PDAB6-577
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LOCAL DEVELOPMENT II — PROVINCIAL

مشروع التنمية المحلية
LD II-P

FINANCED BY U S AGENCY FOR INTERNATIONAL DEVELOPMENT
مصدر التمويل : الوكالة الامريكية للتنمية الدولية

Concept Papers

for

Special Projects Related to

Potable Water Supply

Contract No.: 263-0182-C-00-8041-00
Project No.: 263-0182-3-60054

PWS8-01

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Concept Papers

for

Special Projects Related to

Potable Water Supply

(Work Plan Task PWS 7.1)

Prepared By:
Chemonics/Cairo

October 1990

PWS8-01

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FOREWORD

Under the 1990-92 Work Plan (July 1990), the Potable Water Supply Section is to provide concept papers for special projects. Six special projects are listed under Activity PWS 7, Task 7.1, as follows:

- Survey to determine rural water needs and the impact of water loss reduction on service standards
- Determination of operational costs for water supply systems
- Techno-economic study of renewable energy sources to run water pumps
- Identification of groundwater wells with excessive iron/manganese content
- Evaluation of four pilot loss reduction villages covered under AWP 1.
- Development of specifications on pipe laying and construction of reinforced concrete water towers.

This document contains concept papers for the first four of these special projects.

USAID/LAD has approved a special study to evaluate the water loss reduction program (item 5). This was given in Attachment 1 to a letter about SOW revisions dated 12 July 1990 from the Contracting Officer (see Appendix A). Section VII G of the attachment authorizes initiation of the special study to evaluate the water loss pilot program.

Appendix B is a copy of the approval for hiring a short-term local consultant to prepare specifications for pipe laying and construction of water towers.

Once approval of the four concept papers is received, a program of the assignments will be prepared for inclusion in the work plan deliverables.

CONCEPT PAPER 1

Survey to Determine Rural Water Needs and the Impact of Loss Reduction on Service Standards

Concept Paper 1

Survey to Determine Rural Water Needs and the Impact of Loss Reduction on Service Standards

Background

Despite enormous past and continuing investment in rural Egyptian potable water supply systems, little is known about domestic water needs in Egyptian villages. Previous projects on water use in rural communities have yielded almost no information about consumers' willingness and ability to pay for water or about the actual quantity of water needed for domestic purposes.

There are many unanswered questions about water services: Can the rural poor afford individual house connections instead of relying on public standpost supply? If piped water were unlimited would women continue to wash clothes and dishes in the canals? Is piped water used to water livestock? Would more people connect to piped supplies if the cost were spread over a longer term? What would be the effect on service standards if water losses are reduced? Is well water containing excessive iron/manganese used for drinking and washing?

Water use in some rural settlements appears to be heavily constrained by factors such as intermittent supply or location of public outlets at an impractical distance from houses. In such cases, households supplement their needs, usually by extracting water from shallow wells and canals. Women may prefer to use canals for doing laundry and dishes in some locations, even when an adequate supply of piped water is available. Even in villages with a reliable water supply, many villagers continue the tradition of storing water in containers fitted with no tap or outlet. Thus, water is drawn by dipping from the water surface, and is exposed to contamination.

Another problem with rural water supply is that losses of water from piped systems far exceed acceptable norms. Reducing such losses would make more water available to consumers without increasing the production capacity of existing source works. Until more data is available on the water demand of low-income rural consumers, however, it is not possible to develop realistic water supply design parameters or to know what impact water loss reduction will have on raising service standards.

The present emphasis on policy reforms and sustainability intensifies the need for a study that provides authorities with a better understanding of both water demand and user ability to pay for improved service. Variations in customs and water use could be identified by studying villages in different regions. In addition to providing valuable information concerning women's expectations of piped water supplies, the findings of such a study may be applicable to health education and other ongoing projects outside the scope of the LD II-P program.

Proposed Special Project

The proposed special project will examine social and technical factors affecting the water needs of low-income rural families. Specifically, the project will determine (1) the quantity of water required to satisfy the daily domestic water needs of rural families, (2) the monthly amount a family can afford to pay for piped water, and (3) the anticipated impact on service standards of reducing water losses in the villages studied.

The project is planned in two phases. The first, a study and design phase, will include preliminary work needed to define methods and staffing for the in-depth second phase of the study. This first phase is described in more detail below; the second phase will be described in a report to be completed at the end of the first phase.

Methodology

The first phase of the project will involve reviewing existing literature, developing a project action plan that includes the method of collecting field data, field testing the action plan in two pilot villages—one selected as representative of the Delta, and one selected as representative of Upper Egypt—and refining the plan for use in the main study (second) phase.

Required Resources

Short-term female social scientists will be required to develop survey formats for fieldworkers to use in the two selected villages. These specialists will cooperate with long-term technical staff, who will determine water demands and existing water service standards for each village. Water meters will be needed to check consumer consumption and measure water pump station outputs.

A total of ten person weeks are estimated for the first phase of the special project, broken down as follows:

Task	Person Weeks	
	Short-term	Long-term
Review Literature	1	-
Collect Field Data in Two Typical Villages	2	1
Design and Test Survey Formats	2	2
Prepare Report for Main Study	2	-
Total	7	3

Pressure recorders from the project office will be used to establish the numbers of hours a day water is available in the two pilot villages, and bacteriological analysis will be conducted on water samples using project office equipment. The purchase of 10 No. 50 mm and 20 No. 20 mm water meters is required to measure pump station outputs and some user demands

in the pilot villages. These meters are available on the local market and are estimated to cost LE 3,500, total.

Project Duration and Start Up

The estimated elapsed time for the first phase of the project is four weeks. This first phase should start no later than January 1991; however, the second phase should not begin until after completion of the special project determining the operational costs of supplying water (see Concept Paper 2).

