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POTABLE WATER AND WASTEWATER SECTOR REVIEW

NOTES FOR AID/W BRIEFING

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I. BACKGROUND

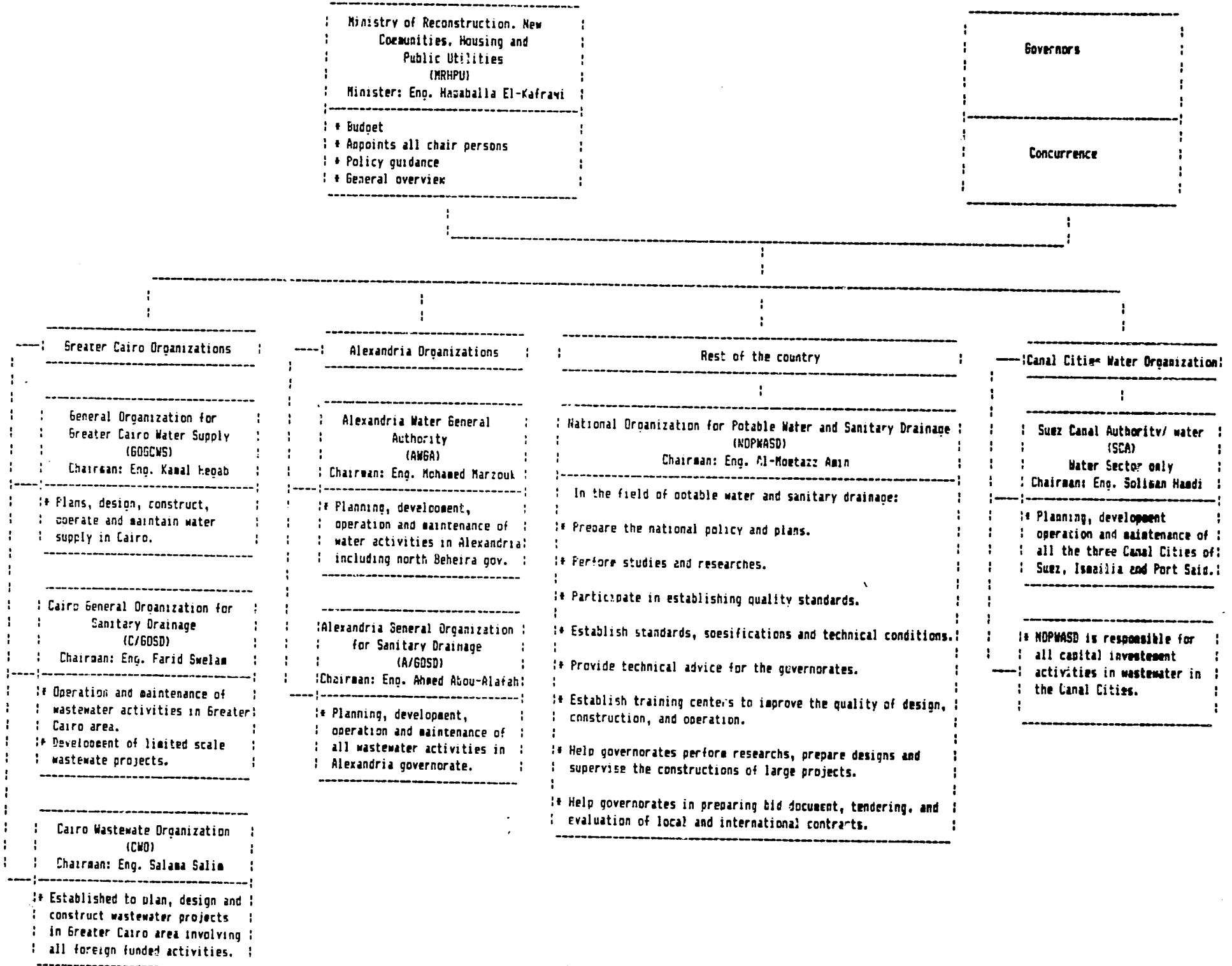
a) Why AID involvement in Water/Wastewater Sector

When the AID program was resumed in Egypt in the mid-1970s, the water/wastewater infrastructure picture was an urgent GOE concern. Years of neglect due to improper or inadequate operation and maintenance, lack of expansion to accommodate population growth, and war-damage in the Canal area had resulted in an inadequate service and serious environmental problems. Raw sewage was flooding the streets in Cairo and Suez, particularly in the poorer areas, and Alexandria streets and beaches were similarly contaminated. The GOE not only faced a potentially explosive health problem, but also an equity problem with political implications.

