PUBLIC-PRIVATE PARTNERSHIP IN IRRIGATION AND DRAINAGE

The Egyptian Experiences

Dr. Mohamed A S Wahba

Ministry of Water Resources & Irrigation, Egypt
General Director, Minister’s technical office
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Background

• Challenges facing the water sector in Egypt
  – Limited water resources (Nile, non-renewable groundwater, rainfall, …)
  – Population increase and demographic distribution
  – Water quality degradation
  – Costs for new projects and O&M are escalating dramatically
  – Lack of awareness and need for more coordination between different stakeholders
  – Lack of water supply and sanitation
  – More than 90% of water supply of Egypt comes from outside its borders
  – Impacts of world trade agreements and globalization on local economy.

• Outlines of PPP policy in Egypt’s water sector
  – Strengthening participatory management.
  – Implementing integrated developmental initiatives.
  – Securing the rights of poor population.
  – Ensuring private sector ability to improve services.
  – Maximizing returns per water and other resources.
  – Water conservation
  – Relieving fraction of governmental and public burdens.
  – Creation of new job opportunities.
Nile River length is more than 1200 km
About 30000 km of Irrigation canals
About 20000 km of drains
About 1480 pump stations

About 3 billion US$ have been invested during the last five years for I&D infrastructure and O&M
Challenges for PPP in I&D

- Scarce water resources are often used in producing low value crops.
- Agriculture consumes 85% of water resources but contribute less in the GDP.
- Irrigation involves important social and economic dimension for the poor.
- Irrigation infrastructure is increasingly expensive.
- Landholding fragmentation.
- No previous experience with PPP (pay for service).
- The political, economy and security instability.
PPP in I&D in Egypt
Irrigation Improvement Projects

- Implementation in ≈ 168,000 ha of Egypt’s irrigated area.
- Introduced improvement package at tertiary and delivery systems.
- Cost of tertiary level improvement is recovered over an amortization period of 20 years.
- Cost of single lifting pump is recovered over a period of 3 years.
- No consideration of interest or inflation in the cost recovery mechanism.
- O and M at each lifting pump is managed by WUA
National subsurface drainage Projects

- The largest sub-surface drainage program in the world (≈ 5.8 million Acres).
- Private sector is involved in implementation and maintenance of drainage networks.
- Increase in crop yield due to subsurface drainage promotes users willingness.
- Cost of subsurface drainage is recovered over an amortization period of 20 years.
El-Salam Canal Project

- 50% of project area is allocated to large investors; 20% to small investors; and 30% to small farmers.
- Transfer of low cost farming technologies from large investors to small investors and individual farmers.
- Holding company distribute, operate, and maintain facilities, and provide on-farm services including marketing and training.
The largest part of the project area is allocated to large investors at minimal price.

MWRI constructs main infrastructure while investors are responsible for developing their own facilities.

A great deal of project cost is recovered from users.

Holding company operates and maintains main facilities, and provides other farming services.
INTEGRATED IRRIGATION IMPROVEMENT AND MANAGEMENT PROJECT (IIIMP)

- Establishment of Water User Organizations in 315,000 ha to participate in O&M at all hydraulic levels, depending on the level.
- Farmers participate from day 1 in the planning, design, and implementation, and also in the management afterwards.
- Integrating irrigation and drainage cost in one cost recovery mechanism.
West Delta Irrigation Project

- Located on both the East and West side of the Cairo-Alexandria Desert Road, between km 45 and km 80.
- 255,000 Net Fed, of which 47% is already cultivated.
- Agriculture economy dependent on groundwater usage.
- Important producer of high value fruit and vegetables, much of it destined for export markets.
- Increasing trend of groundwater declining levels and deteriorating quality.
The Project Concept!

• To Provide Surface Water Irrigation to Area With Potential Total Coverage
• Involve Private Operator in Financing and Management through Design-Build-Operate Contract
• Recover Both Capital and O&M Cost through a Volumetric Service Charge
• Allow for Conjunctive Use of Groundwater
• Involve Private Sector in Financing and Management
• GOE Assumes Large Share of Financing Risk
**Financial Arrangements**

For the start area (90,000 fed):
- Government facilitates 20-years (including 4 years grace period) soft loan from the World Bank to cover up to 85% of the first area project cost (~US$ 175 million).
- Private operator provides at least 15% of the first area cost (~US$ 30 million)

Rest of the concession area (100,000 fed)
- Private operator raises full financing for the rest of the concession area
Financial Transaction

• **Concession fee**: paid over 20-years by the PO to the government to recover the part drawn from the loan plus interest plus surcharge for potential currency devaluation

• **Service charges**: tariff consist of two components paid by beneficiaries:
  – Fixed Flat Tariff (FFT): per feddan served per year over 20 years
  – Volumetric Variable Tariff (VVT): monthly per cubic meter consumed, adjusted periodically for inflation.

• **Security deposit**: equivalent to 3-month FFT paid by beneficiaries at signing contracts
West Delta Irrigation Project

Sources of Financing

Total Project Area 255,000 feddans

First Concession Area 190,000 feddans

First Phase 90,000 feddan

Cost in U.S. Dollars

Funding raised by the Private Sector

Loan amount for First Phase
Institutional, and regulatory arrangements

Ministry of Water Resources and irrigation

Regulatory office

Services Provision

Service Charges

Tariff Adjustment

Loan arrangement

Loan withdrawal and Concession Fee payment

Operator

Farmers

The World Bank

Service Standards

The diagram illustrates the institutional and regulatory arrangements for water resources and irrigation. The Ministry of Water Resources and Irrigation is at the center, with connections to the Regulatory Office, Farmers, and the World Bank. Key arrangements include loan arrangements and service standards, with interactions involving service provision and charges.
PPP Opportunities in I&D in Egypt

- Implementation of modern irrigation networks (either sprinkler or drip systems) on new reclaimed land.
- Maintenance of irrigation and drainage networks.
- Implementation of drainage systems in new reclaimed lands.
- National project for water conservation (short term) in urban areas (small companies for providing drinking water saving tools and metering).
PPP Opportunities in I&D in Egypt

- Low cost Desalination of seawater in coastal cities.
- Solid waste management companies in rural areas
- Low cost wastewater treatment in rural areas.
- Private equipment suppliers (pipes, valves, etc)
Lessons Learned

• Despite the availability of all the factors of success for West Delta project as a unique pilot project and the completion of all procedures and arrangements at all levels, but due to the lack of previous experience of the PPP in the field of irrigation and the presence of concern about the risks has led to the most qualified companies did not submit bids for the project and this requires reconsidering more incentives to investors.

• It is recommended to hire an international consultant specialist to develop ways and alternatives required which would avoid or minimize these risks.
Lessons Learned

• West Delta Irrigation project is a unique model and it is expected if implemented it will change the concept of providing services related to irrigation and drainage in Egypt.

• MWRI is currently reconsider the project in light of changes that have occurred in Egypt after the revolution of January 2011 and how to re-launch the project.

• Creation of an enabling environment including awareness program about the concept and benefits of PPP and capacity building at multi level of public and private sectors.

• Dissemination of the results from previous projects in the field of irrigation and drainage, especially in Morocco is a must.
Lessons Learned

• Pilot project is very important key for disseminating the concept of PPP in irrigation and drainage projects.

• In New Egypt after the Jan, 2011 revolution PPP is on the agenda and the opportunities in water sector include Implementation of modern irrigation (sprinkler or drip) and drainage systems networks in new reclaimed land, Maintenance of irrigation and drainage networks, water conservation in urban areas, desalination of seawater in coastal cities, solid waste management and low cost wastewater treatment in rural areas.
Thank You