Ministry of Water Resources and Irrigation

Regional Center for Training and Water Studies (RCTWS)

Study Visit to

"Irrigation Schemes in Egypt"

FINAL REPORT

Feb. 28 – Mar. 9, 2009

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Executive Summary

This activity *"Study visit to Irrigation schemes in Egypt"* was directed to water professionals in the water sector in Nile Basin, and developed to address the need of development of professionals' capacities in Irrigation at farm level.

The study visits were organized by The Applied Training Project (ATP) and the Regional Center for Training and Water Studies in Egypt (RCTWS) - Ministry of Water Recourses and Irrigation of Egypt (MWRI) for 10 days starting from 28 Feb. to 9 Mar. 2009.

The general objective is to demonstrate and transfer the irrigation expertise existing in the water sector in Egypt as discipline, and figure out its importance for water sector development.

The program was designed by the National Training Committee taking into consideration the objectives of each study visit and focusing on field visits and group discussions at farm level.

The program was attended by 17 participants from different NB countries, and guided by highly qualified experts from the MWRI - Egypt.

The program evaluation is carried by the participants themselves through reporting on information and knowledge gained as lessons learnt during the study visits.

Program Objectives

The main objective of the course is:

To demonstrate and transfer the various expertise existing in the field of irrigation in Egypt as guidelines for water sector development

Program Information

- ***Out Line of the Program***

The program covered the following activities:

- ✓ Perception and wrap up sessions
- ✓ Study visit to small scale irrigation schemes
- ✓ Study visit to large scale irrigation schemes
- ✓ Study visit to closed basin schemes
- ✓ Study visit to irrigation improvement projects
- ✓ Study visit to water reuse projects
- ✓ Study visit to water quality laboratories

The Program schedule is attached in Annex (1)

- ***Program Duration***

The Course Duration is two weeks from 28 Feb. to 9 Mar. 2009 - 9 working days.

- ***Participants***

The study visit drew water professionals from seven Nile Basin riparian countries; Ethiopia, Uganda, Kenya, Tanzania, Rwanda, Burundi and DRC. The list of participants and their contact information are attached in Annex (2).

Program Evaluation

Evaluation of the study visits was made by participants themselves through reporting on what lessons they learnt, what expertise they gained and what cases they can transfer and implement to introduce and develop irrigations schemes in their countries.

- ***Brief information on irrigation in Egypt***

Nature has imposed on mankind different living styles. Those living in countries with rich natural resources can maintain a prosperous life and achieve a high standard of living, whereas those living in countries with poor, limited or scarce national resources have to struggle for survival. As water is the most essential and vital element in life cycle, it is imperative to develop, conserve, protect, abstract, manage and use water safely and economically for the welfare of people.

Environmental damage caused by droughts and floods, scarcity an abundance, abuse and misuse in water resources are the main threats to livelihood and food supply of hundreds of million of the world's people. As world population has doubled, the demand for water also tripled as agricultural, industrial and residential uses climbed, outstripping the supply in many countries. As a result some countries experienced severe drops in water tables leading to depletion of ground water aquifers, and insufficient river flows and failed to maintain the balance between supply and growing demand.

As agriculture consumes about 80% from the water of the world water resources, it is no doubt that On Farm Water Management is of a great priority and should be encouraged and adopted as an integral unction to maintain the balance between supply and demand for the safeguard of human and animal life. Demand must be managed because supplies cannot be infinitely increased.

The most obvious way to deal with water scarcity and food security is to improve use efficiency, particularly, increase the crop productivity per unit volume of water used in the agricultural sector, still the largest and least efficient consumer of water. These can be achieved through application of On Farm Water Management Programs.

The Egyptian irrigation system is one of the oldest and most sophisticated systems in the world. The irrigation system in Egypt is managing approximately 55.5 milliards cubic meters of water every year about 40 milliards cubic meters of it to irrigate more than 6.5 million feddans with cropping intensity about 2.3 per year. In order to understand the complexity and the challenges that meet the engineering work required to improve the irrigation system in Egypt, it is essential to describe the system in brief, and give highlights on the development and operation of system.

The Egyptian irrigation system which is developed mainly on the Nile is characterized by a large centralized network includes huge number of canals and control structures. The conveyance and distribution of water to the irrigated lands over the valley and delta is the major task of the Ministry of Water Resources and Irrigation.

Egypt is in the tail end of the Nile valley basin. Its share from the Nile River is 55.5 milliard m3. As a result of building the High Aswan Dam, a huge lake is produced named lake Naser. Lake Naser is used as a storage facility and the dam is controlling the amount of water delivered to satisfy all purposes including irrigation, municipalities, industry, navigation and electricity. Down stream the High Aswan Dam the river is running about 1000 Km branching into two branches creating a delta and the two branches ended to the Mediterranean Sea.