Although the GOE considered the sector of the highest priority, the sector was at a standstill until our involvement. Even after a decade of active involvement (1978-1998) by AID, and about \$1.8 billion in infrastructure development, our investments will be adequate to meet the demand for the year 2000 only. Additional investments in infrastructure will be required to meet the new and growing demand. All our projects include elements of training, operation, maintenance and institutional development, which we hope will leave behind adequate human resources to manage the sector. The GOE will require huge amounts of cash to expand the infrastructure network in a systematic manner to meet the ever-growing demand.

TABLE 1

WATER & WASTEWATER ORGANIZATIONAL STRUCTURE



b) Urban Water/Wastewater Sector Organization

The principal organizations in the sector are listed bellow. Table 1 provides an overview of the organization of the Sector.

1. Ministry of Housing, Reconstruction, Public Utilities and New Locations (MHRPUC) / in collaboration with all Governorates

- . Provides policy guidance and general oversight of the sector.
- . Obtains all the required budgets.
- . Assigns all chairpersons and other key leadership personnel of all organizations in the sector.
- . The Minister is the final arbitrator on all issues in the sector and the ultimate decision-maker.
- . The Governors concur in all Ministry decisions.
- . Governorates are responsible for all operations and maintenance and for revenue collection.

2. National Organization for Potable Water and Sanitary Drainage (NOPWASD)

- . National Entity responsible countrywide except greater Cairo, Alexandria and the Water subsector in the Canal Cities area.
- . NOPWASD is presently involved in implementation. It is the only organization that can contract for expatriate engineering, technical assistance and construction services in the sector (outside Cairo, Alexandria and Canal Cities). It was scheduled to phase out its implementation role and become a regulatory and service organizations by the time we complete all construction. That date is now mid-1990s.

- . Prepares national quality standards, certification standards, design standards, financial standards.
- . Establishes training centers - management, O&M training.
- . Authorized staff 1,337 people and 22 executive level personnel - only 890 currently filled - Approximately 160 engineers, 250 sub-professional technicians - rest administration and support. Turnover is high because of low wages and poor working environment.
- . NOPWASD has been a cumbersome entity to work with - primary weakness is making decisions through intra-department committees.
- . Our Institutional Support project is intended primarily to assist NOPWASD become a more efficient regulatory agency.

3. Cairo Wastewater Organization (CWO)

- . The Chairman of CWO reports to the Minister of Housing, however, must also coordinate with Cairo Organization for Sanitary Drainage, the ultimate operator of the system and with the three Governors in the Greater Cairo area (Cairo, Giza, Qualiubia). AMBRIC, the American/British engineering consortium, provides engineering services to CWO for the execution of the works.
- . CWO was created in 1982 specifically to ensure the timely completion of the Greater Cairo Wastewater project, including the British-funded east bank works and the German-funded Helwan project.
- . The staffing of CWO has increased gradually since 1982 and now has reached 280 persons including 123 engineers. During December 1986 a Board of Directors was established to provide Ministerial oversight.

4. General Organization of Greater Cairo Water Supply (GOGCWS)

- . Has responsibility for planning, designing, implementing, operating and maintaining the water supply system in the area of Greater Cairo.
- . Has about 10,000 employees. Overstaffing and lack of professional skilled workers is a major problem in all GOGCWS's departments.
- . Cairo Water Supply I provided a management consultant to assist GOGCWS in upgrading its services. The consultant recommended improvements in organizational effectiveness, financial viability, trained manpower availability, and service delivery capability. Cairo Water Supply II will provide for the implementation of these recommendations.

5. Cairo General Organization for Sanitary Drainage (C/GOSD)

- . Responsible for the operation and maintenance of the Greater Cairo sewerage system, and for the planning, design and implementation of sewerage projects which are not part of the Greater Cairo Wastewater Project.
- . Responsible to the Cairo, Giza and Qualiubia Governorates administratively and to the MHRPUC technically. Has 12,000 employees. The lack of skilled technical workers and experienced middle managers is a problem.
- . Cairo Sewerage I provided training for pump station operators and sewer cleaning staff. Cairo Sewerage II will provide a major institutional strengthening program directed at training and operational systems.