Project Management

The Section Manager/Planner of the Potable Water Supply Section will be responsible for supervising the special project. He will monitor progress, quality of work, and timely completion through regular discussions with the assigned short-term specialists and long-term technical staff.

Outputs/Deliverables

At the completion of the first phase of the project, a report will be prepared on how to proceed with the main study phase. This first report will recommend the number of villages that need to be included in the second phase to obtain a cross-section of regional, cultural differences along the Nile Valley. It will also outline the methods and resources required in the second phase to determine water needs, user willingness/ability to pay for water supply, and impacts created by reduced water losses on the standard of water service.

Pertinent Literature

Nadium Assaad and Nawal Nadim, 1984, "Living without water" *Cairo Papers in Social Science.*

Oldham, Linda, 1984, "Child Maintenance in a Squatter Settlement in Cairo: Manshiet Nasser," *Population Council Regional Papers.*

Oldham, Linda, forthcoming 1990. *Sociocultural Factors of Relevance to the Incidence and Prevalence of Diarrheal Disease,* UNICEF: New York

Samiha El Katsha et al, *Women, Water and Sanitation* (including June 1990 Task Force Minutes).

Sholkaine, Honia, forthcoming 1990 (Same as El Hodidi for Assyout Governorate)

White, Gilbert F. and White, Anne U., *Potable Water For All: The Egyptian Experience with Rural Water Supply.*

CONCEPT PAPER 2

Determination of Operational Costs for Water Supply

Concept Paper 2

Determination of Operational Costs for Water Supply

Background

The LD II-P program and its forerunners have gained success in establishing a decentralization process for new capital works in rural Egypt. The GOE is now turning its attention towards decentralizing the operation of services. The future success of establishing sustainable and well-managed basic service requires communities to break away from governmental fiscal control and become autonomous units. This is particularly so for a water supply service.

Successful owner management requires the central government to delegate not only relevant responsibility, but associated powers. The provision of water is one public service that can be effectively operated under an owner-management policy. Users are accustomed to paying charges for water supply services; under the current centrally-managed financial system, however, there is little local awareness of any relationship between revenues collected and money spent for operating the water works. Also, full operating costs are never calculated in the annual O&M budgets.

Task PWS 6.2 of the current work plan proposes a pilot self-managed water system, similar to the pilot wastewater system now showing positive results in Damietta. For this program, revenues collected from water sales would be retained by the village council to cover the operating costs of the water system. In other less-developed countries, self-managed water systems have met with great success.

Prior to starting the self-managed water supply pilot, we propose establishing the true production costs of potable water systems. This includes costs of power and maintenance, as well as depreciation and replacement of capital works. Realistic user charges would be developed and any gap between true operating costs and user-generated revenues could be closed by a temporary government subsidy. Gradually, this subsidy would be reduced as the local administration lowered operating costs through water loss reduction and improved maintenance, and increased revenues through more efficient bill collection. The latter is in keeping with the recently signed decree to raise the national water surcharges from 10 to 15 percent.

Examining alternative designs of service connections could also yield tangible benefits. If costs could be reduced without compromising quality of the installation, more people might be able to afford the convenience of piped water in their homes.

Proposed Special Project

The proposed special project will outline a plan for recovering the operational costs of an independent village water supply system, and will determine the financial benefits (if any) of modifying the current layout of water service connections.

Findings of this study will also have important secondary applications. First, the true operating costs determined in this study could be compared with the amount users are willing and can afford to pay, which will be an output from the rural water needs special project (see Concept Paper 1). Second, the special study on renewable energy (Concept Paper 3), the pilot self-managed water system (work plan Task PWS 6.2), and the survey of local revenues and finances (Task LG 6.1) will benefit from the results of this project. Third, methods of improving the budget preparation and expenditure monitoring will be reviewed.

Methodology

A village would be selected from those known to have water supplied from independent wells, as this type of system is best suited for self-management. Basic data would be collected on all existing aspects of the water supply system operation, including amounts spent on consumables (electricity, diesel, oil); maintenance of plant and networks; depreciation and replacement of capital works; labor costs for operating and maintaining water works; and readings and billings for water sold. These costs will be compared with revenues collected from water sales.

Existing water tariff charges will be reviewed and compared with true cost data to ascertain changes required to balance costs and revenues. A modified tariff structure will be proposed to minimize any deficit, which will have to be covered by a government subsidy or loan.

The design and cost of service connections and the method of payment for such connections will also be reviewed. There is a strong possibility that low-income families wishing to have piped water in their home are deterred by the high cost of service connections. Many potential consumers are likely to apply for service connections if the connection cost is reduced or payable over several months through a loan scheme.

Required Resources

A short-term local financial consultant or a local consulting firm would be selected to work in conjunction with long-term professional staff. Collection and development of financial data would be done by the financial specialist, while costing of alternative service connection designs by long term staff.

An estimated 12 person weeks is needed for the study, as follows:

Task	Person Weeks	
	Short-term	Long-term
Review Egypt Water Charge Policies	1	-
Collect data	3	-
Develop alternative tariff structures	2	-
Examine methods for financing connections	2	2
Prepare Draft Report	2	-
Total	10	2

Project Duration and Start Up

The estimated elapsed time to complete this special project is 10 weeks. This time might be shortened by appointing a consulting firm instead of an individual for the assignment.

The data resulting from this special project is relevant to other special projects, the self-management pilot village task (PWS 6.2), and the survey of local revenues and finances (LG 6.1). For these projects to benefit from the results of this assignment, the study should start no later than January 1991.

Project Management

The Section Manager/Planner of the Potable Water Supply Section will be responsible for supervising the special project. He will monitor progress, quality of work and timely completion through regular discussions with the assigned short-term consultant and long-term staff.

Outcome/Deliverable

A draft report will be prepared by the short-term consultant; it will record findings and make recommendation on tariff levels. Tariff rates will be cross-checked during the special project on the needs of low-income users (see Concept Paper 1). This will provide information about how the charge rates compare with rates users are able and willing to pay.

