

CANAL CITIES WATER AND WASTEWATER: PHASE II INSTITUTIONAL SUPPORT PROJECT (CCII)

Interim Evaluation Final Report

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EXECUTIVE SUMMARY

The Canal Cities Water And Wastewater - Phase II Institutional Support Project (CCII) #263-0174 was a direct outgrowth of:

- ▶ the phased construction and technical assistance (TA) projects of Canal Cities Water and Sewerage Project, obligated in 1978;
- ▶ the 1984 Memorandum of Understanding between USAID and the Government of Egypt (GOE) which conditioned further funding of capital projects in the water/wastewater (w/ww) sector on progress achieved in institutional reform.

Phase I construction provided major water system and urgently needed urban wastewater collection and pumping system capital improvements in the 3 Suez Canal cities of Suez, Ismailia, and Port Said. Phase II construction is ongoing, and is providing new wastewater treatment plants (WWTPs) for each of the cities, as well as improvements to the Sweetwater Canal to Port Said. Remaining major capital improvement needs in the collection and pumping systems have yet to be satisfied.

The purpose of the CCII project is to strengthen the institutional capacities in support of the wastewater departments (WWDs) in the 3 cities and the Suez Canal Authority (SCA) to improve the operation and maintenance (O&M) of the physical facilities installed under Phases I and II. The Project objectives are:

- ▶ attainment of financial viability;
- ▶ achievement of organizational effectiveness (autonomy);
- ▶ improvement in service delivery capability; and
- ▶ assure availability of competent manpower.

The CCII contract was awarded to Metcalf & Eddy International, Inc. (M&E), and work began in June 1991. The original contract scope of work described 10 tasks through which M&E was to provide TA. USAID envisioned implementation of these tasks within autonomous w/ww utilities; either one utility in each city, or a regional utility.

The purpose of this interim evaluation is to:

- ▶ examine the effectiveness of the CCII project institutional support activities;
- ▶ evaluate the project impact on institutional improvements within the SCA and the 3 canal cities;
- ▶ recommend any other actions that may be taken by USAID and the GOE to achieve project goals and objectives; and
- ▶ measure progress toward attainment of project outputs.

Institutional development TA in small governorates in Egypt is unique in its imperative to work within many bureaucratic constraints and provide significant improvements, mainly through management empowerment to achieve noticeable progress. The initially poor state of sector management and data found in governorates required years of effort to locate and analyze sector-related data, develop suggested systems for management, propose new institutional arrangements, and engage the clients in

every step of the development process to assure their understanding and concurrence, while developing a new sense of empowerment. In other words, the Project had to change re-active management systems to proactive ones. While it is true that few tasks have been implemented to completion, all have made significant progress, and the clients have enthusiastically endorsed the approaches developed by M&E. Key Project accomplishments include:

- ▶ Establishment and effective use of a Steering Committee as a basis for building strategic planning and management. It has fostered cooperation among the SCA and the WWDs/governorates, continues to work on autonomous utility alternatives, and has facilitated the drafting and negotiating of contracts by the cities for the O&M of the WWTPs by the SCA.
- ▶ Assured empowerment of governorates/cities in their ownership responsibilities of the WWTPs through detailed TA during O&M contracting negotiations, compatibility of processes and management and staffing positions with the WWDs', and the Project's promotion and the SCA's hiring of WWD employees in the O&M of the Ataka pump station adjacent to the Suez WWTP.
- ▶ Designed and prepared a "tariff model," using the cost-of-service approach, which can be used by management to identify and prioritize cost-saving actions.
- ▶ In July 1995, the SCA established separate Water Accounting units to be the focus of major revenue enhancement interventions in metering/billing/collection, financial planning, and tariff setting.
- ▶ Development of hydraulic models for the water systems, which will greatly improve cost-effective O&M decision-making. A successful water conservation education program, plus Project-induced interest in developing cross-connection control, lead elimination, and source protection programs at the SCA will also provide operational improvements.
- ▶ All stores have been organized, and inventory control systems developed that incorporate materials management capability, which is compatible with the overall maintenance management system.
- ▶ Training-of-trainers programs were successfully completed, and O&M training classes are ongoing and are well-received in all client units.
- ▶ Organizational restructuring is ongoing, with clients self-defining Project goals through its development.

In September 1994, USAID, recognizing the difficulties of implementing the original scope of work designed for centralized management to 7 distinct management units, agreed to a modification in the scope to be accomplished by June 1996. The major change was a new emphasis on completion of a "model" WWD and SCA unit in Suez that could be "replicated" after Project completion in Ismailia and Port Said. Management and task Implementation Teams have been introduced by M&E, in part, to help facilitate transfer of knowledge from Suez to Ismailia and Port Said. But one cannot expect complete and competent "replication" of the Suez model without direct M&E guidance in the practical application and coordination of sophisticated management tools. These tools must also be fully practiced and

understood in order to assure their optimal use in developing clear and convincing presentations for long-term Bab2 Ministry of Finance funding for O&M. It is therefore recommended that USAID strongly consider a Project extension to fully complete the application of highly anticipated benefits of the Project efforts directly to Ismailia and Port Said. Activities during the extended period could include:

- ▶ Attainment of official status for the role of the Steering Committee and/or an organizational alternative to facilitate strategic objectives, increase utility independence/self-sufficiency, and/or agglomeration of the utilities.
- ▶ WWTP contract development and institutional coordination with the DBC in Port Said.
- ▶ Implement tariff model in Ismailia and Port Said to its full potential as a cost-saving and revenue-enhancing management tool.
- ▶ Provide TA and follow-up assistance to the SCA in the development and operation of cross-connection control, lead elimination, and source protection programs.
- ▶ Add materials management and maintenance management applications to the inventory control system so that a Work Order system can be applied, allowing for truly pro-active management that is most efficient in maintaining positive performance of the physical systems.
- ▶ Complete organizational restructuring in Ismailia and Port Said, including planning section development to assure use of limited resources for highest priority needs.

Other optional activities that could be carried out during an extension which would assist the attainment of Project objectives include: (1) establishment of performance measures or targets for each task with follow-up management decision-making toward achievement of these targets, (2) customer information and billing system development and application for the SCA that is free-standing from the present mainframe computer, which will not only improve customer service, but will help prepare customers for higher tariffs, (3) oversee an annual planning cycle for O&M training and set up a training organization within the WWDs, and (4) follow-through on management training needs that are presently being assessed.

The body of this interim evaluation report presents assessments of overall constraints to achieving Project objectives. Chapter 3 discusses policy issues, Chapters 4 and 5 describe constraints to the implementation of work plans recommended to achieve Project objectives, Chapter 6 presents sustainability issues, and Chapter 7 evaluates the training programs. Specific recommendations for USAID and GOE consideration are presented after the Major Conclusions section that follows (highest priority recommendations), and are continued in Chapter 9.

In summary, CCII project progress has been constrained by many factors, from the laborious nature of institutional development implementation within the GOE environment, to the application of a detailed scope of work that implied centralized management to 7 client management units. Even under ideal circumstances, institutional development projects focusing on an entire sector to serve significant

municipalities should be designed with adequate time to not only develop and practice new systems, but for follow-up activities under contractor supervision to assure optimal use of the powerful new systems. The many innovative approaches developed by M&E, that are finally appreciated and anticipated by the clients, can best be brought to full reality by continuing the present momentum so that Project objectives can be achieved in the most timely fashion for the protection of USAID's infrastructure investment.

One final note: It is generally acknowledged that the SCA is the best managed and funded authority in the w/ww sector in Egypt. After several years of working with M&E, the SCA has embraced the many sophisticated efficiency improvements presently being developed under the Project for their use. Given their organizational advantages, the implementation and institutionalization of these improvements should be accomplished more effectively than would be the case in any governorate or new authority. It, therefore, behooves USAID to complete the "full package" of M&E/SCA agreed interventions to most effectively demonstrate these efficiency tools to the rest of Egypt.

