was prepared and submitted to support their effort to leverage Coca Cola grant funds for expanding the Task #5 pilot activities to new areas.

Table 7 Task 5 Accomplishments vs Project Benchmarks

<i>Task No. 5: Environmental Services for Improving Water Quality Management</i>					
Task No. 5: Water Quality Management	Activities	Progress indicators	Target	Completed	Remarks
			Yr 2	Yr 2	
	5.1 Collect and Review Data on Existing Solid and Liquid Waste	Waste Water Reuse Profile	100%	100%	
5.2. Stakeholders Mobilization	Working Groups Formed	100%	100%		
5.3 Assess Alternative Methods for Treatment and Disposal/Re-Use of Solid Waste and Wastewater	Waste Water Reuse Alternatives	100%	100%		
5.4 Pilot Projects	Pilot Project Implemented	55%	55%		
5.5 Formation of Management Consortia	Management Consortium Formed	100%	50%	Due to lack of transfer of DBAF and signing MOU for Agr. Recycle.	
5.6 Training and Awareness Raising	Public Awareness Workshops held	60%	50%	Lack of nomination of DBAF Operation staff	

Task 6: Improved Wastewater Reuse Practices

Dr. Wadie Fahim Mankarious (IRG) is coordinator for this task. He is assisted by Eng. Mohamed Hamed (IWMU). Short term technical assistance is also being provided by Eng. Ayad Thapet Kariakos (ECODIT-Demo site coordinator), Eng. Ahmed El Behery (Irrigation Design Consultant), Eng. Awad Shafik (Demo Site Manager Consultant), Eng. Abd El-Aziz Mohamed Fathy (Irrigation System Field Implementation Engineer Consultant), Dr. Medhat El Helepi (Ag Economist), and Dr. Sherif M.A. El-Didy (Groundwater Consultant). Karim El-Jisr (ECODIT) is providing expat short-term technical assistance. Activities carried out during the report period by LIFE IWRM team included:

- Karim El-Jisr, ECODIT Environmental Specialist and Agricultural Eng (Expat STTA), carried out two assignments in October and November 2005, to prepare Report No. 22 Environmental Monitoring Plan and Report No. 25 Irrigation Crop Management Plan.
- The design of the irrigation system and pumping unit from the lagoon ponds of the Luxor WWTP was prepared by Dr. Behery and approved by EEAA and USAID. A design report was submitted.
- A 10 feddan site in Luxor was approved by the Luxor Governor and permission was granted to use effluent from the Luxor treatment plant for the demonstration. Main irrigation system was installed to serve 9 feddans. Drip system was installed to serve 7 feddans.
- Roses, Bird of Paradise, Gladiolus, Indian Fig, Golden Dewdrop, Dodonea, Flax, Jojoba and Jatropha are the crops being cultivated at the Luxor demo site.
- Sorghum as a summer crop was planted on two feddans. The 1st and 2nd cut of Sorghum was sold to commercial vendors.
- Flax was harvested. A decision has been made to sell only the seeds.
- Six crop samples (roses, gladiolas, flax, Jojoba, Jatropha, and Sorghum) were sent to MALR Soil and Water Research Institute Lab for analysis. Samples from roses, flax, and sorghum were also sent to local lab in Luxor for microbiology analysis. Results indicated that no contaminants were detected except for limited traces in the root zone of the sorghum. Milk sample collected from one of the animals fed sorghum and sent for biological testing showed no contamination.
- An observation well was installed to monitor groundwater quality. Groundwater pumping test was conducted at the demo site to estimate the hydraulic conductivity.
- Five agricultural graduates were appointed to conduct the field work. Two of them are females. Health check-ups for the 5 graduates were conducted.
- A training plan for the graduates was prepared and approved by the Coordination Committee.
- Business management training was conducted for the 5 graduates. As a product of the training sessions, the graduates prepared business plans.
- SOW was prepared for conducting a market survey. Dr. Medhat El Helepi is conducting the survey.

Coordination meetings & visits:

- EEAA, MALR, Luxor Waste Water Treatment Plant, and Project staff held a coordination meeting in Luxor on January 26. Dr. Mawaheb (EEAA), Dr. El Hakeem (EEAA), and Eng. M. Moustafa (MALR) met with the 5 graduates and delivered lectures as training support.