The final report will be translated to Arabic for circulating to the governorates, where it will assist officials in preparing realistic O&M budgets in the future. The project recommendations will be disseminated to interested parties in the central government, such as NOPWASD and the Ministry of Finance, through a one-day workshop.

Pertinent Literature

Government of Egypt Laws relating to water charging policies.

O&M Planning and Budgeting Guidelines, Chemonics, June 1988.

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CONCEPT PAPER 3

Techno-Economic Feasibility of Using Renewable Energy Sources for Operating Water Supply Pumps

Concept Paper 3

Techno-Economic Feasibility of Using Renewable Energy Sources for Operating Water Supply Pumps

Background

The logistics and costs of operating rural water systems in Egypt are immense. Efforts to reduce operating costs and raise the standard of water services are already being addressed from a number of different angles. LD II provides large sums of money for the recurrent cost of AID-financed capital projects. In addition, technical assistance through the LD II program is aimed at improving the quality of new projects. As a result, new works are cheaper to operate than older works with post-construction shortcomings.

Another means of reducing costs for the water supply sector involves innovative technologies which will pave the way to the future. Of particular interest in the present climate of increasing electricity costs is the use of renewable energy for driving water supply pumps. Recent developments in wind- and sun-powered machines have led to the production of pumps that are highly reliable, and have essentially no operating costs.

Egyptian governorate policies to assess pumping technologies for water supply should consider the economic efficiency, proved technology, social suitability, and institutional support of each technology. In the final analysis, the pumping technology that satisfies current and future rural water requirements by providing the cheapest, most reliable supply of water should be the one that the Government of Egypt (GOE) supports for widespread development throughout the country.

As the GOE introduces policy reforms of gradually reducing subsidies on diesel and electricity, water costs will increase. Renewable energy sources could offer an economic solution for remote rural communities which cannot afford the expense of connecting to regional or sub-regional water supplies.

Additional benefits could be reaped from the successful development of renewable energy sources. For example, the well-developed Egyptian diesel engine and centrifugal pump industry could diversify into the manufacture of renewable energy machines for both the local and export markets. The potential market for such pumps is good, as international organizations are focusing considerable efforts to improve rural water supply systems worldwide.

The LD II-P project provides an excellent means to analyze the benefits of renewable energy sources for running water pumps. Over the last 10 years, LE 280 million has been invested by USAID in water projects for rural communities. Facilities financed include the installation of diesel and electric pump sets. Overall, any technology with potential for reducing operating cost while maintaining or bettering the existing standard of service is worth investigating.

Proposed Special Project

The proposed special project is a techno-economic study on installing and operating pumps powered by renewable energy. Consideration will be taken of both capital and recurrent operating costs of the renewable energy pump units. These figures will be compared with the cost of operating conventional units.

Depending on the outcome of this first work phase, subsequent efforts might include field trials of selected pump units. These trials would determine both the performance of the equipment and actual operating costs. Successful trials could result, over the long term, in benefits to the local manufacturing market.

Methodology

The methodology will be based on the assumption that benefits will be the same across all technologies considered, as long as the pump systems provide the same service. Thus, the analysis will concentrate on *cost* comparisons of different technological options that provide identical service.

There are several factors involved in cost comparison. One criterion is capital cost. Annual operation, maintenance, repair, and labor costs are other considerations important to communities paying for water services.

A life-cycle cost approach will be used for the economic analysis. Using this method, future operating, maintenance, and system component replacement costs are "discounted" to the present. They are then added to initial (capital) costs to arrive at a total present value which can be compared across all technologies considered. To be meaningful, the "service" provided must have the same degree of reliability for the same water demand. The best approach to compare pumping technologies for a given water demand is to design pump/storage systems using each technology, compute life-cycle costs for each pumping option, calculate a life-cycle cost per unit of water delivered for each option, and identify the least-cost option. These steps are explained below.

- *Establish water pumping applications.* A range of water pumping demands will be assumed for a typical Egyptian rural community. Later, a few case studies of specific applications using actual water demand data and current system cost data can be completed and compared with Egyptian experiences such as the work by AUC at Baasisa Village and by General Petroleum Company in Eastern Owainat.

- *Design pump/storage systems.* Commercially available equipment for each pumping technology will be used. Technologies to be considered are wind, electric, photovoltaic, diesel, and a hybrid system option that combines any or all of these. The design will assume a continuous supply is provided by storing water in a water tower. The cost of building the tower will be part of the cost analysis.

- *Compute the life-cycle costs of each pumping system* including initial capital cost of pump systems and elevated storage, annual

maintenance cost, annual fuel cost, annual labor cost, periodic replacement of parts and/or subsystems, and salvage value (if any). All future costs will be "discounted" to a present value using agreed upon economic parameters for the Egyptian environment. Intangible factors such as the effect of "time-to-repair" a pump must be included in the overall worth of a pumping technology.

- ***Compute annualized unit water costs*** by dividing the annualized present value of the system by the annual water production.
- ***Compare annualized water costs*** to identify the "least cost" option.

The establishment of the initial capital cost for each pumping technology should also consider the potential for future in-country manufacture of system components as a way to reduce the "actual" capital cost should widespread system implementation occur. These factors must be included in a broader assessment of the overall worth of a pumping technology.

Required Resources

A short-term expatriate specialist will be appointed for the assignment. This specialist must have electrical or mechanical engineering qualifications with significant experience in renewable energy development projects.

Most of the work for the first phase of this special project will be done as a desk study. However, some field visits will be introduced to ensure the specialist is fully aware of problems peculiar to Egypt. Long-term Potable Water Supply Section Staff will provide assistance in organizing field trips and accompanying the specialist during these visits.