MAJOR CONCLUSIONS

The CCII project was designed to provide institutional strengthening to the WWDs in the 3 canal cities and the SCA to improve the O&M of the physical facilities installed under the Canal Cities Water and Sewerage Project - Phases I & II. Project objectives include: (1) attainment of financial viability, (2) achievement of organizational effectiveness, (3) improvement in service delivery capability, and (4) availability of competent manpower.

Three conditions largely dictated project progress: (1) the obvious need to continue water systems management under good SCA management, (2) SCA refusal to consider a major role as manager of the w/ww systems for the cities due largely to the dilapidated condition of much of the ww collection and pumping systems, and (3) the expanding level of effort needed to provide the 3 city WWDs necessary institutional development improvements.

All 4 project objectives would be best served under SCA management. The success of the Project in involving the SCA in the ww subsector in the canal cities as WWTP O&M contractor, as well as through cooperative relations with WWD staffs in Implementation Teams, was not only a major breakthrough in protecting USAID's investment in Phase II ww physical plants, but has "opened the door" to future involvement of the SCA in the ww subsector as a whole. M&E continues to vigorously pursue discussions within the Steering Committee to its logical conclusion -- the acceptance of the well-managed and well-funded SCA to eventually consider taking over the management and O&M of the entire w/ww cycle on behalf of the cities.

In the meantime, M&E implemented all Project tasks to a myriad of client units. Each unit has been assisted in each task using systems that are able to be integrated to provide for smooth transition of personnel and systems for eventual merger under combined management. However, overall progress was slow due mainly to 2 factors: (1) the time and effort expended during the early years of the Project to gain acceptance by the SCA as a ww subsector contractor, and the provision of TA to the cities in the development of the O&M contract, and (2) the expanding level of effort needed to provide 3 cities necessary institutional development improvements.

Nonetheless, all project objectives have been substantially addressed, with attainment of goals now in clearer sight.

Financial viability

Major achievements:

- ▶ Identification and segregation of costs-of-service financial data for use by utility management in all client units;
- ▶ Identification of significant cost-savings interventions to improve O&M management through maintenance management programs, leak detection, and overall utility management and administrative efficiencies;
- ▶ The SCA set up separate Water Accounting units in each city which will work under a M&E plan to execute metering, billing, and collection improvements.
- ▶ Determination that the 50% ww surcharge on local water bills (a condition to Project funding) is sufficient to cover present O&M costs of ww collection and pumping;
- ▶ Significant additional revenues identified that can be collected through Project improvements being implemented in metering, billing, and collection systems.

Major constraints:

- ▶ Present lack of GOE commitment to pay for long-term capital improvement needs, whether through local tariffs or GOE subsidies.
- ▶ The present poor physical condition of the ww collection and pumping systems will continue to cause excessive inefficiencies for the entire ww system;

Suggested solutions:

- ▶ USAID has decided to use remaining obligated Canal Cities Water and Sewerage Project funds to improve the condition of the ww collection and pumping systems;
- ▶ Continue Project efforts through the Steering Committee to create a regionally responsive utility authority/authorities (long-term capital improvement funding could be best addressed under overall SCA management);
- ▶ Continue Project-developed cost-saving and revenue-generating TA.

Organizational effectiveness

Major achievements:

- ▶ Governorate contracting of new WWTP O&M to the SCA;
- ▶ Segregation of w/ww-related information/functions from other departments for use by w/ww utility management;
- ▶ Ongoing comprehensive organizational restructuring.

Major constraints:

- ▶ SCA's continued reluctance to accept overall w/ww sector management responsibility;
- ▶ Limitations to the degree of organizational effectiveness attainable within the governorate bureaucracy (WWDs).

Suggested solutions:

- ▶ Continue Project efforts to establish a regionally responsive utility authority/authorities;
- ▶ Improve internal management systems of the WWDs.

Service delivery

Major achievements:

- ▶ Improved O&M capabilities from Project-assisted training efforts demonstrated in all utility units;
- ▶ Successful public information campaign in water conservation;
- ▶ Improved stores/inventory management systems in all utility units;
- ▶ EEAA approval of interim effluent water quality standards for the Suez WWTP.

Major constraints:

- ▶ Lack of outside TA to the WWDs for the technical O&M problems plaguing the ww collection and pumping systems;
- ▶ Present lack of funding sources for long-term capital improvements and full funding of O&M needs for the ww collection and pumping systems.

Suggested solutions:

- ▶ Completion of practical applications of management tools developed by the Project for improved operational efficiency and for future needs assessments and funding presentations;
- ▶ Additional Project emphasis on developing governorate capabilities to contract out high priority TA.

Competent manpower

Major achievements:

- ▶ Completed O&M training-of-trainer (ToT) training, and training classes are ongoing for all operators (except water networks, which will begin shortly);
- ▶ Competent manpower assured for O&M of new WWTPs through SCA contracting.

Major constraints:

- ▶ Manpower availability to satisfy all job descriptions as developed in the Project's organizational restructuring task;
- ▶ Need for sustainable management training;
- ▶ Need to institutionalize basic ww training;
- ▶ Without autonomy, the WWDs are restricted by governorate personnel regulations.

Suggested solutions:

- ▶ Development of a regional operator certification program, in lieu of further development of NOPWASD's national program;
- ▶ Project assistance in institutionalizing basic ww training, and in resolving the need for local management training;
- ▶ Continue efforts to gain autonomy for the WWDs.

It is evident that several common elements exist which must be addressed to provide optimum achievement of the Project objectives: (1) continued efforts to attain utility autonomy, (2) continued implementation and expansion of Project initiatives, (3) solving the present capital improvement needs of the ww collection and pumping systems, and (4) solving the long-term funding needs for capital improvements.

The capital improvement needs of the ww collection and pumping systems are presently being assessed by the Phase II contractors. USAID will use remaining obligated Canal Cities Water and Sewerage

Project funds to provide the priority capital improvement needs. Not only will it improve operations of all 3 ww systems, providing considerable long-term cost and manpower savings, but it may also provide the solution to the last remaining objection of the SCA toward their acceptance of the formation of a utility that incorporates the region's w/ww management under their autonomy.

Cost-savings and revenue-generating improvements to be implemented through management use of financial information from the completed tariff model and elsewhere, operational improvements, organizational efficiencies, and metering/billing/collection improvements through the newly approved SCA Water Accounting units have the potential to significantly reduce the dependence on GOE subsidies. Longer-term capital improvement needs may partially be addressed through M&E plans to suggest utility development of capital investment accounts funded by developer payments for capital expansion. Otherwise, additional GOE support will be needed.

The remaining 2 "common elements" above demand the continuation of efforts begun by the Project. While Project progress has been difficult to appreciate due to the lack of completion of significant tasks, the nature of institutional development in such a complicated setting demands laborious TA efforts to get through the preliminary sequential steps (see Annex) of each task. M&E has carefully cultivated client development and acceptance of innovative and comprehensive approaches that would largely fulfill all project objectives. It is imperative that they be granted sufficient time to fully implement the remaining sequential steps in all 3 cities.

Finally, an often overlooked element in the long-term success of institutional development projects is the "institutionalization" of project interventions. Subtasks must be added to each intervention to address the inevitable need to pass on knowledge gained through Project TA and development to the "next generations" of managers. This should include the development of specific contract formats and specifications to engage future TA that may be needed beyond the specific job descriptions of institutional staffs.

MAJOR RECOMMENDATIONS

The following is a list of the major viable recommendations from this evaluation. It is presented in priority order, with responsible parties in all caps preceding each recommendation. Other recommendations are presented in Chapter 9 of the body of the report.

