

memorandum

DATE: March 3, 1992
REPLY TO
ATTN OF: OD/UAD, Mike Gould *MG*
SUBJECT: Water/Wastewater Sector Strategy
TO: Distribution

It is requested that we meet in the 8th floor conference room to discuss the draft urban water/wastewater sector strategy. The meeting is scheduled for 1:00 p.m. on Thursday, 5 March.

Attached is the current draft of the sector strategy paper.

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Water / Wastewater Sector Strategy

Executive Summary:

The importance of potable water and sanitary drainage can not be overstated to the Egyptian economy and the quality of life. The Nile is the source of 80% of Egyptian drinking water and it is to the Nile that the wastewater effluent eventually drains. Obviously, the closed system could and does have significant environmental impact. In Egypt, the incidence of diarrheal and gastrointestinal disease is characteristic of countries with much lower economic status; 25% of the population has no source of treated water and only 17 (out of 160) urban areas and 55 villages have sewerage collection systems. Productivity, economic growth and the quality of life are diminished by inadequate water and wastewater services. Drains and sewage flooded areas become dumping points for solid waste, which further complicates the unhealthy conditions. Groundwater is seriously threatened by solid and liquid wastes in areas where there are no sewers; the high levels of groundwater due to insufficient drainage makes this source of water susceptible to pollution. That clean water and sanitary drainage are important environmental and economic issues in Egypt has been thoroughly documented in assessments and studies on-going since 1979.

By 1995 eight recipient cities, with combined populations of 17 million people, will be receiving improved water and wastewater services as a result of USAID's work in the sector. However, the sustainability of the urban infrastructure provided under the program is doubtful unless public utilities are properly structured and supported to adequately operate and maintain these facilities. In addition, since USAID did not build entire systems, further work must be done in some of the cities to insure that deficiencies in the old systems will not harm, or render useless, USAID funded infrastructure.

USAID's goal is to continue to assist the urban population of Egypt in gaining greater access to reliable water and wastewater services through constructing and rehabilitating infrastructure. We will assist the government in improving operation and maintenance of USAID funded facilities to protect our significant joint investments. And finally, to assure the sustainability of facilities and their operation and maintenance, USAID will assist the GOE in creating regulated, modern utility organizations which will run efficiently and be based on cost recovery.

Overview: Constraints to Growth and Sustainability

From 1956 to 1979 the Government of Egypt was unable to finance major improvements in urban water and wastewater infrastructure; systems became overloaded as urban populations rapidly increased. In many cases, overload, poor operation and even poorer maintenance rendered large pieces of the urban system useless. For the past decade, USAID has focussed its water and wastewater program at the largest urban areas, where the sewerage problems are the most

visible and the sanitary needs can not be met using the Egyptian budget or locally available technologies. When the on-going projects are completed in 1995, it is estimated that USAID/Cairo's water and wastewater program will have affected the water or sanitation needs of 17 million people or roughly one out of every three Egyptians.

Needs within the sector are well documented. Between 1979 and 1986, numerous assessments were performed which developed a clear picture of the sector and served as the basis of the rationale for our involvement. Since 1986, further definition of sector needs was carried out through a series of thirty-six studies under the Water and Wastewater Institutional Support Project (WWISP). USAID's rationale for remaining involved in the sector is basically the same as it was in 1979 when work first began in water and wastewater. However, now that major infrastructure will soon be in place, we must focus on how it will be operated and maintained. Adequate potable water and sanitary drainage in highly concentrated urban areas are crucial to USAID's present mission goals to increased macroeconomic stability, improved health, productivity and economic growth. The mission has now set specific strategic objectives to increase access to, efficiency of and reliability of public utilities in large urban areas and to improve their cost recovery. However, just as these objectives are similar to those of a decade ago, so are the constraints to making lasting achievements against those targets.

In a 1984 Memorandum of Understanding, USAID agreed to provide a five-year, \$1.2 billion water and wastewater program; however, it was recognized at that time that such a program would not be sustainable unless weaknesses in the sector were addressed. USAID requested and the GOE agreed to undertake a program of improvements in the following four major areas:

- Graduated tariff increases adequate to cover the water/wastewater O&M costs and debt servicing (levels were targeted at 100% coverage of water O&M costs and 50% of wastewater O&M costs by the end of 1990)
- Provision of adequate facilities for training and technical services, and an incentive system to attract qualified staff
- Establishment of autonomous local water and wastewater organizations with the authority to retain service revenues for their own operating needs, and
- Retention of construction management firms to ensure timely completion of project activities.