6. Alexandria Organization for Sanitary Drainage (AGOSD)

- . Responsible for the planning, design, construction, operation and maintenance of greater Alexandria wastewater system.
- . Has 3,000 personnel, primary weaknesses in mid-level management positions in finance, legal and construction management. Chairman delegates very little and has been undecisive manager.
- . Technical assistance provided under the Phase I project in Alexandria has proven ineffective. A new initiative is included under the project amendment to do more training.

7. Alexandria Water Authority

- . Responsible for the development of the water treatment and distribution system in greater Alexandria
- . Formerly a private company
- . AID does not finance anything in Water in Alexandria

8. Suez Canal Authority (SCA)

- . Primary responsibility is operation of the Suez Canal. Among its responsibilities is management of the water system in the Canal area.
- . Approximately 300 personnel are assigned to the Water Branch of the Works Department of SCA, located in all three major cities in the Canal Cities.
- . SCA is probably the best run organization in the GOE. They are outstanding collaborators in implementing the water portion of Canal Cities Phase I. They refused to participate in Canal Cities Phase II, which is primarily wastewater, but will receive some training under the project.

II. PRESENT PORTFOLIO

a) Overview of Project Portfolio

The present portfolio includes water/wastewater initiatives in the eight largest cities of Egypt: Cairo, Alexandria, Port Said, Ismailia, Suez, Beni Suef, Fayoum and Minia. Local Development, under a separate program, provides sector support at the rural level.

- . Total authorizations thus far (excluding Local Development) are \$1.7 billion with \$100 million firm for FY 1988 for a grand total of \$1.8 billion. This completes our commitment in the sector.
- . A detailed listing of projects and status of authorizations, obligations, commitments and disbursements is shown in Table 2. Attached are individual project sheets.
- . Accomplishments this year include the completion of the following contracts: Perini/Alexandria, Cairo Water I, Canal Cities I, Cairo Sewerage rehabilitation with an estimated total value of \$370 million.

b) Memorandum of Understanding (MOU)

- . The current portfolio in water/wastewater is based on the memorandum of understanding (MOU) which was signed in 1984 to regulate AID involvement in the sector.
- . The MOU calls for AID providing \$1.2 billion 1982-1987. Authorizations have exceeded that figure.
- . The GOE was to increase tariffs, to provide adequate training facilities and qualified personnel, to establish autonomous water and wastewater organizations, and to retain consultants to complete projects on time.

TABLE 2

A I D P R O J E C T S

	LEVEL OF FUNDING (In millions US Dollars)				Served Population (000) Capita	PURPOSE	Remarks
	AUTHORIZED	OBLIGATED	COMMITTED	DISBURSED			
OLD							
CAIRO							
SEWAGE I	129.0	129.0	126.4	114.0	7.000	Rehab Cairo sewerage system.	PACD is Sep. 30, 1988.
SEWAGE II	555.0	421.8	253.1	31.7	4,500	Upgrade Cairo west bank wastewater system.	PACD is Sep. 30, 1994.
WATER I	97.4	97.4	92.8	89.5	3.000	Expand Rod El-Farag water treatment plant.	PACD is Sep. 30, 1989.
SUBTOTAL CAIRO	781.4	648.2	472.3	235.2	14,500		
ALEXANDRIA	193.7	195.7	178.3	104.1	5,000	Upgrade wastewater system in Alex.	PACD is Dec. 31, 1992.
CANAL CITIES I	169.0	168.8	159.8	154.9	1,600	Improve water/wastewater systems in Canal Cities.	Completed except training.
PROVINCIAL CITIES	110.0	110.0	25.0	24.0	500	Develop water/wastewater systems in 3 cities.	PACD is Aug. 31, 1991.
INST. SUPPORT	15.0	5.0	0.0	0.0	N/A	Enhance institutional capability of MRHPU & MOPWASD	PACD is Sep. 30, 1990.
SUBTOTAL OLD	1,274.1	1,130.7	835.4	518.2	21,600		
NEW							
ALEXANDRIA							
ALEXANDRIA II	63.7	63.7	0.0	0.0	No additions.	Add funds to complete phase I.	PACD is Dec. 31, 1992.
CANAL CITIES							
CANAL CITIES II	380.0	109.4	0.0	0.0	No additions.	Complete core components as planned in phase I.	PACD is Aug. 31, 1997.
SUBTOTAL NEW	443.7	173.1	0.0	0.0			
Planned (Firm)							
CAIRO							
CAIRO WATER II	100.0	30.0	0.0	0.0	No additions.	Upgrading Rod El-Farag Distribution System.	FY 88 funding.
SUBTOTAL PLANNED	100.0	30.0	0.0	0.0			
GRAND TOTAL	1,817.8	1,333.8	835.4	518.2	21,600		

60E Contribution LE 1,213 Millions

Other donors to the sector have in the mid 1980's averaged an expenditure of \$20 million per year.