1. **USAID:** In order to attain Project objectives and to provide the bulk of promised TA to the cities of Ismailia and Port Said, the Project should be extended. The scope of work for the extension should be negotiated in several months after a review of implementation progress in Suez, but before demobilization begins.
2. **M&E:** Establish improved communication with client units in Ismailia and Port Said during Suez institutional "model" development. Incorporate the following improvements:
 - ▶ Produce and disseminate frequent (say, bi-weekly) "implementation bulletins" to managers which outline all work plan activities assigned, deadline reminders, scheduled M&E staff visits with agendas, scheduled Implementation Team and other meetings, a "lessons learned" page that presents Suez model accomplishments that may inspire

applications in their units, etc.

- ▶ Immediately provide initial management training (especially for the WWDs) in line management techniques, especially geared toward the dissemination of implementation bulletin information and follow-up, to appropriate task leaders.
 - ▶ Assign staff to visit all Ismailia and Port Said primary managers at least bi-weekly.
3. **M&E**: Accelerate Project focus on SCA development of an operator certification system for the w/ww sector, using the basic model developed by the WWISP project in Beheira Governorate.
 4. **M&E**: To improve service delivery and to protect facilities investments, use TDY expertise to assist all clients on prioritized problems in the physical infrastructure. Also, educate clients on the use of NOPWASD/MHPU provisions for procuring foreign spare parts.
 5. **MHPU**: Assure clients that in the event of Project termination prior to achievement of autonomy, the Steering Committee will be given official status as an acting "board of directors" to continue pursuit of autonomy, and retain regional focus and strategic planning functions for the clients.

لتطوير وتطبيق الانظمة الجديدة فحسب بل تكفي ايضا لمتابعة الانشطة تحت اشراف المقاول لضمان تحقيق الاستخدام الافضل والاستفادة المثلي من الانظمة الجديدة الفعالة . والاساليب المستحدثة الكثيرة التي اعدتها مكتب ميتكالف آند ادى الدولية والتي لاقت استحسان صاحب العمل ويتوقع تنفيذها سيتم تحويلها الي واقع بمواصلة الجهود والتحركات الحالية لكي تتحقق اهداف المشروع ، في اُنسب فترة زمنية ، لحماية الاعتمادات المالية التي استثمرتها الادارة الامريكية للتنمية الدولية في اعال البنية الاساسية .

ملحوظة اخيرة : من المعروف عموما ان هيئة قناة السويس هي افضل هيئة من حيث الادارة والتمويل ، وبعد سنوات عديدة من العمل مع مكتب ميتكالف آند ادى الدولية تطبق الهيئة الانظمة المتطورة الكثيرة لتحسين الكفاءة والتي يجرى اعدادها حاليا ضمن المشروع لغرض استخدامها بواسطة الهيئة . وفي ظل المزايا التنظيمية المتاحة لهيئة قناة السويس ستكون الهيئة قادرة علي تطبيق وتنظيم استخدام هذه التحسينات بكفاءة اكبر كثيرا عن حالة اية محافظة او هيئة جديدة ، ويستوجب هذا من الادارة الامريكية للتنمية الدولية ان تكمل وتتم "العرض الكامل" المتفق عليه لاجراءات تدخل مكتب ميتكالف آند ادى الدولية /هيئة قناة السويس لتصور وتثبت هذه الادوات الخاصة بتحسين الكفاءة ، لبقية محافظات مصر .

وفيما يلي بعض الأنشطة الاختيارية الأخرى التي يمكن تنفيذها خلال فترة امتداد المشروع والتي ستساعد في تحقيق أهداف المشروع: (١) وضع أهداف ومؤقتات أداء كل واحدة من المهام مع متابعة إدارة اتخاذ القرارات تجاه تحقيق هذه الأهداف. (٢) تجهيز وتطبيق نظام في هيئة قناة السويس بخصوص بيانات ومحاسبة العميل بحيث يكون مستقلا عن شبكة الكمبيوتر الأساسية الموجودة حاليا ولن يساعد ذلك علي تحسين الخدمة المقدمة للعميل فحسب بل سيساعد أيضا علي تهيئة العميل لتقبل التعريفات العالية. (٣) مراقبة دورة سنوية لخطط التدريب علي أعمال التشغيل والصيانة وتشكيل طاقم تدريب في إدارات الصرف الصحي و(٤) متابعة احتياجات تدريب هيئة الإدارة الجارية، تقييمها في الوقت الحالي.

ويعرض الجزء الرئيسي من هذا التقرير الخاص بالتقييم المرحلي للمشروع، كافة القيود التي تعرقل تحقيق أهداف المشروع ويبين الباب الثالث المسائل المتعلقة بسياسة المشروع في حين يبين الباب الرابع والباب الخامس القيود التي تعرقل تنفيذ خطط العمل الموصى بتنفيذها لتحقيق أهداف المشروع، ويعرض الباب السادس المسائل المتعلقة بالاستمرارية ويعرض الباب السابع تقييم لبرامج التدريب في حين يعرض التقرير في الجزء الذي يلي القسم الخاص بالاستنتاجات الرئيسية والذي يتبع (التوصيات ذات الأولوية القصوى) توصيات محددة لتأخذها الإدارة الأمريكية للتنمية الدولية والحكومة المصرية في الاعتبار وتستمر تلك التوصيات في الباب التاسع.

ويمكن القول بإيجاز أن هناك عوامل وقيود كثيرة تعرقل تقدم العمل في تنفيذ المرحلة الثانية من مشروع المياه والصرف الصحي لمدن القناة بدءا من الطبيعة المرهقة التي تتسم بها الجهود اللازم بذلها لتنفيذ التطوير التنظيمي في ظل الظروف المحيطة في الإدارات الحكومية المصرية التي أن يتم تطبيق مجال عمل تفصيلي يتضمن تحقيق الإدارة المركزية لسبعة وحدات إدارية حكومية. ويجب، حتي في ظل أفضل الظروف، أن تصمم مشروعات التطوير التنظيمي والإداري التي تركز علي قطاع كامل لخدمة أعمال محلية هامة، بحيث تسمح بفترة زمنية مناسبة لا تكفي

الادارة المتطورة، كما يجب ايضا التمرين علي تطبيق هذه الادوات وفهمها تماما لضمان استخدامها والاستفادة منها علي افضل نحو في تجهيز عروض واضحة ومقنعة تبرر تمويل وزارة المالية لآعمال التشغيل والصيانة تحت الباب الثاني من الميزانية (التمويل الطويل الاجل)، ولذا يوصي بان تفكر الادارة الامريكية للتنمية الدولية جديا في تمديد المشروع حتي يتم الانتهاء تماما من تطبيق المزايا المنتظر تحقيقها نتيجة للمجهودات المبذولة في هذا المشروع تطبيقا مباشرا علي كل من الاسماعيلية وبورسعيد .

ويمكن ان تشمل الانشطة التي سيتم تنفيذها خلال فترة التمديد علي :
- تحقيق وضع رسمي للدور الذي تؤديه اللجنة القيادية و١/١ و١/٢ أسلوب تنظيمي بديل لتسهيل تحقيق الاهداف الاستراتيجية وتعزيز الاستقلالية / الاكتفاء الذاتي للمرفق و/ ١١ و تجميع المرافق .

- تجهيز عقد محطة معالجة الصرف الصحي وتنسيق النواحي التنظيمية والادارية مع DPC في بورسعيد

- تطبيق نموذج تعريفه في مدينة الاسماعيلية ومدينة بورسعيد، بكامل احتمالاته، كوسيلة ادارية لتوفير التكاليف وزيادة الدخل .

- تقديم المساعدة الفنية ومتابعة معاونة هيئة قناة السويس في تطوير وتشغيل برامج لمراقبة الوصلات المتصلبة وازالة الرصاص وحماية مصادر المياه

- اضافة تطبيقات ادارة المهمات وادارة الصيانة الي نظام مراقبة المخزون حتي يمكن تطبيق نظام "امر التشغيل" بما يسمح بتحقيق ادارة تقدمية فعلا قادرة علي الحفاظ علي الاداء الايجابي للانظمة المادية .

- اتمام تعديل الهيكل التنظيمي في الاسماعيلية وبورسعيد بحيث يشمل تجهيز قسم تخطيط لضمان ان يتم استخدام الموارد المحدودة علي النحو الافضل لتحقيق الاحتياجات ذات الاولوية القصوى .