The GOE and USAID met annually to review past and anticipated performance. As the large construction projects got underway, the annual meetings became an arena to discuss implementation problems rather than the broader sectoral issue. Many contractual problems

could not be solved by the weak host country implementing institutions and consequently, implementation issues had to be taken to higher levels of authority. The construction emphasis of the meetings was reflected in the accomplishment of goals: for example, GOE did retain construction management contractors for all of the projects. Other MOU goals were less successfully pursued. Although the GOE increased water tariffs seven fold through a national tariff and allowed the governorates to increase the tariffs by an additional 200%, the MOU O&M targets are not yet met. Also raising tariffs, by itself, does not improve a utility's financial position, because revenue gains are off-set by the lessening of subsidies rather than an addition to the utility's income. The GOE also experimented with more autonomous water and wastewater organizations with limited success (at Beheira and Kafr El Sheik) however, these companies are not yet delivering a full range of services, do not yet have autonomous boards of directors and are not raising and retaining their own revenues. In the area of incentives, retention of skilled workers and training there has been little gain, except in training, where donor's have directly intervened.

The MOU did not tie assistance levels to sector performance. USAID has now exceeded the MOU program by \$600 million. As a result, the permanent sewage floods in Cairo which dramatically beckoned USAID into the sector in 1980, have largely disappeared and the water supply is markedly improved in quality and quantity. USAID can consider its program successful in affecting the quality of life for the citizens of Cairo. The large infrastructure projects, which will bring similar improvements in services to Alexandria, Fayoum, Beni Suef, Minia, Port Said, Suez and Ismailia, will be finished by 1995. Long term sustainability of these facilities is questionable and outside these eight cities, the problems in water and wastewater remain much as they were 15 years ago, in spite of large outlays of Egyptian spending on the sector by NOPWASD.

The inability of Egyptian institutions to meet this urban challenge stems from the way the sector is managed. The constraints which bind both growth and sustainability in the sector fall into three major, interrelated categories, policy, institutional and technical:

Policy: The body, mandated to set policy for water and wastewater is the Ministry of Housing and Public Utilities. (MHPU) The Ministry has relegated all policy analysis to the National Organization for Potable Water and Sanitary Drainage (NOPWASD), an organization which is not sufficiently developed for that purpose. As a consequence, policy decisions are still made in an ad hoc manner and the Ministry reacts only to crises, i.e., a major donor's complaint or the People's Assembly's publicized criticisms. The Ministry's recent decision to make water and wastewater utilities more autonomous, may have come because of the Ministry's inability to cope with the rising ground swell of service demands rather than from the repeated recommendations of the donors. The

absence of a commitment and lack of a technically informed decision making body for the government in this sector are major policy constraints. Another major policy constraint is the prevailing impression amongst decision makers that the majority of Egyptians can not afford to pay the cost of potable water and sanitary drainage. USAID has conducted several "willingness to pay" studies which contradict this widely held opinion.

GOE personnel policies and legislation produce an overstuffed, under paid, poor performing workforce in the sector. A policy of subsidization and centrally set tariffs fix budget levels which are insufficient to cover proper O&M costs, particularly in wastewater. General GOE management demands that revenues collected are either sent back to the treasury or used to offset the centrally approved budget. Utilities are neither rewarded nor punished vis-a-vis their fiscal performance. Few standards are set and managers are not rewarded for innovation.

Institutional: Because GOE central control and organizational policies restrict the autonomy of local organizations, water and wastewater managers make few management decisions and often function as a "chief" technician. Responsibilities are unclear and diffuse. With few exceptions management is lethargic and top officials see themselves, at best, as administrators rather than utility managers. Skill levels of operators and technicians are low and training tends to be almost exclusively donor funded. Training in sanitary engineering is scarcely available in the country. Modern cost accounting techniques are not known and each agency must use a centrally mandated accounting method which has little application to the operation of a public utility. There is no flexibility in the centrally allocated budgets and Ministry of Finance appointed accountants sit in each organization to assure that the cumbersome government process is strictly applied. A manager who would like to introduce modern techniques in which savings in one area could be applied to overruns in another, is prevented from doing so under this system and is subject to arrest and removal.

Public financing instruments such as municipal bonds are not used or understood, so municipalities must rely on the central government to undertake new construction, even though they might be willing and able to fund that construction, were a suitable financial entity available to provide loans.

Technical Constraints: Until July, 1991 when USAID assisted NOPWASD set up a training center at Damanhour, there was no water and wastewater training center in the country. One of the largest technical constraints is the lack of skilled

operators, engineers and managers. As soon as personnel are trained, they are immediately hired by the private sector. The source of drain on trained manpower comes from the Gulf states, and from our and other donors' consulting teams.