- USAID delegation visited the site on February 7-8, 2006. Visitors included Anthony Vance (Associate Director Environment and Infrastructure), Gary Robbins (Team Leader Agribusiness Competitiveness and Exports), Eng. Wafaa Faltaous (CTO), Nihal Montasser (Acquisition Specialist), Sahar Abd El Rahman (Financial Specialist), and Seba Auda (Program Office).
- A coordination meeting was held in Luxor on April 6. Dr. Mawaheb (EEAA), Dr. El Hakeem (EEAA), and Eng. M. Moustafa (MALR) met with the 5 graduates and delivered lectures as training support. Decisions were taken concerning summer crops, marketing of winter crops and training of the graduates.
- A coordination meeting was conducted in Luxor on 29 June. Dr. Mawaheb (EEAA), Dr. El Hakeem (EEAA), and Eng. M. Moustafa (MALR) met with the 5 graduates and delivered lectures as training support. USAID Delegation consisting of Eng. Wafaa Faltaous (CTO), Sahar Abd El Rahman (Financial Specialist), Steffi Meyer (Program Office), and David Rhoad (Development officer) attended the meeting and visited the demo site.
- A coordination meeting with EEAA and MALR was held on 31 July 2006 in Cairo to discuss selection of crops for the next season.

Table 8 Task 6 Accomplishments vs Project Benchmarks

TASK 6 Improved Water Reuse Practices - Progress of year 2					
	Activities	Indicator	Targets	Completed	Remarks
			Y2	Y2	
TASK 6: Improved Water Reuse Practices	1. Site Selection	Demo site and project office identified	100%	100%	
	2. Crop Selection and Cropping Layout	Crops selected and approved	60%	60%	
	3. Participation of Agricultural Graduates	Graduates appointed and contracted	100%	100%	
	4. Orientation and training	NGOs oriented and Graduates trained	60%	60%	
	5. Baseline Assessment and Environmental Monitoring Plan	Baseline data collected and EMP developed and approved	100%	100%	
	6. Irrigation and Crop Management Plan	Irrigation and Crop Mgt Plan completed	100%	100%	
	7. Field Implementation	Irrigation network installed and tested; Crops planted	100% (50%)	50%	Adjusted due to the continuation of the activity
	8. Private Sector Participation	Draft MOU	50%	40%	Waiting for concrete results to share
	9. Preliminary economic evaluation of water reuse in Luxor	Economic Evaluation Complete	0%	0%	

Task 7: Graduate Degree Training

Dr. Ibrahim Ellassiouti (LLTA, Deputy Chief of Party) is coordinator for this task. He is being assisted by Dahlia Hamdy (LTTA, Institutional/Organizational Development Specialist). Activities carried out during the report period by LIFE IWRM team included:

- Sponsored eleven persons for M.Sc Graduate Degree Training.
- Two persons are attending the Utah State University, USA, in Irrigation and Hydraulic Engineering.
- Two persons are attending Cairo American University in Environmental Engineering.
- Seven persons are attending Local Universities.
- Prepared progress reports on status of MS Students.
- Provided financial and logistical support for all MS Students.
- Supported and assisted trainees in conducting investigations, field work, and field studies as part of their theses.

Table 9 Status of MS Degree Training

	Name	Position	University	Expected Degree	2nd Semester Results
US Institutions:					
1	Hussein Aly Morsy Batt	Engineer - IIS	Utah State University	M.Sc. of Science in Irrigation Engineering	(10 Credits) GPA 3.94
2	Mohamed Hamed Maamoun	Ass. Researcher, HRI	Utah State University	M.Sc.of Science in Civil & Environment Engineering	(12 Credits) GPA 3.95
Cairo American University:					
3	Heba Yaken Aref	Minister Technical Office	American University in Cairo	M.Sc.in Environmental Engineering	GPA 3.000
4	Doaa Lashien Dessouky Lashien	Nile Forcasting Center - PS	American University in Cairo	M.Sc.in Environmental Engineering	GPA 3.001
Egyptian Institutions:					
5	Ahmed Abdel Hafeez Shalaby	IIS	Ain Shams University	M.Sc.of Science in Irrigation Engineering	Good
6	Heba Hussein Bayoumi	PS	Ain Shams University	M.Sc.in Environmental Engineering	Good
7	Mona Fathy Allam	Chemical Engineer - ERI	Ain Shams University	M.Sc.in Environmental Engineering	Good
8	Dina Mamdouh El Damerdash	PS	Ain Shams University	M.Sc.M.Sc.of Science in Irrigation Engineering	Good
9	Heba Abdel Aziz Abo Bakr	GS	Cairo University	M.Sc.in Irrigation & Hydraulic	Very Good
10	Mahmoud Rafa Mohamed	Asst. Director of Works - GBS	Cairo University	M.Sc.in Irrigation & Hydraulic	Good
11	Hussein Mohamed Aly	Architect - Admin	Helwan University	M.Sc.in Architecture	