Eleven person weeks are estimated for the assignment, as follows:

Task	Person Weeks	
	Short-term	Long-term
Literature Review	1	-
Data Collection	3	3
Cost Analysis	3	-
Report Preparation	1	-
Total	8	3

Project Duration and Start Up

The first phase of the special project involving the economic desk study is estimated to require eight working weeks. An output of this work will be recommendations on how to proceed in the future.

The special project can start as soon as a short-term consultant is appointed. Provisionally, the latest start date would be February 1991.

Project Management

The Potable Water Supply Section Manager/Planner will be responsible for monitoring progress of the special project and timely completion of the assignment. He will delegate field visits to long-term staff under his control.

Outcome/Deliverables

The primary deliverable will be a report detailing the economic study and recommending whether or not to start field trials of renewable energy pump units.

A workshop of the findings will be presented to AID, the MLA Amana, and selected secretary generals. Also the method of conducting the economic analysis would be an appropriate feasibility case study model for the Advanced Seminars.

Pertinent Literature

A Comparative Assessment of Photovoltaics, Handpumps and Diesels for Rural Water Supply, Final Report, Meridian Corporation and I.T. Power, May 1987.

Alternative Energy: The Baasisa Village (Sharqiya) experience, AUC Press, Cairo.

Alternative energy studies in Eastern Owaihat, General Petroleum Company, Egypt.

Cost-Benefit Model for Community Water Supply; Technology Choice, Robert J. Roche and Fredick W. Wright, The World Bank/UNDP, International Water and Sanitation Decade Program, Infrastructure and Urban Department, October 1987.

Economic Analysis of the EXCEL-PD 10-Kilowatt Water Pumping System in Morocco, Peter Borgo, International Development and Energy Associates, September 1989.

Learning From Success: Photovoltaic-Powered Water Pumping in Mali, Meridian Corporation and I.T. Power, U.S. Committee on Renewable Energy Commerce and Trade, February 1990.

Promoting the Commercialization of Photovoltaic and Wind Systems in Morocco, Michael Starr, I.T. Power, July 1989.

Solar Electric Applications and Preliminary Feasibility of Solar Water Pumps in Kenya, K&M Engineering and Consulting Corporation, U.S. Trade and Development Program Definitional Mission, July 1989.

Technology Assessment; Wind Electric Pump Systems, Alan Wyatt, Research Triangle Institute, June 1989.

Wind Pumping; A Handbook, Joop van Meel and Paul Smulders, World Bank Technical Paper Number 101, July 1989.

CONCEPT PAPER 4

Identification of Groundwater Wells with Excessive Iron/Manganese Content

Concept Paper 4

Identification of Groundwater Wells with Excessive Iron/Manganese Content

Background

There are various aspects to the quality of water used for human consumption. Water is a carrier of disease, hence the most important factor in drinking water quality is that it be free from any microorganism harmful to health. Deep well water can meet this criterion without any treatment. This source is available to a large percentage of the rural population in Egypt and, in the interests of public health, should always be preferred to surface water supplies.

Unfortunately, in many parts of the country groundwater contains iron and manganese at levels which exceed the Egyptian Drinking Water Standards. This can affect the aesthetic quality of water supplies. While not harmful to health, very high levels of iron and manganese impart a bitter taste in water. If there is a choice of water supplies, consumers usually prefer to drink the source which has no unpleasant taste or odor.

There is little or no documentary evidence of the extent or severity of the iron/manganese problem in drinking water in rural Egypt. The LD II project receives reports from different governorates on well water that is bacterially safe for drinking, but is condemned when levels of iron or manganese exceed the Egyptian Drinking Water Standards.

Various technologies are used to reduce iron and manganese; the success of each depends on the chemistry of the water and amount of reduction required. To assist governorates in planning and implementing new projects, we must first identify areas where groundwater contains iron/manganese in excess of the Egyptian Drinking Water Standards.

Proposed Special Project

The proposed study will determine, from a country-wide survey of all potable water wells, those areas where groundwater contains iron/manganese in excess of the Egyptian Drinking Water Standards. Each area will be categorized according to the iron and manganese content in its water. This quantification of the problem will form a basis for recommending technologies that will reduce iron and manganese to acceptable levels.

Methodology

Local staff will collect groundwater samples from all water supply well fields. These samples will be returned to Cairo for iron and manganese analysis and the results will be recorded on a database.

A team will be appointed to systematically collect samples from about 2,000 well fields throughout the country. The Northern Delta and Fayoum, where high groundwater salinity makes well water unsuitable for drinking purposes, will be excluded.

The appointed team will liaise with governorate water sector counterparts for sample collection and identity. Analysis of each sample will be conducted either by designated laboratories in Cairo or by a special laboratory in the project office.

The first phase of the project will be to collect data from Giza, Gharbiya and Menoufiya governorates, areas suspected to have high levels of iron/manganese in groundwater. Using this experience, an action plan will be developed to cover other governorates that use groundwater resources The third and last phase will involve correlating treatment methods to different ranges of iron and manganese content.

Required Resources

The first three governorates of Giza, Gharbiya and Menoufiya have about 400 well fields with an average of five wells each field. Estimated resources to collect field data are as follows:

Staffing

Short Term Local Technicians (three technicians are proposed)	75 person weeks

Services and Supplies

	LE
Transport for Field Visits	15,500
Sample Bottles	500
Laboratory fees	20,000
Total	36,000

Support Staff

Long term professional staff from the project office will be responsible for initiating the sampling program in each governorate. This will be followed by routine supervision of field teams to monitor progress, resolve problems, and coordinate laboratory analysis. The PWS/EE Data Analyst will design and maintain the database.

Project Duration and Start up

If work starts simultaneously in each of the three governorates, an elapsed period of 25 working weeks will be required to complete the data gathering and analysis for the first phase. The time for completing the second and third phases will be estimated after completing the first phase.