- . Benchmarks were established to meet these goals, and the MOU calls for annual meetings to review progress toward achieving these benchmarks.
- . The 1987 annual review meeting was held in May and the executive session was held in July. A final draft report of 1987 annual review is attached.

c) A Brief Look at Water Tariffs

- . All tariff increases must be proposed by the Minister and approved by a high-level GOE committee.
- . Formulation of proposed tariff schedules, to be sent up to the Minister for consideration, involve public participation through "local councils."
- . In an effort to keep water tariffs low for the poorer population groups, tariffs schedules have been extremely low and at present only meet 50% of the O&M cost of facilities if all groups of customers pay their bills.
- . The MOU calls for tariffs to meet 100% of all water O&M and debt service costs and 50% of all wastewater O&M and debt service costs by 1989. That is impossible in theory even if all tariffs are collected. We are now aiming at meeting O&M costs by 1990, as outlined in the agreed-to benchmarks.
- . Table 3 and its footnotes provide a general overview of the tariff picture.

d. Current AID Strategy

- . No further infrastructure authorizations except Cairo Water II in order to properly utilize the completed \$100 million treatment plant.
- . To complete construction activities, ensuring adequate O&M provisions are contained in all contracts.

TABLE 3
Treated Water Tariff

	Mean Avr. of Water consumption	Rate			
		pre 1985	1985	Proposed by 87-88	Proposed by 91
1. Household use	57%	18	30	55	60
2. Governmental buildings	7%	6	50	90	100
3. Commercial and industrial	12%	70	100	130	150
4. Services, hospitals, schools and bakeries	11%	6	70	100	130
5. Tourism	7%	—	100	180	350
6. Others	6%	—	100	180	250
TOTAL (Avr.)	100%	23	54	88	114

Notes:

1. It is estimated that it costs 270 mill/m³ to treat and distribute one cubic meter of water. Of that total, 100 mills are for O&M and the rest for capital expenditure.
2. Our memorandum of understanding (MOU) calls for tariffs that would meet O&M costs by 1991. The proposed 114 mill/m³ will roughly be equal to the 100 mill/m³ now estimated for O&M when inflation factors are included.
3. In addition to selling potable water, Water Organizations also sell raw water for such purpose as gardening, watering public parks, etc. Raw water tariff was 6 mills/m³ pre 1985, is now 10 mill and will go up to 40 mills.
4. Wastewater Organizations impose no direct tariffs and depend on Water Organizations to collect for them. At present a 10% surcharge is collected to meet O&M cost.
5. Proposed 1991 figures are for Cairo only, but we expect country-wide levels to be within the general range.
6. The 30 mills/m³ domestic rates apply for the first 30 m³ per family per month. Rates for consumption above 30 m³/month increase progressively.
7. Most connections are not metered which leads to errors, and many groups do not pay their bills such as government agencies.

- . No new construction projects - focus on institutional development projects that would enhance the O&M capability, ensure the availability of trained personnel and simply ascertain that GOE sector entities grow and develop to be able to operate/maintain the tremendous investments made in the sector.
- . Live up to MOU benchmarks.

e) Principal Sector Issues

- . Portfolio shares several things in common: delays in execution and contractor problems. This is translated into extensive cost over-runs. Examples are in the Canal Cities project where Phase I financing was not enough to finance 50% of the work originally contemplated and Alexandria where an initial \$137 million has grown into \$272 million for the same scope (Phase I).
- . All problems derive from the reluctance or inability of GOE implementing agencies to make decisions on a timely basis, and to live up to the provisions of their contracts with expatriate firms working in the sector. Plausible reasons for GOE implementing agencies are fear of personal liability (culpability) and unfamiliarity with international contracting procedures.
- . Projects begun in the late 1970s are now either complete or nearing completion. All include substantial claims by U.S. contractors. All contractors leaving Egypt after completion of their work face Egyptian red tape related to taxes, social insurance, customs, etc.