Table 10 Task 7 Accomplishments vs Project Benchmarks

Task No. 7. Graduate Degree Training for MWRI Staff				
Task No. 7 Graduate Degree Training	Activities	Outputs	Target Year 2	Completed Year 2
	1. Determine MWRI Training Priorities	MWRI Priorities for Graduate Degree Training established	100%	Completed
	2. Design Procedure for Selection of Trainees	MWRI Selection Panel Convened Candidates Selected	100%	Completed
	3 Selection of Training Institutes in USA & Egypt	Institution selected for prospective trainees	100%	Completed
	4. Assist Trainees with Application Process	Candidates applications to US & Egyptian Institutions Submitted	100%	Completed
	5. Assist US bound Trainees	Pass TOEFL Exams	100%	Completed
		Pre-Departure Orientation(s) hold		
US Bound trainees depart Egypt				
6. Monitor Progress of Trainees in USA & Egypt	Transcripts from Training Institutions, Degreed candidates return to MWRI	50%	Completed	

Monitoring & Evaluation

Dr. Ibrahim Ellassiouti (LLTA, Deputy Chief of Party) is coordinator for this component. Eng. Alaa Abbas (IWMU) provided local STTA support. Dr. Mark Svendsen (DAI) provided expatriate STTA support. The following steps were taken during year 2 to establish an effective Project monitoring and evaluation program:

- Assembled data required to calculate all indicators contained in the M&E Plan.
- Completed computation of baseline values of all indicators in the M&E plan, with emphasis on those values which could not be computed during year 1 of the Project.
- Advised and assisted USAID on input to the USAID/Egypt performance monitoring plan as it relates to LIFE/IWRM.
- Carried out farmer field survey in the 27 IWMDs.
- Investigated the potential applications of remote sensing data to Project M&E.
- Advised and assisted District Managers and General Directors and their staff in establishing performance goals and monitoring their results in terms of these goals.
- Coordinated with the information system teams to refine and regularize the IWMD information system to assemble, process, store, and report data useful to managers at various levels.
- Advised Task # 2 BCWUA team on preparing procedures for monitoring and evaluating success of establishing and activating BCWUAs.
- Evaluated and reported on the M&E plan performance indicators measured during Year 2.

Education, Communication, Public Awareness and Participation

Ms. Cheryl Groff (AED), Sr. Education, Communication, Public Awareness and Participation Specialist, was coordinator for this task. Dr. Hisham Ali Mustafa (MWRI) provided STTA support. Four members of the Water Communication Unit staff have been engaged in various cross-cutting communication activities including planning, shooting and editing video, still photography, writing, and design for program materials.

During Year 1 and 2 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, 2006 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 450 Arabic copies and 25 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
- An Arabic power-point presentation was prepared for governorate level public awareness events.
- Nine Project Highlights in English and Arabic were prepared.
- A press release was prepared for the Ambassador’s visit with BCWUA board members in Qena.
- The Project assisted the Water Communication Unit in preparing the Farmer Participation video entitled "Start with Your Selves". The Arabic version was used in all Task 2 training events.
- WCU prepared a 10 minute 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.

- Work on a video program designed to demonstrate the step-by-step process of BCWUA formation and activation was initiated.
- Production of BCWUA membership cards for board members was initiated.
- Support was provided for video and photographic documentation of all Project training and field activities.
- Project web-site (www.iwrmeq.org) and photo archive were initiated and maintained.

Training

Dahlia Hamdy (LTTA, Institutional/Organizational Development Specialist) is coordinator for this component. Activities carried out during the report period by LIFE IWRM team included:

- Updated the training status sheet for the Year 2.
- Prepared the training work plan for Year 3.
- Prepared and organized the Project Annual Workshop Year 3.
- Entered all the required data for US training in the TraiNet.
- Prepared, coordinated, and followed up with the regional offices in Lower & Upper Egypt for all Project related training programs.
- Carried out training evaluation for all courses.
- Identified, negotiated prices, and prepared purchase orders for services of training providers as required.
- Follow-up on the US Master Degrees and the Local Master Degree programs.

The following table shows the number of participants which have been trained under the Project through the end of the reporting period.

Table 11 Participants Trained to Date

Total to Date			Quarterly Total		
Total	Male	Female	Total	Male	Female
4140	3470	670	240	188	52

Training conducted for the Year is presented in Annex E. Training conducted during the 4th Quarter is presented in Table 12.