Along the River Nile there are several Barrages and main principal canals taking from the river at both sides. A set of main canals are taking their water from those principal canals. Where a set of principal are fed from what are called Riahs, providing water to the main canals in delta. Those canals have a various system of classification according to size and function. Canals belong to the state government such as division and Principal canals, Main canals, Branch canals and Distributor canals. Low level Mesqas and field ditches “Marwas “are private channels their construction and maintenance costs are taken over by farmers. The water drawn directly from the canals for irrigation purposes is called “Direct irrigation system”.

▪ ***General comments by participants***

1. Irrigation infrastructures are capital intensive investments and require government involvement and commitment. This calls for formulation and harmonization of relevant policies in the key ministries handling water related activities.
2. The land use is such that there is concentrated settlement ensuring availability of land for organized agriculture as well as enhancing effective service delivery, resources optimization and efficiency.
3. Optimal utilization of the dwindling water resources requires adaptation of approaches that reduce water loss and promote water use efficiency. Egypt can serve an example to other riparian countries.
4. A basin wide approach to the above-mentioned and other challenges can yield better results and even bigger aggregated benefits. The countries concerned will therefore need focused and integrated long term plans if they are to measure up to the challenges.
5. There is need for regulated working partnerships between public and private sector in service delivery as ensure value for money to the beneficiaries;
6. Farmer participation in decision making and choice of interventions to their problems through farmer groups and water users associations can accelerate technology adoption and effective information sharing.
7. Profitable farming nurtures and stimulates demand for advisory services, improved water saving options, soft loans and enhances the level of acceptance to water users associations.
8. Simple and low cost but appropriate water management technologies can register high adoption rates and favor among small scale irrigation farmers;
9. Establishment of working water users associations at farm and district levels renders them effective.
10. Expensive and yet critical irrigation activities like grading/leveling of plots require financial support to farmers or cost sharing through government & NGOs programs.

Annex 1

Study Visit to Egypt
Final Program

	Activity	Location	Institute	Objective	Trip Info
28 Feb. Saturday	Perception session (seminar)	Hotel	---	To be aware with the irrigation systems and schemes existing in Egypt	Time: 11:00
1 Mar. Sunday	Study visit (Lecture + Field visit) small scale irrigation schemes	Kafr Elshiekh	Agriculture Research Center - Ministry of Agriculture	To recognize all irrigation systems deployed in Egypt To define techniques and skills used in irrigation systems at the farm level	Distance: 150 km Direction: North to Cairo Departure time: 8:00 Arrival time: 18:00
2 Mar. Monday	Study visit (Lecture + Field visit) to El-Salam Canal Project	Sinai	North Sinai development Authority	To determine approaches applied to manage irrigation systems in developed area	Distance: 140 km Direction: Northern East to Cairo Departure time: 8:00 Arrival time: 18:00
3 Mar. Tuesday	Study visit (Lecture + Field visit) to Closed Basin scheme	Fayoum	MWRI -	To determine approaches applied to manage irrigation systems in closed basin environment	Distance: 130 km Direction: South to Cairo Departure time: 8:00 Arrival time: 18:00
4 Mar Wednesday	Study visit Lecture + Field visit) to Central Lab	El-Qanater	National Water Research Center	To define all water-related lab tests	Distance: 65 km Direction: North to Cairo Departure time: 9:00 Arrival time: 17:00
5 Mar. Thursday	Study visit (Lecture + Field visit) to Irrigation Improvement Projects (IIIMP and W10)	Kafr Elshiekh & Western Delta	W10 Project - MWRI	To determine approaches applied to improve water use at the farm level To define techniques and skills used in irrigation systems at the farm level	Distance: 150 km Direction: Northern West to Cairo Departure time: 8:00 Arrival time(Alex): 18:00
6 Mar. Friday	Week End (a tour in Alexandria is arranged)				
7 Mar. Saturday	Field visit to medium scale irrigation scheme	Western Delta	Dina Farm	To define techniques and skills used in modern irrigation systems at the farm level	Distance: 150 km Direction: South to Alex. Departure time: 8:00 Arrival time(Cairo): 18:00
8 Mar. Sunday	Study visit (Lecture + Field visit) to Water Reuse Project	Eastern Delta	Drainage Research Institute	To determine techniques implemented to reuse waste water in surface irrigation systems	Distance: 200 km Direction: Northern East to Cairo Departure time: 8:00 Arrival time: 20:00
9 Mar. Monday	Wrap-up Session	Hotel	---	To conclude the lesson learned and case studies that can be gained from these study visits	Time: 11:00

Annex 2

Study Visit to Egypt
28th Feb. to 09 Mar. 2009
Final List of Participants

#	Country	Name	Tel	Email	Institution / Employer / Organization
1	Burundi	Pierre Sindayikengera	+257 77 786160	sindapierre@yahoo.fr	Ministère de l'Agriculture
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