Project Management

The Potable Water Supply Section Manager/Planner will have overall responsibility for monitoring progress, coordinating teams, and timely completion of the work. He will delegate duties to the long term staff under his control.

Outcome/Deliverables

The primary outcome will be a database report and zonal map differentiating between ranges of iron and manganese content throughout the initial three governorates. These results will be presented to the three governorates in the form of hard copies and computer database files. A one-day workshop will be arranged to explain how to access and update the database file and how the data can be beneficially used for strategic and project planning.

A summary report will record the procedures used in the first three governorates and recommend an action plan for surveying the remaining governorates.

A secondary benefit will be a team of technicians trained in field data collection and data analysis.

Pertinent Literature

Water Supply and Sanitation, Governorate of Giza, Egypt by Associated Engineering International et al (January 1988).

Egyptian Drinking Water Standards.

Guidelines for Drinking Water Standards, WHO, 1984.

APPENDIX A

USAID Letter of 12 July 1990

UNITED STATES AGENCY for INTERNATIONAL DEVELOPMENT

CAIRO EGYPT

Office of Contract Services
106 Kasr El Aini Street
Garden City, Cairo

July 12, 1990

Mr. Ashraf Rizk, COP
Chemonics International
8 El Fawakeh street
Mohandisseen, Cairo
Egypt

Subject: Contract No. 263-0182-C-00-8041
Extension of Period of Services and SOW Revision

Dear Mr. Rizk:

This letter responds to your letter of April 17, 1990 which presented your revised Technical Proposal and Work Plan to my office. I am pleased to inform you that our Office of Local Administration and Development (LAD) has reviewed the proposal in depth and accepts it in principle, with requested changes in Attachment No.1. Therefore, I request that you provide me a revised technical proposal based on the referenced attachment and a cost proposal. After USAID review and analysis of these technical and cost proposals, I will contact you for final discussions and negotiation of a modification to the Contract.

I have attached here Standard Form 1411, Contract Pricing Proposal Cover Sheet, and a Certificate of Current Cost or Pricing Data which must be completed and submitted with your cost proposal. Please format your cost proposal by Chemonics fiscal years with columns showing actual costs to date, projected costs through September 30, 1990, and projected costs from October 1, 1990 through September 30, 1992. Local Egypt costs should be detailed in Egyptian Pounds and then converted in cost element category summaries to U.S. Dollars at projected exchange rates.

The fee for work through September 30, 1990 is currently fixed in the Contract, and additional fixed fee will be negotiated for the new period from October 1, 1990 through September 30,1992.

I have also attached sample award fee criteria and weightings for your information in proposing an award fee proposal in your cost proposal. I need to emphasize that the intent of award fee is to reward quality in delivery of services. Objective measures of performance are not normally included in award fee criteria because objective criteria related to meeting numerical targets may or may not be indicative of exceptional effort on the part of the contractor. Subjective award fee criteria, on the other hand, should result in award for good effort whether or not measurable objectives were met. I am willing to consider objective criteria in the contract award fee arrangement. But, the criteria agreed upon must be substantially subjective. Please feel free to propose any award fee arrangement keeping these concerns in mind.

Please be sure to provide with your cost proposal a detailed explanation of the basis for numerical estimates. This basis of estimates can be separate from the cost breakdown, or may be included with each cost element or subelement within the breakdown. If separated from the cost breakdown, portions of the basis of estimates should be keyed to notes placed in the cost breakdown. A clear and detailed basis of estimates will help us to negotiate the contract modification expeditiously.

Mr. Rifenbark has informed me that you have agreed to make all suggested modifications in your revised technical proposal as described in the attachment to this letter. Based on this fact, and in order to accelerate the modification process, I request that you submit the requested proposals by August 1, 1990, if possible. If you cannot meet the requested submittal date, please advise me of the estimated dates for the submission.

Thank you for your continued cooperation in this matter.

Sincerely,

Michael Nicholas
Contracting Officer

atch: 1. Modifications for the Technical Proposal and Work Plan, April 1990 through September 1992 (7 pg)
2. SF 1411 w/instructions (4 pg)
3. Sample award fee criteria (6 pg)
4. Certificate of Current Cost or Pricing Data (1 pg)

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REQUESTED REVISIONS FOR THE CHEMONICS INTERNATIONAL

TECHNICAL PROPOSAL AND WORK PLAN APRIL 1990 THROUGH SEPTEMBER 1992

PREFACE: With the submission of a revised technical proposal, please submit an attachment to it which will indicate by headings used in the revised document exactly where the changes were made to the technical proposal. In the cases where LAD has requested additional information or clarification, you may use this attachment to describe or elaborate on how the work plan addresses LAD's concerns.

I. General Comments:

A. Include in Section III those comments which were transmitted to Chemonics in LAD's letter of June 5, 1990, regarding the strategy for implementation of the LD II Provincial program. Include in the work plan specific elements of the strategy, especially private sector work plan activities.

B. Introduce the soft sectors (LG, HRD, IS, and M&E) first and describe the horizontal, quality control, and oversight functions provided by Chemonics for the LD II provincial program and the technical sectors.

C. Describe how and which section will carry out the basic subproject monitoring in provincial governorates as was done in the past by the BSDS field teams.

D. Add the following list of tables and charts to the AWP II:

1. Level of effort by advisor's title and by sector,
2. Gantt charts: 1) Schedule of the deliverables and 2) Schedule of the training courses, etc. through the period September 30, 1991,
3. A table of deliverables and training courses for the entire contract with the date of each activity.
4. A consolidated table of the project outputs for the entire contract period, i.e., September 30, 1992.

E. On page 88, for Task RD 5.2 there is a section on TA in construction supervision. Similar statements on construction supervision should be repeated in each hard sector to emphasize the importance of TA follow up. Alternatively,

VI. Specific Comments on Environmental Engineering Section (EE)

A. Any activities related to solid waste management that are proposed will require a special approval before they are initiated by Chemonics. For example, solid waste sector activities are being investigated by Wilbur Smith and LD II/Urban, so any effort here must be coordinated.