Table 12 Training Conducted during the Previous Quarter

No	Code	Event	Date	Venue	Days	Persons	Female
Task 1							
1	8.2.51	July Monthly Meeting	9-Jul	Zifta & W. Sharkiya	1	15	3
2	8.2.52	July Monthly Meeting	11-Jul	Qena	1	16	3
3	8.2.53	July Monthly Meeting	12-Jul	Aswan	1	15	1
4	8.2.54	Aug Monthly Meeting	13-Aug	Zifta & W. Sharkiya	1	15	3
5	8.2.55	Aug Monthly Meeting	15-Aug	Qena	1	16	3
6	8.2.56	Aug Monthly Meeting	16-Aug	Aswan	1	13	2
7	8.2.57	Sep Monthly Meeting	17-Sep	Zifta & W. Sharkiya	1	15	3
8	8.2.58	Sep Monthly Meeting	19-Sep	Qena	1	17	4
9	8.2.59	Sep Monthly Meeting	20-Sep	Aswan	1	13	2
Task 2							
10	2.2.8	BCWUAs Establishment Workshop	8-Aug	Zifta	1	25	4
11	2.2.9	BCWUAs Establishment Workshop	9-Aug	W. Sharkiya	1	44	6
Task 3							
12	3.15.6	Digital Mapping	July 17-20	Aswan	4	12	3
13	3.13.1	WL & Complaints DB	Aug 20-21	Zifta	4	15	8
14	3.13.2	WL & Complaints DB	Aug 29-30	W. Sharkiya	4	15	8
15	3.13.3	WL & Complaints DB	Sep 11-12	North Aswan	4	12	1
16	3.13.4	WL & Complaints DB	Sep 13-14	South Aswan	4	12	3
17	3.13.5	WL & Complaints DB	Sep 18-19	North Qena	4	15	6
18	3.13.6	WL & Complaints DB	Sep 20-21	South Qena	4	12	7
Task 6							
19	6.4.4	Improving Water Reuse Practices Coordination Meeting	31-Jul	Cairo	1	9	2
Cross Cutting Task							
20	8.2.57	Steering Committee Meeting	Aug 30	MWRI-Cairo	1	9	2
21	8.2.24	Annual Workshop Year 3	Sep 8-10	Alexandria	3	55	10

Procurement

Mahmoud Said, (LLTA Procurement Coordinator) is responsible for this activity. Activities carried out during the report period by LIFE IWRM team included:

- Prepared Life of Project (LOP) Procurement Plan. The plan was approved by USAID and MWRI. It has been updated for Year 3.
- Prepared specifications and procured Project equipment IAW LOP procurement plan.
- Custom Clearance for one US air shipment.
- Successfully installed and transferred all supplied equipment to MWRI.

The status of the commodity procurement program is presented in Table 13.

Table 13 Year 2 Commodity Procurement

Project Office Setup/Equipment		
No	Item	Qty
Computer Equipment		
0-14	Notebook Computer	1
0-22	Color ink-jet printer	2
0-26	Norton Utilities	5
Training Equipment		
0-32	Digital Camera, small	2
Performance Requirement I: Task 1,2,3		
No	Item	Qty
Training Rooms Equipment Set		
1-1-2	Standard Computer	10
1-7-2	Scanner A4	0
1-13-2	Computer Tables	6
1-14	Computer Chairs	6
1-6-2	Laser Printer	0
1-4-2	Notebook Computer	2
2-4-2	Air-conditioning	3
3-1	Flip Charts Stands	36
3-2	TV Sets	11
3-3	VCRs	11
3-4	Data Show	1
3-8-2	Furniture	11
3-13-2	English language books	36
3-14-2	Ceiling fans	24
3-15-2	Plotter	1
District Mapping Equipment Set		
5-3	Paper Maps Scale	360
5-7-2	GIS Software	5
Water Monitoring Equipment Set		
6-8-2	Data logger	1
6-13	GSM Modem	5
6-13-2	Measurement Gage	0
Water quality equipment set		
7-1	Portable TDS	27
7-2	PH Conductivity Do TM	16
7-4	Connection to Computer	23
7-6	Colorimeter	1
Performance Requirement II: Stakeholder Engagement in Water Resources Management		
Task 5: Environmental Services for Improving Water Quality Management		
Pilot Liquid and Solid Waste Projects		
No.	Item	Qty
5-1	DBAF Wastewater Treatment Unit	1
5-5-2	Generator	1
Task 6: Improved Wastewater Reuse Practices		
Luxor Wastewater Reuse Demonstration Site		
No.	Item	Qty
6-1	Pump Unit and accessories	1
6-2	Filters (Gravel and Sand)	LS
6-3	Drip System irrigation Net Work	LS
6-4	Connections and meters	LS
6-5	Civil Work	LS
6-7	Ag. Inputs	LS
6-8-2	Color Printer	1
6-9-2	UPS	1
6-10-2	Digital Camera	1

ACTIVITIES PLANNED FOR NEXT QUARTER

Task 1: Formation of Integrated Water Management Districts

The following activities are planned for the next quarter:

- Monthly coordination meetings with MWRI managing staff (Undersecretaries, General Directors, and IWMD directors) within the five target Directorates. Dissemination of information, monitoring of progress, discussion of upcoming steps, identification of roadblocks, sharing of experiences.
- Support to preparation of IWMD monthly reports, and to General Directorate monthly reports.
- Implementation of training events on management/communications for Upper Egypt staff (Lower Egypt staff trained during quarter 3 of Year 2).
- Implementation of training events on integrated maintenance for IWMD and Directorate staff in all five target Directorates.
- Support to assignment and redefinition of responsibilities of all technical and administrative staff (ongoing).
- Support to empowerment of IWMD managers and staff by General Directorates and MWRI decision-makers (ongoing).
- Initiation of the English language training courses for IWMD and Directorate staff.