- اعداد نماذج هيدروليكية لشبكات المياه وسيؤدي هذا الي تحقيق تحسن كبير في اتخاذ القرارات المتعلقة بخفض تكاليف التشغيل والصيانة كما سيؤدي تقديم برنامج تعليمي ناجح عن المحافظة علي المياه والاهتمام الذي احدثه المشروع لمراقبة الوصلات المتصالبة وازالة الرصاص وبرامج حماية مصادر المياه في هيئة قناة السويس الي تحسين النواحي التشغيلية

- تم تنظيم كافة المخازن كما تم اعداد أنظمة لمراقبة المخزون تتضمن امكانية لادارة المهمات والمواد وتتمشي مع النظام الشامل لادارة الصيانة .

- تم بنجاح تقديم برامج تدريب المدربين وجرى تقديم برامج تدريبية علي التشغيل والصيانة ويحقق المتدربين في كافة الوحدات المعنية استفادة جيدة من تلك البرامج

- جرى تعديل الهيكل التنظيمي وتطوير أهداف المشروع التي حددها صاحب العمل بنفسه

ونظرا لادراك الادارة الامريكية للتنمية الدولية المصاعب التي تواجه تنفيذ مجال العمل الاصلي المصمم بغرض تحقيق الادارة المركزية لسبعة وحدات ادارية مستقلة، وافقت الادارة الامريكية للتنمية الدولية في سبتمبر ١٩٩٤ علي تعديل مجال العمل الذي سيتم انجازه بحلول شهر يونيو عام ١٩٩٦ . والتغيير الاساسي الذي تضمنه التعديل هو التأكيد الجديد علي اتمام "نموذج" لادارة صرف صحي ووحدة في هيئة قناة السويس في السويس ويمكن "تكراره" في مدينة الاسماعيلية ومدينة بورسعيد بعد انتهاء المشروع اذا سمح الوقت بذلك . وقدمت مكتب ميتكالف آند ادى الدولية فرق عمل للادارة وتنفيذ المهام للمساعدة، جزئيا، في نقل المعرفة من السويس الي الاسماعيلية وبورسعيد . ولكن لا يمكن ان يتوقع الفرد ان يتم تكرار النموذج الذي تم تنفيذه في السويس علي نحو تام وكفاء بدون توجيه وارشاد مباشر من مكتب ميتكالف آند ادى الدولية علي التنسيق والتطبيق العملي لادوات

المهام التي تم الانتهاء من تنفيذها قليل فقد تم احراز تقدم جوهري في تنفيذ كافة المهام، واثبتت الادارات المعنية، بحماس، الاساليب التي طورها مكتب ميثكالف آند ادي الدولية

ونعرض فيما يلي الانجازات الرئيسية التي حققها المشروع:

- اقامة لجنة قيادية والاستفادة الفعالة منها كأساس لبناء ادارة وخطة استراتيجية، وساعدت اللجنة علي تعزيز التعاون بين هيئة قناة السويس وادارات الميياه والصرف الصحي/المحافظات، وتواصل بحث البدائل لتحقيق استقلالية المرافق كما انها ساعدت في اعداد العقود التي اجرتها المدن الثلاث بخصوص تشغيل وصيانة محطات معالجة الصرف الصحي بواسطة هيئة قناة السويس وساعدت في مفاوضات تلك العقود

- تأكيد سلطات وصلاحيات المحافظات/المدن في المسئوليات المترتبة علي ملكيتهم لمحطات معالجة الصرف الصحي، عن طريق تقديم مساعدة فنية مفصلة اثناء مفاوضات عقود التشغيل والصيانة ومن خلال ملائمة العمليات والوظائف الخاصة بالعاملين والادارة مع عملبات ووظائف العاملين والادارة بادارات الصرف الصحي ومن خلال تعزيز المشروع وانتداب هيئة قناة السويس العاملين بادارات الصرف الصحي وتكليفهم بتشغيل وصيانة محطة رفع عتاقة المجاورة لمحطة تنقية الصرف الصحي في السويس .

- تصميم واعداد "نموذج تعريفية" مبني علي اساس اسلوب تكاليف الخدمة والذي يمكن ان تستخدمه الادارة لتعيين وتحديد اولويات الاجراءات الخاصة بتحقيق وفر في التكاليف .

- وفي يوليو ١٩٩٥ اقامت هيئة قناة السويس وحدات حسابية منفصلة للميياه لتكون مركزا لاجراءات التدخل الرئيسية في القياس / المحاسبة / التحصيل والتخطيط المالي ووضع تعريفية بغرض زيادة الدخل

- تحقيق الكفاءة الادارية (الاستقلال الذاتي)
- تحسين مستوى اداء الخدمات
- ضمان توافر العمالة المؤهلة ذات الكفاءة

وقد تم اسناد عقد المرحلة الثانية للمشروع (CCII) لمكتب متيكالف آند ادى الدولية (M&E) وبدا العمل في يونيو ١٩٩١ . وتضمن مجال العمل الاصلي للعقد عشرة مهام يقدم من خلالها المكتب (M&E) المعاونة الفنية . وتوقعت الوكالة الامريكية للتنمية الدولية (USAID) ان يتم تنفيذ هذه المهام من خلال ادارات مستقلة لمرافق المياه والصرف الصحي اما بمرفق واحد مستقل لكل مدينة او بمرفق اقليمي .

والغرض من اجراء هذا التحقيم المرحلي هو :

- اختبار كفاءة (فعالية) أنشطة مشروع الدعم الادارى والتنظيمي التي تم تقديمها ضمن مشروع المرحلة الثانية (CCII)
- تقييم تاثير المشروع علي التحسين الادارى والتنظيمي في نطاق هيئة قناة السويس ومدن القناة الثلاث
- التوصية بآية اجراءات اخرى قد تتخذها الوكالة الامريكية للتنمية الدولية والحكومة المصرية لتحقيق اهداف المشروع واغراضه
- قياس التقدم الذى تم احرازه تجاه تحقيق نتائج المشروع

والمساعدة الفنية للتطوير التنظيمي والادارى في المحافظات الصغيرة لها طبيعة استثنائية من حيث حتمية تنفيذها في ظل قيود بيروقراطية كثيرة و ضرورة تحقيقها تحسينات جوهرية ، تتم اساسا من خلال منح سلطات وصلاحيات لهيئة الادارة ، لاحراز تقدم ملحوظ . ولقد ادى سوء الحالة المبدئية لهيئة ادارة القطاع والبيانات الموجودة لدى المحافظات الي ضرورة بذل سنوات من الجهد لتحديد وتحليل البيانات الخاصة بالقطاع و تجهيز انظمة مقترحة للادارة واقتراح ترتيبات تنظيمية وادارية جيدة واشراك الادارات المعنية في كل خطوة من عملية التطوير لضمان استيعابهم وفهمهم لها وموافقتهم عليها مع تنمية ادراك وحس جديد بالسلطات والصلاحيات اى وجب علي المشروع ان يغير الانظمة الرجعية للادارة الي انظمة تقدمية ، وبالرغم من حقيقة ان عدد

ملخص

ان المرحلة الثانية من مشروع الدعم الادارى والتنظيمي لمشروع المياه والصرف الصحي لمدن القناة (CCII) رقم ١٧٤ - ٢٦٣ كان نتيجة مباشرة لما يلي:

- المشروعات المرحلية للتنفيذ والمعاونة الفنية ضمن مشروع مياه الشرب والصرف الصحي لمدن القناة والذي تم الارتباط به سنة ١٩٧٨

- مذكرة التفاهم لسنة ١٩٨٤ بين الوكالة الامريكية للتنمية الدولية (USAID) والحكومة المصرية (GOE) والتي اشترطت توفير تمويل اضافي للمشروعات الراسمالية لقطاع المياه والصرف الصحي (W/WW) علي ضوء التقدم الذى تم تحقيقه في الاصلاح الخاص بالهيكل الادارية والتنظيمية .