Design standards and standard operating procedures are needed in the sector. Engineers are needed who can review specifications and monitor performance. The private sector has, through USAID FAR contracting, become more capable of producing quality construction, however, public utility managers have not become equally capable of monitoring their construction or judging their designs.

These constraints have a common theme: water and sewerage systems are local level services; however, at present, they are totally controlled by the central government. Local revenues are not retained and local responsibility is not present. This results in irresponsible management, unsustainable institutions and inability to meet the growing need for additional infrastructure.

Strategy:

The Mission's goals of greater access to reliable urban services and cost recovery can not be met in the water and wastewater sector without policy and institutional reform. As a result, Sector Reform is a core element of the Mission's strategy. The GOE must commit themselves to establishing a system of regulated public (or in some cases, private) utilities to replace the centralized organizations which now provide water/wastewater services. Once this is done, then improved tariff collection/retention, personnel policies, budgetary control, O&M, etc. will be possible. To implement the reforms, it will be necessary for the Ministry of Housing and Public Utilities and for NOPWASD to adopt new responsibilities and shed others. The World Bank has suggested major reforms at the central government level which would be in keeping with our strategy. (See Draft Executive Summary of the World Bank Assessment.)

Technical Assistance - Our proposed strategy has two main technical assistance (TA) thrusts: TA to the Ministry to develop a system of reforms at the national level and TA to each local water/wastewater organization charged with operating, maintaining and managing services with facilities USAID has funded.

The Ministry of Housing and Public Utilities has expressed interest in a form of decentralizing water/wastewater organizations along the lines of the old public sector companies, using the independent holding company model. A draft decree to this effect is presently before the State Council. How decentralization would be carried out is unclear to both the Ministry of Housing and Public Utilities and NOPWASD, who would be charged with the execution of such a plan, were it to be made law. The GOE has asked for USAID's assistance. USAID will provide technical assistance which will work closely with the GOE to

a) define reform objectives, b) develop an implementation plan, c) define benchmarks for performance which will be included in future Project Agreements or possibly a new Memorandum of Understanding, d) produce project documents for activities which will assist municipalities with infrastructure and organizational technical assistance

The USAID advisors will first be asked to introduce the GOE to several types of workable models of regulated municipal utilities as possible alternatives to the cumbersome government model with which they are familiar, and are presently inclined to follow. Once the models are understood, the advisors can then embark on the program outlined above.

At the same time USAID will carry out O&M costs and tariff rate studies in Cairo, Alexandria, the Canal and Provincial Cities. This is a necessary step to take before detailed plans for setting up more autonomous organizations can be completed. Decision makers need to know how much money it will take to make a company financially viable and how to schedule the raising of tariffs and reduction of subsidies so as to assure that there will be no "tariff shocks" or serious political repercussions.

The other important thrust of our technical assistance program will be directed through on-going TA contracts in Cairo Water II, Cairo Sewerage II, and the Canal Cities II Projects. The technical assistance in these contracts comprise a total of \$46 million. Consultants were directed at functionally strengthening each recipient institution; their terms of reference accepted the constraints of central control and the consultants were charged with assisting the organization to work better within these constraints. However, with the recent decision of the GOE to move toward privatizing public sector authorities, there appears to be an opportunity to use presently in place T.A. to help establish modern utility management systems. The technical assistance consultants will

(a) familiarize themselves with Law 203/1991 as it applies to public sector companies and authorities and agree with USAID and the implementing agency on changes to their current scope which will make it more responsive to assisting the establishment of more autonomous organization (b) carry out the cost and tariff study for their respective organizations and assist them in understanding the implications of the findings (c) assist them in establishing a new rate structure (d) establish steps for the introduction of a graduated tariff (e) establish a cost accounting system, and (f) generally in all of their functional task focus on preparing their cooperating institution for more autonomy in operations and responsibility in management.

New Projects:

In order to meet our objective to increase access to utilities in urban areas and to protect our sizable past investments and to further sector reform, the Mission will have to pursue new infrastructure projects. Based on the above outlined technical assistance and in consultation the GOE, we will establish a graduated program of benchmarks to measure institutional autonomy: cost recovery, retention, personnel policy (certification and training, incentives), etc. These will be included in specific program conditionality and/or a new Memorandum of Understanding. Conditionality will have to be project specific and will focus on the following projects:

Alexandria Wastewater II Project:

Further work in Alexandria is necessary to ensure that the facilities provided under Alexandria Wastewater I are properly integrated with the existing AGOSD system so that they can perform as conceived. Aging and poorly maintained AGOSD pump stations can not be relied upon in their present condition to keep the system working. Additional project assistance is required to ensure that the facilities will be properly operated and maintained. Under AGOSD's current organization, neither the funding mechanism nor the management structure will ensure that the facilities can be maintained.