Task 2: Formation of Branch Canal Water Users' Associations

The following activities are planned for the next quarter:

- Implementation of training events on BCWUA activation for IWMD staff in last 16 IWMDs (six events).
- Support to introduction and approbation of Internal Regulations by all BCWUAs in these 16 IWMDs. Support to identification of BC issues and preparation of BC priorities by all BCWUAs in these 16 IWMDs.
- Implementation of orientation training events (refresher on BCWUA benefits) for IWMD staff in initial 11 IWMDs (four events).
- Support to finalization of merging and increasing coverage by BCWUAs in 11 initial IWMDs.
- Preparation of courses, material, and guidelines for training events on participatory water management (to be implemented second quarter).
- Support to regular and seasonal IWMD-BCWUA meetings in all IWMDs (ongoing).

Task 3: Equitable Allocation of Water Resources

The following activities are planned for the next quarter:

- Continuation of water flow monitoring and structure calibration program at Directorate and District levels.
- Preparation of structure calibration guidelines.
- Preparation of water quality monitoring guidelines.
- Continuation of modification, and support to MISD, complaints, violations, water levels, and discharge databases.
- Updating of MISD guidelines.

- Preparation and implementation of MISD training activities (introduction/ confirmation of MISD concept, purpose and procedures, use of corresponding database).

Task 4: Improved Maintenance and Upgrading of Water Management Equipment

The following activities are planned for the next quarter:

- Submit the final report including the analysis and recommendations.

Task 5: Environmental Services for Improving Water Quality Management

The following activities are planned for the next quarter:

- Initiate a public awareness program on wastewater and agricultural waste management.
- Continue building capacity of CDA and BCWUA as required supporting the pilot Project
- Complete the performance test of DBAF in Senbo.
- Start training of the technicians and labors on operation and maintenance of the DBAF
- Initiate the agricultural waste recycle program.
- Continue the water quality monitoring program for Senbo canal, Damanhour ElWahsh Drain and DBAF in and out flow.

Task 6: Improved Wastewater Reuse Practices

The following activities are planned for the next quarter:

- Complete construction of civil works.
- Implement Environmental Management Plan (EMP).
- Continue collection and analyses of soil, groundwater, and effluent samples.
- Continue Class-Training and OJT of the selected graduates.
- Continue monitoring of water quality and cultivated crops.
- Continue training of graduates
- Complete the market survey

Task 7: Graduate Degree Training

The following activities are planned for the next quarter:

Continue monitoring progress of all trainees.

Provide financial and logistical support for US Institution Trainees.

Design and oversee procedures for the selection of additional trainees.

- Continue monitoring progress of all trainees.
- Provide financial and logistical support for US Institution Trainees.
- Design and oversee procedures for the selection of additional trainees.

Monitoring and Evaluation

The following activities are planned for the next quarter:

- Work with District Managers and staff to understand the performance indicators being utilized in the Project along with their data requirements.
- Work with Stakeholders to interpret the meaning and implications of year 2 performance indicator values, relative to baseline values.
- Coordinate with the information systems team to refine and improve data quality in the IWMD information system.
- Assemble relevant secondary M&E data from all Project IWMDs.
- Organize training in M&E and benchmarking for District Managers, General Directors and Central Office Managers.

Education, Communication, Public Awareness and Participation

The following activities are planned for the next quarter:

- Prepare success stories of BCWUAs
- Finalize video film on BCWUAs activation and success stories for public audience.
- Inauguration of DBAF (Task 5)
- Prepare exhibit at USAID entrance hall
- Continue to provide the Project with communication support across task areas as needed.