اشتملت المرحلة الاولى للتنفيذ علي شبكة مياه رئيسية واعمال التحسين الرئيسية العاجلة اللازمة لشبكات التجميع والرفع لمياه المجارى في مدن القناة الثلاث: السويس والاسماعيلية وبورسعيد . وتشمل المرحلة الثانية الجارى تنفيذها حاليا محطات معالجة الصرف الصحي في كل من المدن الثلاث بالاضافة الي تحسين ترعة المياه الحلوة ببورسعيد ولم يتم بعد تنفيذ اعمال التحسينات الرئيسية اللازمة والمتبقية لشبكات التجميع والرفع .

الغرض من المرحلة الثانية للمشروع (CCII) هو دعم الامكانيات الادارية والتنظيمية لمعاونة ادارات الصرف الصحي في المدن الثلاث وفي هيئة قناة السويس لتحسين ورفع كفاءة اعمال التشغيل والصيانة للتجهيزات المادية (المرافق) التي تم انشاؤها ضمن المراحل الاولى والثانية للمشروع .

واهداف المشروع هي:

- تحقيق الاستقلالية المالية

SECTION 1 INTRODUCTION

1.1 Purpose of the Evaluation

As stated in the scope of work, the purpose of the evaluation is to "assess the effectiveness of the Canal Cities Water and Wastewater - Phase II Institutional Support Project (CCII) #263-0174 in meeting its goals and objectives, and to what extent it improved the institutional capabilities for [the] Suez Canal Authority and the three canal cities....Specifically, the evaluation will:

- ▶ examine the effectiveness of the CCII project institutional support activities;
- ▶ evaluate the project impact on SCA, and the three canal cities institutional improvement;
- ▶ recommend any other actions that may be taken by USAID and the Government of Egypt (GOE) to achieve project goals and objectives;
- ▶ measure progress toward attainment [of] the project outputs.

1.2 Statement of Work

The statement of work specified both the sources of information to be reviewed and the organizations to be interviewed. These are presented in the following section, 1.3.1 Information Gathering. In addition, the statement of work listed the following key items to which the evaluation report is to respond:

1. Examine the effectiveness and responsiveness of SCA and the three canal cities with regard to the policy recommendations developed by the project;
2. Delineate problems and constraints which have slowed or prevented the implementation of the recommended work plans presented by the TA Contractor;
3. Assess any other constraints within the GOE environment that mitigate against achieving overall project objectives;
4. Assess the effectiveness of SCA and the three canal city plans to sustain the water and the wastewater facilities;

5. Evaluate the overall effectiveness of the Training programs including Train the Trainer program in achieving its objective;
6. Quantify the progress toward achieving the project outputs;
7. Recommend actions that can be taken by USAID and GOE to achieve project goals and objectives.

1.3 Methodology

1.3.1 Information Gathering

Datex Inc. fielded Dan Hallett, a consultant sanitary engineer with significant USAID project design, implementation, and evaluation experience in Egypt, to gather information and prepare the evaluation report between June 18 and August 17, 1995. The statement of work specified the review of technical reports produced under CCII, and intensive interviews with SCA and the three canal cities. Mandatory interviews were also conducted with the Chairman of National Organization for Potable Water and Sanitary Drainage (NOPWASD) and the Deputy Minister for Utilities of the Ministry of Housing and Public Utilities (MHPU). A complete list of persons interviewed is provided in Appendix A; a list of all documents reviewed for this report is provided in Appendix B.

The Project serves four clients in the field: the Suez Canal Authority (SCA) and the governorate wastewater sections that serve the three canal cities. Operations and maintenance (O&M) of the water systems for the three cities are managed decentrally by SCA. Thus a total of seven client management groups (client units) went through the interview process. In addition, the Project provided intensive technical assistance (TA) to a number of governorate departments outside of the wastewater sections, including finance and public relations. While it was not possible to interview all of the managers of all of the departments directly involved in the TA activities of the Project, a representative of each affected department was interviewed in at least one city, with the sole exception of finance departments.

A number of interviews were conducted beyond the mandatory scope. Dr. May Yacoob, public participation specialist for USAID's Environmental Health Project, provided insights into community involvement in water and wastewater activities. Dr. Ahmed Gaber, General Manager of Chemonics International - Egypt, provided information on his company's ongoing preparation of infiltration/salinity studies of the canal cities' wastewater collection and pumping systems. Finally, beyond client management personnel, numerous O&M trainers were interviewed, along with several laborer trainees in Suez, in order to assure proper perspective on the value and effectiveness of training program development and delivery.

1.3.2 Analysis and Presentation

The analysis of the information gathered is largely dictated by the key items specified in Section 1.2. In addition, whenever possible, information is analyzed from the opposite approaches inherent in providing a service; namely, from the provider (Contractor or management authority) down, and from the recipient (client or trainee) up.

The key item calling for the quantification of progress toward achievement of Project goals could not be directly addressed since quantifiable baseline data is process-driven, and is, therefore, generated as the Project progresses from analyzing existing conditions to locating data sources that are relevant to planned solutions. Instead, a discussion of quantification in institutional development projects is presented along with several examples of Contractor quantification efforts.

Chapter 2 presents the background of the Project through a summary of the preceding Phase I contract, the Phase II construction contract, and the contract under review in this evaluation. The body of this evaluation report discusses the key items to be addressed, with a chapter devoted to each item. Chapters 5 and 7 call for an assessment toward achievement of the 4 Project objectives and an evaluation, respectively, and therefore, are relatively lengthy. Highest priority recommended actions have been

presented in the front of this report, while additional recommendations are presented in Chapter 9. Finally, a separate Annex document provides extended presentations of issues relevant to Chapters 4, 6, and 7.

SECTION 2 BACKGROUND

2.1 Phase I

The wars of 1967, 1969-70, and 1973 devastated large parts of the infrastructure of three cities along the Suez Canal, namely, Port Said, Ismailia, and Suez, through both physical damage and neglect due to evacuations. Master Plans for the rehabilitation and expansion of water and wastewater (w/ww) facilities in these three cities were developed under a USAID grant in the late 1970s. Top priority projects formed the basis of the Canal Cities Water and Sewerage Project (#263-0048), obligated in September 1978.

The Phase I project, amended in 1983, focusses remaining project resources budgeted for wastewater on the collection system (a major public health emergency), delaying the rehabilitation of wastewater treatment facilities to a Phase II follow-on project. Most of the Phase I construction was completed by 1987. O&M technical assistance (TA) to the 3 governorate wastewater departments (WWDs) was provided by Canal Cities Consultants (CCC).

2.2 Phase II

The Memorandum of Understanding of January 1984 between the Government of Egypt (GOE) and USAID conditioned further funding of capital projects in the w/ww sector on progress achieved in institutional reform. This, together with an institutional needs assessment of the canal cities performed by CCC, provided the framework for the incorporation of institutional assistance into the Phase II project agreement, signed in September 1987.

Phase II capital improvement activities provided for the construction of new wastewater treatment plants (WWTPs) in each of the canal cities and for the rehabilitation of the Sweetwater Canal serving Port Said. The capital improvement project added a new pump station, Ataka, adjacent to the Suez WWTP,

as well as the rehabilitation of another pump station during project implementation. The design/build contractors (DBC) were to provide O&M training on their facilities to governorate O&M personnel.

2.2.1 Institutional Support Contract

The Phase II institutional support contract was awarded to Metcalf & Eddy International, Inc. (M&E), and activities began in June 1991. The contract scope of work called for initial studies and assessments to determine arrangements and required workplans to provide the needed institutional support for a regional semi-autonomous water and wastewater utility organization. SCA, recognized as an existing well-managed regional authority, operated under a liberal Prime Ministerial Decree, using management practices adopted from its colonial origins. Since SCA already managed the water infrastructure for the three canal cities (primarily to assure service to the international shipping industry as well as to serve its workers in the cities), it was hoped, from the beginning, that SCA would accept a more expanded role by incorporating wastewater (ww) management for the three cities within its operational mandate, or via its creation of a branch utility authority. Unfortunately, SCA could not be convinced during the early years of the Project to add this new responsibility. It was also clear that any alternative regional or city w/ww authority would be hard-pressed to develop the management capabilities and funding sources at the disposal of SCA.