B. Delete the title "wastewater master planning" and substitute in its place "strategic sector assessment and planning/water and wastewater needs assessment until the year 2010". Make this addition and cross reference in the Potable Water Section. In addition, put emphasis on the development of a manual of generic guidelines which are user friendly, that will assist any governorate draft terms of reference for strategic sector assessment and planning for water and wastewater in their governorate. A prerequisite for the strategic planning in Damietta must be a written commitment of the Governorate of Damietta to assign staff from the appropriate department to work on a full time basis in developing the strategic plan. Without this commitment this activity cannot proceed.

C. Include the following training courses:
   1. Traveling workshop for treatment plant operation,
   2. Grand tour of wastewater facilities, and
   3. Training of treatment plant operators for the South Sinai and other sites as needed

D. Include as an activity the preparation and submission of a comprehensive statement of work for the technical evaluation of the the six wastewater technologies plus organizational, and other factors. Use Dr. Ahmed's notes, which have been reviewed by Eng Raslan, the report ENV-R-4(E) and ANE's guidelines for the organization of project evaluations. The timing for this activity has to be by October, 1990.

E. On page 38, delete the second through fourth paragraph since this is not the definition of the section.

F. Beginning on page 38, "Sector Strategy" and Task EE 6.2 page 74, insert a section which will commit Chemonics to intensive TA effort in assisting the village and/or service contractor to operate the existing wastewater plants and those that will start up during the period of this contract. See my letter of May 31, 1990 for a more complete description of this intensive TA effort.

G. Include an activity that will develop an effluent testing program for efficient operation of the treatment plants and for compliance with Law 48. Follow this theme through the other sections as appropriate.

construction supervision could be stated as a generic task for each sector.

F. Include as an annex to the AWP II a section that contains the Terms of Reference for all long-term advisors.

G. Include in the curriculum for the training of governorate engineers and construction contractors, subject matter on the practical, legal aspects of construction contract management and other procedures for private sector contract management.

H. Some thought needs to be given regarding manuals produced for construction supervision in each of the hard sectors. Would it be more appropriate to have a group of manuals for each of the following subjects: civil works, electro-mechanical, and roads which are generic and not specific for each sector?

I. Each section should have in its table of deliverables, a report which formally identifies each section's performance indicators and the baseline upon which the progress of the sector will be evaluated.

J. To more adequately address LAD's concerns for reporting requirements, describe how you will assist governorates develop systems which will fulfill reporting requirements per PIL 5A, the covenant in the Grant Agreement for cash management reporting, and equipment utilization reports per applicable AID regulations and specific audit recommendations on LD II, BVS, and DSF.

K. Based on previous USAID-Chemonics discussions, there needs to be a survey of the LD II Provincial block grant projects financed to date to determine to what extent these funds are insufficient to have the projects operational. There should be a special report on the findings and conclusions by October, 1990. It is important that these projects be accurately tracked in the QPR.

II. Specific Comments on the Local Government Section (LG)

A. This section was innovative in its approach to the many problems and issues faced by local governments. It appears that LG will be active up through the subproject plan review and the Advance Seminars, however which sector will monitor the completion and operations of the subprojects? The "How" will need to be spelled out.

B. A date needs to be supplied to the deliverables under Task LG 6.2.

C. Based on our conversations regarding the AWP, the Local Government section will be responsible for the production of the Monthly Field Trip Report and the Monthly Field Trip Schedule.

III. Specific Comments on the Monitoring and Evaluation Section (M&E)

A. There are really three basic users of MISs which need to be developed for the provincial component: 1) LAD to monitor contractor and an overview of Provincial program performance, 2) contractor to gauge internal performance, and 3) the most important, is for the 22 provincial governorates of Egypt, to monitor their subproject at each phase and further their institutional development. These different requirements need to be described in M&E or in Section III as appropriate.

B. The outputs on page 61a for tasks 2, and 3 are really specific for the Information System, not the M&E; please redefine the outputs to conform to the intent of this section.

C. Since many of the deliverables are broad studies and specific case studies, how will the preliminary findings of these analyses be used to redirect project, contractor, and/or subproject activities as if they were a part of a formative evaluation process? This can be stated in Section III or in M & E as appropriate.

D. Based on our conversations, it is understood that the Quarterly Progress Report (QPR) preparation will be assisted and monitord by the M&E section.

E. One of the outputs that LAD requires from the M&E section is an operational QPR in all 22 governorates. The reporting system should, to the extent possible, fit in with the GOE's reporting requirements placed on each governorate by the central government. The spin offs of the QPR, cash management, and PIL 5A reporting requirements per LD II is the basis of a boarder management information system.

Secondly, as we have discussed, the analysis of the QPR information at the (three) user levels is critical. The integration of data from the governorates, the analysis and follow-up, the recommendations for programmatic direction is at an important juncture. At this point the GOE has yet to integrate the QPR data and carry out the analyses adequately. Therefore and until such time as this capability is developed, support for data integration, analysis and follow up recommendations should be planned in the AWP II and specified as a discrete task on a quarterly schedule.

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IV. Specific Comments on the Information Systems Section (IS)

A. On page 107, change the title of Section 6 from Operations and Maintenance to Service Delivery and Management.

B. Include the MIS study tour to Morocco and Tunisia as a part of the IS activities.

C. Task 2.0, GIS is not listed as a specific output in the table on page 55a even though it is identified as an output at the bottom of the page 103.

V. Specific Comments on the Human Resources Development Section (HRD)

A. There seems to be a focus in the HRD sector which is toward the development of the Chemonics training program rather than simply a transfer to the local governorate units private sector and local training institutions. The whole section needs to be refocused to outputs that will also enhance future GOE training and manpower development because of HRD's efforts to produce quality training materials.