Training

The following training courses are planned for the next quarter:

Table 14 Training Courses Planned for Next Quarter

ID	Course Title	Task	Events	Date	Venue
8.2.27	MOU Signing Ceremony	2	2	23 & 25 Oct.	Lower Egypt
8.2.28	MOU Signing Ceremony	2	2	24 & 26 Oct.	Upper Egypt
2.1.1	Gov. Stakeholder Seminars	2	1	2nd week of Nov.	Lower
2.1.2	Gov. Stakeholder Seminars	2	1	2nd week of Nov.	Lower
2.1.3	Gov. Stakeholder Seminars	2	1	3rd week of Nov.	Upper
2.1.4	Gov. Stakeholder Seminars	2	1	3rd week of Nov.	Upper
2.1	Introduction Workshop	2	4	Nov. – Dec.	Each Directorate
2.2	Preparation Workshop	2	8	Dec.- Jan.	2 L - 6 U
2.3	OJT Data Collection	2	4	ON GOING	Each Directorate
3.4	OJT Water Flow Monitoring	3	4	ON GOING	Each Directorate
3.7	MISD Program	3	6	Dec.	Each Directorate (2 L/4 U)
3.8	OJT MISD Program	3	4	Dec.	Each Directorate (2 L/4 U)
5.2	Agr. Waste Recycle System	5	2	Dec.- Jan	Upper Egypt
6.1	Improving Water Reuse Practices	6	5	Dec. – Jan.	Upper Egypt
6.2	OJT Improving Water Reuse Practices	6	12	Dec. – Jan.	Upper Egypt
6.4	Improving Water Reuse Practices	6	6	Dec. – Jan.	Upper Egypt

Procurement

Projected procurement activities for next quarter include the following activities:

- Continue procurement, supply, installation, and transfer of Task 1, 2 and 3 commodities as required.
- Continue procurement, supply, installation, and transfer of Task 5, 6 materials and equipment as required.
- Prepare Project Equipment inventory report
- Prepare MWRI equipment transfer report.

PROBLEMS, ISSUES, AND LESSONS LEARNED

Task 1: Formation of Integrated Water Management Districts

The formation of the 23 IWMDs and capacity building of the 27 IWMDs during Years 1 and 2 shows that institutional reorganization and decentralization is an achievable goal at the local level. It also resulted in a significant mentality change for IWMD managers and staff. A general feeling of empowerment has been observed and leads to IWMD staff taking initiatives and responsibility for a complete range of water management activities. This change is not always reflected at higher levels within the MWRI. Delegation to and empowerment of IWMDs is facing some expected roadblocks and resistance to change. The Project keeps sensitizing MWRI decision-makers and raising awareness about the benefits of decentralization.

IWMDs are responsible for more tasks than the previous irrigation Districts. Their needs in terms of budget, facilities, and resources are consequently greater. The Project can only provide temporary support, while the transfer of adequate resources to IWMDs from other MWRI entities has yet to be completed. The Project is collaborating with and lobbying the MWRI to identify IWMD needs and address them.

Shortage of managing staff (engineers) in Aswan Directorate remains an issue. This has been raised to the attention of the MWRI.

The use of MWRI staff to provide technical assistance for preparing the IWMD maintenance plans was very successful and helped to identify and resolve many of the problems and issues resulting from the integration of the irrigation & drainage Districts under an IWMD.

For Year 3, the Project needs to involve more staff members from the Directorate level to strengthen the staff capacity of the five Directorates.

Task 2: Formation of Branch Canal Water Users' Associations

The effort of establishing BCWUAs over five Directorates and 27 IWMDs is significant, as compared to previous similar activities. In order to address this, both BCWUA establishment and activation activities have been implemented and managed locally by IWMDs. To that end, training courses have been synthesized and simplified.

This new approach, using IWMDs to directly form BCWUAs, has proven to be more cost-efficient, to empower IWMD staff, and to ensure a direct and sustainable partnership between IWMD staff and BCWUA representatives. It also provides a smooth and incremental transition towards Irrigation Management Transfer (IMT). The key objective of the new strategy has been to focus on achieving tangible benefits for BCWUA members instead of stressing the process itself, like previous pilot Projects. By immediately solving conflicts and issues, BCWUAs bring benefits to their members and demonstrate their credibility.

A possible drawback to the large-scale implementation is the risk of (temporary) failure of some individual BCWUAs. But the dissemination of success stories should encourage struggling BCWUAs to overcome their difficulties and imitate successful BCWUAs. Another potential drawback to this rapid implementation approach is the difficulty to systematically

involve women as WURs and Board members. This is being addressed through specific awareness activities on gender equity.

Task 3: Equitable Allocation of Water Resources

The Project has demonstrated that through training and empowerment, local IWMD staff can be tasked to carry out the collection of water data, both qualitative and quantitative, regarding surface and groundwater resources; but activities such as water monitoring and data management require continuing technical support to IWMD staff. In order to ensure the sustainability of such activities, the Project is now focusing on the identification and capacity building of support staff at Directorate level.