Intensive Contractor effort through the Project's Steering Committee resulted in late 1992 in SCA accepting a major role in the region in the ww subsector, namely, as contractor to the cities for the O&M of the newly constructed WWTPs. While this development was recognized as a major accomplishment toward assuring the sustainability of the Phase II capital construction and in setting a precedent in involving SCA in the ww subsector, it also added a major element to the scope of work of the Contractor. At least for the near-term, the myriad institutional support activities that were designed for implementation within a single regional w/ww authority would need to be supplied to 4 clients in 7 locations (7 client units): SCA (headquarters and 3 cities' satellite client units) for water treatment and

distribution and, now, for O&M of WWTPs, plus the 3 WWDs in the cities for ww collection and pumping.

2.2.2 1994 Contract Amendment

February 1994 brought a new Chief-of-Party to the Project. Although considerable progress took place in completing needs assessments, gathering and collating data for new data-based management systems, and in implementing O&M Training-of-Trainer (ToT) programs, it was clear that the Project had not faced the implications to the scope of work of providing institutional support to 7 client units, whereas the scope implied support to one centralized regional management structure. M&E, with USAID approval, performed an "internal evaluation" of the Project between March and June of 1994, focusing on adjusting their scope of work to: (1) provide services to seven institutional units instead of one, and (2) complete Project goals within the present contracted period (ending June 1996).

After much analysis and negotiation among all parties involved, USAID agreed to modify the scope of work in a contract amendment in September 1994. Major modifications included:

- ▶ Contractor level-of-effort in ww collection and pumping for the remainder of the contract period be focused on completing institutional support activities in Suez only. This will create a "model" for future replication by the WWDs for ww collection and pumping in Ismailia and Port Said.
- ▶ Refocus efforts to strengthen financial management practices, including the use of cost-of-service-based tariff models developed as a financial management tool.
- ▶ Eliminate original scope of work subtasks that require significant Contractor level-of-effort that are either no longer relevant or are not germane to immediate institutional development needs.
- ▶ Refocus SCA activities on operational improvements.

SECTION 3 POLICY RECOMMENDATIONS

Examine the effectiveness and responsiveness of SCA and the three canal cities with regard to the policy recommendations developed by the project.

CCII policy issues, implemented through a project Steering Committee (established by Ministerial decree in late 1991), consist of the Secretaries General of the three governorates, the Head of the Works Department of SCA, the Chairman of NOPWASD, and the Deputy Minister of the MHPU. Higher-level policy issues are referred by the Steering Committee to a Follow-Up Committee composed of the three Governors and the Minister of MHPU. The Contractor (M&E) Chief-of-Party administers the Steering Committee meetings by setting agendas and through acting as chairperson during meetings.

Activities of the Project Steering Committee remained high throughout the life of the Project, they held dozens of meetings each year, with members contributing a high level-of-effort in implementing recommendations. Major policy achievements by the Steering Committee include:

- ▶ SCA acceptance of O&M responsibility for the new WWTPs.
- ▶ Development and negotiation of the O&M contract for the Suez WWTP.
- ▶ SCA acceptance of O&M responsibility for the new Ataka Pump Station, adjacent to the Suez WWTP.

In addition, the Steering Committee presently facilitates discussions with the Central Agency for Organization and Administration (CAOA) to gain approval of governorate WWD organizational and staffing changes to be recommended by the Project, beginning with Suez. Also, the Committee facilitated negotiations between the Secretaries General and the Egyptian Environmental Affairs Agency (EEAA) resulting in the acceptance of interim effluent quality requirements for the new WWTP in Suez.

The Secretaries General, in their oversight of the WWDs in the O&M of the ww collection and pumping systems, have been largely responsive to M&E governorate-level policy recommendations that facilitate Project goals. For example, the Secretaries General assisted the Contractor in separating information from sources in other governorate departments that is necessary for WWD management decision-making (eg. financial and stores).

While the WWD managers, themselves, are limited in the roles they can play in the level of policy issues thus far tackled within the Project, they display an eagerness to learn how to more effectively manage their departments under increased levels of independence. Two current examples of WWD managers advocating policy reform toward independence are: (1) Ismailia WWD is presently under the City Council, and is pursuing direct accountability to the Secretary General, and (2) Suez WWD is presently under the Housing & Utilities Directorate, and is also pursuing direct responsibility under the governorate.

The provision of TA and "hardware" in the Project was a key factor in SCA's acceptance of internal policy recommendations. SCA was initially reluctant to consider breaking out water-related information from central departments and form separate water units, such as financial accounting, due to the prevailing attitude that water only forms a small percentage of the Works Department, which is a small percentage of overall SCA operations. But once the Contractor demonstrated the efficiencies to be gained using Project-supplied training, hardware, and software, organizational restructuring, even Authority-wide, was accepted.

During the early years of the Project, SCA did not want to accept any responsibility for future involvement in the ww subsector. Their major objection to this responsibility came from the idea that it would be a burden on them to provide O&M on old systems. The SCA stated that they had no trained staff in ww O&M or management, that old systems break down too often, and that there was no

assurance that the added costs could be recovered. However, once the Project was able to offer the SCA a contract to the cities to provide O&M for the WWTPs, which included O&M training, SCA accepted.

It is the hope of many that if USAID should decide to use remaining canal cities sector development funds to do major rehabilitation of the collection and pumping systems (during the July interviews conducted for the preparation of this report, there was no knowledge in the field that USAID had already obligated these funds for that purpose), SCA will seriously consider undertaking the responsibility of management of the all 3 w/ww systems. The outstanding concern regarding this scenario comes from the existing WWD staffs, who fear that SCA will not accept many of their workers in such a transfer of authority.

Although the Project could not achieve the formation of a single independent utility, system developments implemented by the Project were designed to be compatible among all client units so that future integration could result when and if appropriate. The Steering Committee plans to reopen discussions of organizational alternatives in the near future. Finally, it should be noted that in lieu of a regional utility, M&E plans to assist the Steering Committee in developing systems of cooperation among the three WWDs for emergency needs, training, and planning.

SECTION 4 IMPLEMENTATION CONSTRAINTS

Delineate problems and constraints which have slowed or prevented the implementation of the recommended work plans presented by the TA Contractor.

Most of the problems and constraints which slowed work plan implementation are due to two factors: (1) the necessarily sequential nature of work plan elements inherent in institutional development, and (2) the accelerated pace of work plan scheduling. A discussion of the effects of sequenced institutional development activities on implementation progress is presented in the Annex.

Implementation progress in most tasks was limited during the initial years of the Project. Necessary assessments and data collection were accomplished for most tasks, while the major focus of activity was in the creation and use of the Steering Committee in achieving the best possible institutional arrangements. These activities would assure the maximum success toward achieving the Project objectives under present GOE circumstances. Other areas of significant accomplishment during those years include the development of: (1) O&M training-of-trainer programs for ww collection and pumping, (2) educational materials for public water conservation campaigns, and (3) initial assistance for upcoming WWTP transition.

A major outcome of the Contract scope of work modification of September 1994 (see Chapter 2.2) was the new emphasis on completing the Contractor work plans for the Suez WWD collection and pumping unit only by the end of the Contract period. Ismailia and Port Said WWDs would proceed with their O&M training, tariff formulation, and consumer education tasks to completion, but all remaining tasks would proceed to final formulation and completion by imitating the development of the Contractor-assisted "model" in Suez. Needless to say, this change of scope was not enthusiastically received in Ismailia and Port Said, even with the addition in March 1995 of management and task Implementation Teams, composed of members from all client units. Exchange of information from the intensely assisted

Suez governorate personnel to their counterparts in Ismailia and Port Said comprised one of many functions performed by these implementation teams. The Contractor especially relied on the management Implementation Teams to retain enthusiasm in underserved client units.