B. At this time, please retain the section HRD 3 regarding activities at Saqqara (start up and Chemonics sponsored courses at Saqqara).

C. When will the first Semiannual Report on training costs be submitted? This needs to be scheduled as a deliverable.

D. On page 99, the recipients of Task 1.2 are the governorates and not the HRD; the product of the Task should be the Governorate Sector Master Plan.

E. There needs to be a complementary activity to Tasks 2.1 and 2.2 which would focus on the transfer of a specific training course(s) for relevant private sector, autonomous and governorate entities.

F. There needs to be a section which conceptualizes the need to create sustainable service delivery through manpower development and the economic issues that revolve around a trained labor source.

G. On page 51, five lines from the bottom, "HRD" should be replaced by "training".

H. On activity EE 4, page 72, develop a plan for contractors which aims to improve the quality of contractor performance. Also on EE 4.2 insert in the training of governorate engineers the practical legal aspects of contract management.

I. All of the special studies proposed in Section EE 7.1. will require specific proposals that will be submitted to LAD for approval before they are started.

VII. Specific Comments on Potable Water Section (PWS)

A. Add to Section 1.0 a "potable water strategic assessment/water and wastewater needs assessment until the year 2010" and planning activity to the tasks. Cross reference it with the same section in the EEG sector.

B. All of the special studies proposed in Section PWS 7.1. will require specific proposals that will be submitted to LAD for approval before they are started.

C. On page 77, include a review of all potable water master plans which are currently not in use by the various governorates, work with the governorate counterparts in the review of the plans, and attempt through TA and training to activate these planning documents.

D. On the next to the last line of page 82, a "potable water data base" is mentioned. Please describe the base and how it will be used. Please add the word "water" at the end of the fifth line of Task PWS 6.1.

G. Under Section 7.1 insert the continuation of the study of the four villages to include water leak detection and a cost recovery analysis of the four systems. This constitutes LAD's approval to initiate this special study immediately.

VIII. Specific Comments on Roads

A. In section RD 7, please develop a plan which will demonstrate the value added and the longevity of a well maintained road. This could be a pilot or a case study which could be used to enhance the RPIS and the Advanced Seminars.

C. Various changes in the deliverable tables have been passed to LAD which need to be incorporated into the final AWP II.

IX. Specific Comments on the Rolling Stock Section (RS)

A. The DSF equipment delivered early in the program is nearing the end of its useful life. This should be a matter for discussion and planning to get the governorates to think about their replacement via sinking funds, equipment accounts, etc. On the other hand, it may be more feasible for the GOE to utilize private sector contracts to provide equipment. Again a topic for future analysis and discussion.

B. Develop a plan to assess the sustainability of the pilot O & M activities in Minia and Gharbia. In addition, propose future steps to replicate this pilot activity in other governorates if appropriate.

C. An evaluation needs to be done for the spare parts control system after it is installed in the three governorates before it is replicated in the remaining governorates, see section C.3..5.1. of the RFP.

D. In RS 1.3 case studies are mentioned as a report: case studies are fine as long as the intensive TA has increased the utilization rate of the equipment. The emphasis needs to be on improving the utilization of rolling stock in a governorate and replicating the tried methodology in other governorates.

D. The term inventory control system needs to be defined.

E. When will the CARDEX spare parts control system be installed in all governorates? Note the prior Modification language. What additional effort will be needed to make it sustainable? See comment above on the evaluation of the system.

X. Specific Comments on the Building Section (BD)

A. In the second paragraph of page 37 it is mentioned that "At the end of the project, the Section will deliver the foundations for a BD training program to be continued by a local entity." The deliverable date is too late to be of value, please reschedule the date and/or activity to be effective.

B. We need to have an updated copy of the scheduling of training courses for BD.

C. Task BD 2 on page 64, there is a typo in the year, the activity begins in 1992.

D. Task BD 7.2, O & M Facility Study could be renamed to indicate a more proactive approach, i.e., Guidelines.

E. Many of the reports and guidelines in tasks 1, 4, 5, and 6 lack delivery dates.

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APPENDIX B

Approval of Short-Term Water Engineer

REC'D CS

FINANCED BY U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

مصدر التمويل : الوكالة الامريكية للتنمية الدولية

16 SEP 1990

CHEMONICS INTERNATIONAL CONSULTING DIVISION
LOCAL DEVELOPMENT II PROVINCIAL PROJECT

CHEMONICS-USAID MEMORANDUM

Date: 12 Sept. 1990
File: 015/561/189

TO: Mr. John Rifenbark, Chief, RD/LAD
Mr. Michael Nicholas, Contracting Officer

FROM: Leo A. Pastore, Acting Chief of party

SUB: Approval of Short-Term Water Engineer
Contract No. 236-0182-C-00-8041-00

I attache for your approval the biodata sheet, CV, and TOR for a candidate who has been interviewed by the Wastewater Section as potential short term engineer.

- Dr. El Sayed Abdalla 20 days at LE 70 per day.

Dr. Abdalla will be involved in developing engineering specifications for the construction of water network systems and elevated water storage tanks.

The contract for extension to Sept. 1992 is currently in the final stages of negotiation. Therefore, we are seeking approval beyond the September 30, 1990 date.

Approval:

John Rifenbark,
Chief, RD/LAD

Date: 9 / 12 / 90

Michael Nicholas,
Contracting Officer

Date: 9 / 11 / 90

Chemonics / 8 El Fawakeh Street / Mohandiseen, Cairo / Tel.: 3602545, 3482247 / Fax: 718988 / Telex: 93037

٨ شارع الفواكه / مهندسين ، القاهرة / تليفون : ٣٤٨٢٢٤٧ ، ٣٦٠٢٥٤٥ / فاكس : ٧١٨٩٨٨ / تلكس : ٩٣٠٣٧

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UNIT APPROVED
OMB No. 24-R0160

CONTRACTOR EMPLOYEE BIOGRAPHICAL DATA SHEET

(SEE PRIVACY ACT STATEMENT ON REVERSE)

INSTRUCTIONS: Submit in triplicate to contracting officer. See reverse for Contractor Certification.