The monitoring and evaluation process used by the Project is now well established and can be institutionalized at the Directorates so the managers at IWMDs and Directorates can fully appreciate why they are collecting the data, how they will use the data to evaluate system performance, and what they can do to better manage the available water resources to meet water requirements.

Beyond water data collection, MWRI staff does not always have the proper reflexes in terms of data verification, analysis and use. Data quality control should be constantly emphasized at all levels of MWRI. Specific activities (e.g. water budget) are being prepared and implemented to ensure data is used and thus improve water management. The objectives are to ensure that the provision of routine, accurate data becomes indispensable to water managers and decision makers.

The Water Level, Complaint, Water Quality and Groundwater databases are functioning properly. A new version or upgrade is unnecessary in FY 2007. The fortnightly computed water demand values from the MISD Database were questioned for accuracy by the IWMD Managers and the Directorate water distribution engineers. The majority of the IWMDs reported water demand values for summer 2005 that varied from the demand figures generated by the MISD Database. The MISD internal calculations will be validated and refined, if necessary, to ensure the database produces reasonable results.

The IWMD staff have had limited exposure to MS-Access software and will need more training. This will help each IWMD improve the five Project supported databases in the future by adding more reports, queries, and data export options to meet their own requirements, and to make them less dependent on MWRI staff members in Cairo.

The Project installed one CSI CR510 data logger with a Falcon Tango GSM/GPSR modem in the existing Telemetry's RTU box at the Meit Bera intake, Quesna. The data logger is functioning properly and recording both up stream and down stream water levels hourly. The CR510 data logger is a practical and inexpensive way to collect continuous flow data.

The Project also realized that some of the basic MWRI data such as areas served by branch canals and district areas is inaccurate. A total of 16 of the 27 IWMDs have official gross command areas that are different from the GIS area estimates calculated using the Year 2000 Landsat imagery. The comparison between the GIS and IWMD area estimates varied from 88% to 269%. There is a need to have a set of area figures produced using a standard set of rules and the latest land cover data available.

The Project should devise a way to calculate/measure the total irrigable agricultural area in each IWMD (i.e., green area and deduction methods with satellite imagery, 1:2,500 paper maps with a planimeter, and field survey with GPS units) and compare it with MALR and MWRI area figures.

To ensure high quality digital mapping, carrying out data quality assurance and quality control is recommended to show that (1) the shared boundaries among the IWMDs within a Directorate are matched perfectly; (2) canals in the irrigation system network are linked by vertex; and (3) drains in the network are also linked by vertex. Additionally, the IWMD mapping staff will need to verify the location and alignment of each canal and drain with GPS points or tracks.

All IWMDs are planning to conduct inventories of wells, water structures, and waterways, along with a survey of branch canal command areas. The collected GPS points (lat and long) for each can be added as additional layers to the IWMD maps.

Task 4: Improved Maintenance and Upgrading of Water Management Equipment

The updated assessment was successfully completed. Because the farmer focus group meetings were held during the summer months scheduling was a problem and resulted in some delays.

Access to reliable, inexpensive spare parts and skilled mechanics are not problems for farmers in Lower Egypt. Upper Egypt farmers indicated there is a lack of high quality spare parts and skilled mechanics. Farmers do complain about the quality and cost of repair, but they attribute this to poor quality spare parts rather than the capability or training of mechanics. Farmers are highly suspicious of the training quality of graduates of secondary technical schools.

Although in Upper Egypt farmers feel they have the required management skills, in Lower Egypt farmers indicated that they could use improvement in these skills. The majority of BCWUA board members do not perceive a need for basic business training. As leaders in their communities, they feel they are able to learn basic business management skills by serving on local councils, NGOs or CDAs. Farmers generally seem to have their own experience and familiarity with managing money and handling accounts.

Mechanics show mastery over maintenance and repair of irrigation tools and equipment, though they have not taken any formal training. Graduates of technical schools are not involved in pump maintenance activities.

Task 5: Environmental Services for Improving Water Quality Management

Stakeholders are willing to pay for environmental quality improvement services. The role of local government is critical in this process. If the local council is not active or improperly interferes then this can adversely affect environmental service benefits for residents. Interference by the local council in the domestic garbage pickup service in Senbo Village resulted in the interruption of the private sector provider's service.

The low cost DBAF wastewater treatment plant is technically and economically feasible for rural villages with limited land. Limited financial resources of local NGOs could have an adverse affect on proper operation & maintenance. The DBAF wastewater treatment plant is almost ready to be transferred to the CDA, however, identifying technicians to train and operate the facility is difficult because of the salary rate the CDA is able to support. Some cost sharing arrangement with local government may be needed.