With the above discussion in mind, specific problems and constraints which have slowed or prevented the implementation of Contractor work plans include:

- ▶ Inconsistent attendance and enthusiasm by a number of Project client participants due to a lack of incentives to participate in meetings or other activities, especially with required travel.
- ▶ In Ismailia and Port Said, clients perceive a lack of progress beyond initial training. They are encouraged to focus on the next activity mainly through short-noticed visits of Contractor staff.
- ▶ Computer hardware has not yet arrived on which to practice theories/systems already developed and trained, often many months ago.
- ▶ Work plans are suddenly very tight and intensive, especially in Suez, due to attempting to accomplish many of the scope of work activities during the last 14 months of the Project.
- ▶ While most of the Project participants in Ismailia and Port Said accept and understand their new activity level within the remainder of the Project, some others do not, and lose confidence which may negatively reflect the future level of effort.
- ▶ While many task assessment activities happened years ago, their follow-through on training and practice has been delayed even more by the current focus on completing the Suez model.
- ▶ A mixed degree of understanding, level of activity, and agenda dissemination among Implementation Teams and members.

M&E assistance to the SCA has a unique aspect. Since there exists a general perception that the SCA was already well-managed, especially within their own minds, M&E work plan development has had to be more carefully crafted to first convince the client that such TA was even needed. (For example,

SCA did not perceive, in the early days of the Project, that ToT training for distribution network O&M employees was a necessary intervention. Only after years of discussion and observation of M&E efforts, could SCA be convinced to participate, and implementation only recently began.) SCA also tends to be more impatient than the WWDs for implementation follow-through by the Contractor.

SECTION 5 OTHER CONSTRAINTS TO OVERALL PROJECT OBJECTIVES

Assess any other constraints within the GOE environment that mitigate against achieving overall project objectives.

The overall Project objectives are: (1) attainment of financial viability, (2) achievement of organizational effectiveness, (3) improvement of service delivery capability, and (4) availability of competent manpower.

5.1 Financial Viability

Financial viability of a utility can be defined as the ability of the utility to guarantee the availability of revenues sufficient to cover all necessary costs for administration, O&M, and capital improvements for system rehabilitation and expansion. The CCII project addresses this issue both directly, through improving the utility's ability to efficiently collect revenues, and indirectly, through reducing overall costs. Without the achievement of an integrated w/ww utility, revenues are presently collected only via SCA water bills, with the incorporated ww surcharge being transferred to the governorates, who are responsible for the ww systems. Present GOE-supplied water tariffs are used in SCA billings, with the ww surcharge set at 50% of the water bill as part of the Project agreement. All revenues are retained locally. While revenues collected for water are presently sufficient to pay for SCA's O&M of the water systems (not capital costs), and the revenues collected from ww surcharges have been largely sufficient to cover governorate WWD O&M costs of the collection and pumping system, the huge additional O&M costs for the new WWTPs have no local institutionalized source of funding. Nevertheless, the GOE is obligated to fully fund the first 2 years of WWTP O&M, and as long as the governorates apply for subsequent Bab2 funding in a convincing manner, they should be able to maintain adequate subsidization to cover their O&M needs.

The following summarizes the constraints to Project financial viability objectives:

- ▶ The GOE, recognizing the unacceptable burden to the majority of the public to pay for the cost of w/ww services directly, prefers to continue to pay by subsidies from general overall revenue collections.
- ▶ Concern of local officials, politically, to suggest increased tariffs to local councils.
- ▶ GOE absence of commitment to pay for capital improvements.
- ▶ Lack of funds for capital improvements to ww collection and pumping systems adds large indirect, burden to O&M costs of entire ww systems. (The recent USAID commitment to fund these capital improvement needs should rectify this present condition.)
- ▶ MHPU claims it would be able to fully support independent utilities, but now must go through the GOE budget.

Finally, it is important to note that financial viability of the w/ww systems will be greatly improved by cost savings through efficiencies developed by the Project. Specifically, improved identification of system losses, preventative maintenance systems, and overall utility management and administrative efficiencies proposed by M&E should afford significant longer-term cost savings.

The other side of the financial viability equation, namely, increased revenues through efficiencies in metering, billing, and collection, has been a substantial focus of M&E. The fact that SCA can internally subsidize the costs of the water systems added to problem recognition. Also, illegal connections are significant and are difficult to control without efficient metering, billing, and collection. M&E would like to develop and implement an automated customer information system from which data can be analyzed to pinpoint problem areas as well as provide information necessary to optimize metering/billing/collection.

5.2 Organizational Effectiveness

The presence of the SCA as an already effective organization in charge of water services for the Canal

Cities limited the overall discussion of options for future organizational restructuring for w/ww service delivery. A Contractor study in 1992 concluded that the Project, through its Steering Committee, continue to try to persuade the SCA to accept the expanded role as a full-service w/ww utility.

The continued reluctance of SCA to take on this added responsibility led to Project focus on the improvement of organizational effectiveness of the remaining governorate WWDs. It was hoped that improved management and training of governorate staff, as well as Project-developed organizational improvements, would make eventual merger within SCA operations more attractive. M&E has succeeded in extracting information and establishing coordination from a number of separate governorate departments for use by WWD management. But governorate officials know that serious limitations exist in the degree of organizational effectiveness attainable within the governorate bureaucracy. These constraints pertain mainly to the Secretary General's or City Council's ability and political will to provide adequate resources to any one department to assure its optimum effectiveness. For this reason, all concerned officials recognize the importance of continued Contractor efforts toward a final solution that incorporates ww functions within SCA or within an authority independent of governorate budgetary restrictions.

Finally, it should be noted that M&E is presently working with the WWDs on internal organizational restructuring, beginning in earnest in Suez. As a governorate department, required CAOAs are being sought, starting in Suez, for organizational and personnel needs.

5.3 Service Delivery Capability

GOE constraints to Project efforts to improve utility units in service delivery capabilities primarily derive from budgetary resource limitations. The GOE cannot afford to guarantee Bab3 funding for the capital improvement needs of the w/ww sector. It even specifically prohibited tariff models which reflect capital improvement costs. A prime example of the effect of limited funding for capital

improvements is the excessive O&M expense and manpower required to keep the aged ww collection and pumping systems running. In addition, WWD managers must be very persuasive to convince their Secretaries General to use their limited funds to provide outside TA for ww system needs.

Finally, the lack of independence from governorate/city council/housing directorate departments within the governorates contributes to delays in the WWDs' ability to provide services at optimum efficiency.

5.4 Availability of Competent Manpower

The availability of competent manpower comprises a major source of concern in any institutional development project in Egypt which requires implementation within governorate ranks. The GOE personnel system limits promotions, salaries, and incentive systems, while not adequately rewarding job performance. While the MHPU provides mediocre management training at its NOPWASD training center in the Mogamma building in Cairo and good O&M training in Damanhour, these facilities are inadequate to meet the needs of the canal cities, let alone other underserved provincial cities throughout the country. Besides, the governorates cannot afford to send the trainees to such distant training sites. There exists a strong need for locally available management and basic ww systems training.

A national operator certification program would go a long way in rectifying many of the problems inherent in the GOE personnel system through the development, reward, and retention of competent manpower within the sector. But NOPWASD has not seriously followed up on the basic excellent work started in Beheira Governorate under USAID's WWISP project. M&E is presently in discussions with the SCA to consider a SCA-based operator certification program for the region.