Name (Last, First, Middle) ☐ Mr. ☐ Mrs. ☐ Miss ☐ Ms. ABDALLA ELSAYED SAAD	2. Contractor's Name: Chemonics International Consulting Division
Address (include ZIP Code) [redacted]	4. Contract No. 263-0182 / 5. Position Under Contract: Short Term Water Engineer
	6. Proposed Salary: L.E. 70/Day / 7. Country of Assignment: Cairo, Egypt / 8. Duration of Assignment: 20 Days
[redacted] 10. Marital Status ☐ Married ☐ Single ☐ Other (specify)	11. Names and Ages of Dependents to Accompany Individual (if applicable)
[redacted]	
Citizenship (if non-U.S. citizen, give visa status) EGYPTIAN	

15. EDUCATION *(include all secondary, business college or university training)*

NAME AND LOCATION OF INSTITUTION	MAJOR SUBJECTS	Credits Completed: Semester Hours	Quarter Hours	Type of Degree	Date of Degree
AIN SHAMS UNIV. CAIRO	SANITARY ENG.			M.SC.	1988
AIN SHAMS UNIV. CAIRO	SURVEYING			DIPL.	1977
AIN SHAMS UNIV. CIARO	CIVIL ENG.			B.SC.	1972
SLAHDAR SERANDORG SCH. CAIRO	GENERAL				1967

16. EMPLOYMENT HISTORY

Give last three (3) years. Continue on reverse to list all employment related to duties of proposed assignment.
Salary definition - basic periodic payment for services rendered.
Exclude bonuses, profit-sharing arrangements, commissions, consultant fees, extra or overtime work payments, overseas differential, or quarters, cost of living or dependent education allowances.

POSITION TITLE	EMPLOYER'S NAME AND ADDRESS	Dates of Employment (Mo., Yr.) From	To	Salary Dollars	Per
SAN. DESIGN ENG	NAT. HOUSING AUTHORITY KUWAIT	2/85	NOW	4500	
DSN. DESIGN ENG	AAW CONSULTING FIRM, CAIRO	6/80	2/85	800-1000	

17. SPECIFIC CONSULTANT SERVICES *(give last three (3) years)*

SERVICE PERFORMED	EMPLOYER'S NAME AND ADDRESS	Dates of Employment (Mo., Day) From	To	DAILY RATE

18. LANGUAGE PROFICIENCY

LANGUAGE	Speaking Fair	Good	Excl.	Reading Fair	Good	Excl.	Writing Fair	Good	Excl.	Understanding Fair	Good	Excl.
ARABIC			✓			✓			✓			✓
ENGLISH	✓				✓			✓			✓	

19. Special Qualifications *(honors, professional societies, special licenses, publications, research, special skills and relevant education not previously mentioned: use reverse side of form, if necessary)*

CERTIFICATION: To the best of my knowledge, the above facts as stated are true and correct.

CHEMONICS INTERNATIONAL CONSULTING DIVISION

LOCAL DEVELOPMENT II/P

SCOPE OF WORK

01. Review the NOPWASD specifications.

02. Review the tender documents in use at the governorates of Giza and Daqahliya.

03. Prepare revised documents which could be used by the Markaz and governorate engineers.

04. Discuss his proposal with the Chemonics water department before producing the final document.

05. Specifications of water / network pipe laying

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CURRICULUM VITAE

ENG. ELSAYED SAAD MOHAMED ABDALLA

1. PERSONAL DATA

NAME:	ElSayed Saad Mohamed Abdalla
DATE OF BIRTH:	[redacted]
PLACE of BIRTH:	
SEX:	Male
NATIONALITY:	Egyptian
STATUS:	Married
NO. OF CHILDREN:	2
PERMANENT ADDRESS:	#56 Mohd. Farid Abo Hadid Str. 76th zone, Nasr City, Cairo, Egypt.
CORRESPONDENCE ADDRESS:	#14 Magdy Youssef St., Abdel Moniem Riyad Post Office, Heliopolis/Cairo.
ACADEMIC QUALIFICATION:	B.SC (1972), Diploma (1977), M.SC (1988), (Civil Engineer).
OCCUPATION STATUS:	Infrastructure Design Eng.
PLACE OF WORK:	National Housing Authority, Kuwait
WORKING LANGUAGES:	Arabic, English
SPECIALITY:	Sanitary Eng. (Networks).

2. QUALIFICATIONS:

DEGREE	UNIV.	FACULTY	FIELD
M.SC	EIN SAHMS	ENG.	SANITARY
DIPL.	"	"	SURVEYING
B.SC	"	"	CIVIL

3. PROFESSIONAL ORGANIZTION:

Membership in Egyptian Society of Engineers.

4. PROFESSIONAL EXPERIENCE:

FROM	TO	
2/85	now	Infrastructure Design Eng. in National Housing Authority, Kuwait. (JAHRA, SOUTH ARABIA, ELQURAIN, SABAH EL SALAM and UMM EL HAIMAN PROJ.)
6/80	2/85	Head of one of designing teams in AAW Consultant firm for design and preparing of tender documents of water supply network and sewerage system for (Khamis Meshut, OLA, ABOUIQ, RAHIMA, KHAFGI, HAFER EL BATEN AND NAJRAN CITY in Saudi Arabia) and for *Ben Ghazy, Western and Eastern districts in Libya).
7/77	6/80	Construction Eng. for constructing a milittary city in Anshas, Egypt.
9/75	7/77	A demonstrator in Reyadh Univ. in Saudi Arabia.
10/72	9/75	San. design Eng. in Consultant Office for design of San. and storm water.

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