Task 6: Improved Wastewater Reuse Practices

The demo site experiment has shown that it is environmentally feasible to reuse treated waste water for the commercial crops specified in the Egyptian Waste Water Reuse Code. The analysis of crop samples from the demo site indicated with proper health precautions flowers, flax, sorghum and ornamentals can be safely cultivated utilizing treated wastewater.

Task 7: Graduate Degree Training

Careful selection and screening of candidates will ensure success in this type of program. The 11 trainees sponsored by the Project were carefully selected for the M.Sc. graduate degree training in different aspects of water resources management. They all proved their ability to work for a M.Sc. Degree and passed their first year exams with distinction.

Monitoring & Evaluation

A quality control program for irrigation performance data is necessary to insure data quality and reliability. Data on irrigation targets, irrigation demand, and agricultural yields and prices, in particular, require significant attention to improve quality and reliability.

The Project should provide feedback on M&E results to District Managers and staff and BCWUAs and seek their assistance in interpreting the meaning and causes of the measured outcomes.

The M&E program requires an updated and consistent set of irrigable area figures for all 27 districts. Currently-used figures do not accurately and consistently represent District irrigable areas.

The second year of the client satisfaction survey worked much more smoothly than the first due to the experience gained during the first year. The survey continues to show its worth as a reliable and inexpensive way of collecting information on Project outcomes across the entire one million feddans of Project area.

The M&E team needs to work with the survey consultant to resolve sample distribution problems that cropped up during the second survey round.

Education, Communication, Public Awareness and Participation

The illustrated flip-book, communication tool kit “Discussion Guide to Share with Water Users” and the flip-chart kit based on the “Discussion Guide” were well received by the IWMDs and BCWUAs.

The close cooperation with the MWRI Water Communication Unit in carrying out communication and public awareness activities has been a total success. The process allows the Project to provide direct support to the WCU and in return make use of a well trained and equipped staff. The WCU has the capacity and capability to produce training & awareness videos and conduct awareness campaigns.

The Website has been a great tool for sharing Project news, information, successes stories, and reports.

Training

It is best to limit training during the summer irrigation season (June – August) because of the work load of MWRI staff during this period.

The decentralization of training has been very successful. This has minimized problems transporting the trainees. The key is to establish local training centers convenient to the IWMDs.

Women were very willing and eager to participate in the training, especially in Lower Egypt.

The On-the-Job Training program proved very successful. It allowed trainees to learn by doing and provided a mechanism for mobilizing IWMD staff to participate in achieving Project objectives and targets.

Procurement

Procurement of computers and office equipment locally and regionally instead of purchasing and shipping from the US saved time, money, and allowed for on-site maintenance by local suppliers.

To ensure proper specifications for water measurement equipment being fabricated locally, quality control procedures were supervised by MWRI Hydraulic Research Institute and Water Distribution Sector.

MWRI provided facilities (offices and furniture) and equipment (current meters) to the Project and the IWMDs allowing cost saving to the Project.

Life IWRM with the help of USAID and MWRI has established streamlined US procurement procedures that permits supply and delivery of US purchased equipment within 30 days.

Cost Control

The Project implemented a number of cost saving measures.

The Project has made extensive use of MWRI Integrated Water Management Unit, MWRI District staff, and local staff instead of expatriate and local sub-contractor STTA.

With the strong support of the MWRI Integrated Water Management Unit and H.E MWRI Minister, the contractor was able to establish offices within MWRI Ministry building in Cairo and on the MWRI premises in Zagazig and Qena. This has resulted in major savings in rent and travel, has allowed for considerable sharing of resources, including personnel, vehicles,

furniture, and equipment, and has supported the accelerated completion of a number of activities.

The Project decentralized and regionalized its training programs. These are being offered in each Governorate to minimize travel and accommodation expenses of trainers and trainees. Regional trainers and service providers have been used to the maximum extent possible, instead of bringing trainers from Cairo or the US.

To reduce costs and decentralize establishment of BCWUAs, instead of using central Irrigation Advisory Staff, IWMD staff were trained and were able to successfully establish and begin activation of the BCWUAs themselves.

Computers have been procured locally instead of from the US, and maintenance is being provided by local suppliers. The result was a tremendous cost and installation time savings.

Instead of procuring meters for measuring discharge flow from the US, an agreement was made with MWRI to provide 37 of these items from their inventory.

To reduce laboratory costs for water quality and soil sampling, special arrangements have been made with the MWRI Central Water Quality laboratory and the MALR soils lab.

Instead of purchasing vehicles, to reduce costs, the contractor is renting less expensive vehicles, in many cases on an as needed basis.

To reduce printing and distribution costs a website was established to post Project reports.

After the departure of the local finance specialist in July 2006 (Nermin Mokhtar) instead of hiring new staff, IRG successfully distributed admin /financial/procurement responsibilities among current staff.