In terms of infrastructure needs, the current project does not cover the area of the city in most need for sewage collection, (the Central Zone). We propose covering this need and ensuring that the effluent is discharged in an environmentally acceptable way to the sea. USAID has made key decisions concerning the sea outfall, and given that the GOE would agree and meet certain conditionalities regarding the disposal of effluent and reorganization of AGOSD under trained and autonomous management, we could be receptive to a project to assist Alexandria in completing their system. It is estimated that this project would cost \$600 million.

Cairo Sewerage III Project:

Work done thus far under Cairo Sewerage II has not assured the sustainability of the USAID financed system. While the institutional strengthening which will assist GOSD for the next two years will undoubtedly improve the operation of the organization, it will not attack the basic problems of sustainability which will necessitate fundamental changes in the organizational mandate of the utility.

The Purpose of the CSIII Project would be to mitigate the impact of the rapid urban growth of Giza on the quality of water in the Rosetta Branch of the Nile by assuring self-

sufficiency and sustainability of the West Bank (Giza) sewerage system. To ensure the sustainability of our present and future infrastructure investment, GOE will have to create an independent wastewater organization to operate the West Bank system. This organization, like its sister organization in Alexandria (above) will be formed along a modern West European or US model.

Construction of major new infrastructure would necessarily be a part of the CSIII Project and although requiring the majority of the funds, would by no means be the focus of the project. This infrastructure portion would be limited to expanding the Abu Rawash Wastewater Treatment Plant to secondary treatment and an increased capacity of 600,000 cubic meters per day. This will make it compatible with the conveyance system constructed under Cairo Sewerage II.

Together, these two projects, **Alexandria Sewerage II and the Cairo Sewerage III Project**, could constitute doubling our investment in these cities. However, we would make this commitment only under certain **conditions**: GOSDs are reorganized along the lines of regulated modern municipal utilities (either in conjunction with the water organization or separate from it) before construction bid documents are tendered; that the top management of the organizations be professionally trained in utility management; that 100% O&M cost recovery plans, which would be phased in by agreed upon increments, and would be accepted by the Boards of Directors and the Governorates; that the O&M budgets will include the training costs necessary to improve GOSDs work force; that in order to further improve staff performance, personnel systems, based on merit rather than seniority be adopted; that an operators' certification program be adopted; that realistic compensation systems be instituted; that all costs (not just O&M) be reviewed on a yearly basis, using modern utility costs analysis and that tariffs be raised accordingly and regulated by a public, but non-governmental body. Mission management will have to decide on a schedule of benchmarks for performance and careful planning regarding the tranching of contracts would be necessary if all of the reforms were not implemented before construction began.

A reform agenda maybe a long term process for Alexandria and Cairo because of strong political vested interests and the size of the entrenched labor forces (Cairo Water and Sewerage 26,000 employees and Alexandria Sewer 4,000). It may be politically and practically more feasible to achieve a reform agenda by working with the secondary and provincial cities.

Secondary Cities Water and Wastewater Project:

This project will implement reforms and establish the autonomous water and wastewater company reforms in governorates or secondary cities. It will be supported by the previously mentioned technical assistance. A concept paper has been prepared for SCWW Project which would provide

assistance to urban areas with 50,000 to 400,000 people. The project's funding (\$200 million) for infrastructure would be available to a limited number of cities (10-15) which would meet the following criteria: have shown past initiatives in undertaking public improvement projects without the assistance of the central government or outside donors; accept the responsibility of supporting through taxes and tariffs the operation and maintenance of the system; accept a technical assistance package which would undertake the necessary task to set up an independent municipal water/wastewater company; agree upon and show the ability to recover 50% of the capital cost over a 20 year payback period to an intermediate financing institution which would then relaned to other cities which would meet the criteria.

Until there is clear agreement between the GOE authorities and USAID, certain of our interventions will act as interim safeguards to our investments: The new institutional consultants for Cairo Water Authority and C/GOSD will strengthen these organizations in managing their operation and maintenance. Two year site specific O&M contracts will continue to follow construction start ups. However, the contracts have only limited provision for trouble shooting and spare parts, and some of these contracts have already ended. The O&M Sector Support Project PID was approved in 1988. Its objective was to provide technical assistance and spare parts to support the operation and maintenance of AID-financed facilities after project-funded assistance terminated. This support project could act as a safety net should it take time for the larger cities to meet the conditions for reform USAID will set before undertaking additional infrastructure work in Cairo and Alexandria. The project paper preparation for OMSSP should be completed.