Finally, concerns exist within the governorates that once the Project identifies new departmental needs, such as planning, within the context of the organizational restructuring exercise presently underway, that the CAO approval process or unavailability of competent manpower within government ranks may

pose significant limits on achieving optimal staffing. Also, it is important to note that while SCA has no problems retaining or adding competent manpower due to their liberal personnel management practices and compensation levels, present WWD employees are concerned that if some day their jobs are made obsolete due to SCA agglomeration of ww activities for the governorates, that SCA's criteria for hiring them may be too strict. (SCA has already hired most of the Suez governorate employees who were trained by the DBC in the O&M of the Ataka pump station.)

SECTION 6 EFFECTIVENESS OF SUSTAINABILITY PLANS

Assess the effectiveness of SCA and the three canal city plans to sustain the water and wastewater facilities.

The sustainability of w/ww facilities requires: (1) long-term guaranteed financing for O&M, capital improvements, and administration, and (2) institutionalized systems for management and planning for present and future facilities needs. Financial viability issues were presented in Chapter 5. While Project TA toward institutionalizing management practices has primarily, up until now, focused on identifying needs and providing basic training in the operation of new "tools" to assist management, most of the requirements for "institutionalizing" management and planning systems await a number of developmental steps before sustainability can be assured.

The SCA has traditionally managed water facilities in the canal cities. The Project incorporates numerous interventions to segregate and optimize water management practices within the SCA, and the general agreement is that the SCA enjoys the financial ability and management commitment to sustain these practices.

Through the considerable efforts of M&E and the Steering Committee, the Project contributed greatly toward the sustainability of the new WWTPs and the Ataka pump station by securing the SCA as the O&M contractor. While the contract only covers the initial two-year period under NOPWASD management, the governorate owners have been involved in the contracting process, and therefore, should be able to sustain the contracting mechanism for future optimal O&M of these facilities.

The sustainability of the ww collection and pumping facilities and Project-provided institutional development to support these facilities remains problematic. The physical condition of much of the systems is known to be poor, and infiltration studies being conducted on these systems are assessing

future needs. The state of these systems has had a far-reaching effect on Project goals. Not only has WWD manpower availability been diluted just to "keep these systems running", but the systems will also have a significant impact on the quality and quantity of the ww reaching the WWTPs, greatly effecting treatment operations and, therefore, effluent quality. What is probably most important is that their poor condition is a major reason why the SCA has not been willing to consider the role as overall w/ww utility manager for the 3 cities.

The CCII project focussed increasingly on improving management and delivery systems within the WWDs to support the O&M of the ww collection and pumping systems. Most of this institutional development work has not proceeded beyond basic training in preparation for the arrival of hardware on which to practice these new "management tools", or it awaits further development on the organizational restructuring task. The remaining sequential steps in each activity, as well as within the training effort of each activity (see Annex), are yet to be implemented, and are required to ensure sustainability.

Arguably the most critical issue for the sustainability of the w/ww facilities is the future of the role that the Project's Steering Committee took in institutional development activities progress and in affecting a regional approach toward the creation of independent utilities (or a regional utility organization). The Steering Committee must gain official status beyond the life of the Project until a Board of Directors is established under the independent utility/utilities.

This Committee/Board must also incorporate strategic planning activities for the utilities, including the maintenance of a focus on regionalization of appropriate functions.

It was envisioned that the task Implementation Teams (see Chapter 4) might voluntarily continue beyond the life of the Project to foster communication among members from the 3 cities, developing and

promoting regional efficiencies, and assisting each other in technical matters. With few exceptions, this goal will likely be unfulfilled without a regional w/ww authority or Contractor insistence due to the personal burdens of travel time and expense.

Planning sections are being considered for addition to the WWDs in the present reorganization exercise. While the main function of these sections will be to develop and evaluate capital improvement needs within strategic plans, the dearth of resources available to the governorates for capital improvements in the foreseeable future is of major concern for the sustainability of the facilities.

The sustainability of Project-provided training programs is discussed in depth in Chapter 7. Without sufficient funding to contract out needed future TA from sources outside their department/governorate, the WWDs will not be able to adequately maintain and improve on Project gains and facilities integrity. (See Annex discussion.) Both the SCA and the WWDs expressed the present need for TA for major repairs and spare parts for equipment supplied under Phase I activities. The Project should use its TDY budget to provide such TA for high priority physical systems repair needs, and spare parts procurement through existing NOPWASD and MHPU channels should be taught to the clients.

A related need to assure sustainability of most of the Project interventions is a provision for updating information on specific new developments or products available in the various fields of support developed to assist WWD managers. Project-supplied training in new systems provides only current knowledge distilled by the Contractor. Affiliations with technical associations providing such information are difficult to foster and maintain due to excessive fees and/or transportation costs.

Educational programs form an important tool for sustainability. The Project has been quite successful in developing, promoting, and delivering public educational tools in support of water conservation and other messages designed to sustain efficient operation of the w/ww facilities. For example, a third-grade

curriculum was developed and sustained for use in the canal cities, and the Ministry of Education is considering its use nationwide. While TV air spots were developed and negotiated by Project staff and initially aired locally free of charge, there are no Project, or more importantly, sustainable sources of funds to re-air these messages. In addition, appropriate local (and national) NGOs and PVOs were not sought by the Project to assist in spreading the educational messages. Also, it should be noted that the MHPU developed a secondary school-level vocational curriculum for the w/ww sector. This could provide a major boost to the long-term sustainability of sector improvements.

Finally, and possibly most importantly for the sustainability of Project accomplishments, each system intervention established by M&E is able to be integrated among the 7 client units. In other words, in the event that units merge into a combined authority, each activity will have received training and practice in similar "software" (albeit at possibly different levels of sophistication). This will also greatly improve the chances that WWD employees will be acceptable to SCA management in the event of SCA acceptance of broader ww management authority.

SECTION 7 EFFECTIVENESS OF TRAINING PROGRAMS

Evaluate the overall effectiveness of the Training programs, including Train the Trainer program, in achieving its objective.

Task H in M&E's Scope of Work called for the development of organization-specific O&M training systems for water and wastewater personnel based on the training curricula developed under the Phase I project, coordinated with the training activities of the Phase II DBCs. (Training within other tasks is discussed in previous Chapters and in the Annex.)

M&E chose 5-7 O&M supervisors from each of the WWDs and SCA water treatment plants, and provided train-the-trainer (ToT) instruction in training needs assessment, curriculum development, training materials and lesson plan development, training theory, post-training testing, etc. Each training unit was assigned a head trainer, who would be responsible to the Contractor, and would oversee all training implementation, including scheduling. Training materials developed in Phase I as well as other M&E-developed courses were reviewed and made appropriate to present local infrastructure needs, and translated to Arabic. ToT development began in 1993, and concluded in 1994.

Each training unit provided a dedicated classroom and procured furnishings. The Project provided appurtenances and equipment such as a TV, video player, camcorder, computer and printer, overhead projector, instructional videos, whiteboard, window shades, etc. All rooms were designated (Ismailia WWD is still constructing a new room) and furnished, but procurement of some of the high-tech hardware has been delayed, with the TVs and video players just arriving, and the computers arriving within months. Standard reference materials (in English only, since Arabic references were not determined to be of adequate quality) will also be provided by M&E, and subscriptions to sector journals have been ordered.

The production of cut-away models of equipment by the trainers for use in classroom demonstrations was a noteworthy accomplishment of the project. Not only did this activity provide significant cost savings to the utilities/Project, but it also exemplified a valuable lesson taught by M&E in most interventions; namely, significant cost savings can be achieved through self-reliance. This is an important lesson for institutions operating in resource-poor environments.

The trainers have been delivering their classes for a number of months. In the SCA, training preparation and classes are conducted immediately after the completion of trainee/trainer work shifts. SCA trainers are provided overtime pay for this extra training obligation. WWD trainers must perform their training duties during their normal work times since there is no provision in GOE personnel rules to offer them incentives for this extra work.

These new O&M training activities are well-received at the trainee and management levels. Only the WWD trainers are frustrated due to the absence of incentive pay for recognition. The WWD trainers and department managers also recognize the effects of taking time during work shifts to provide training in lieu of on-the-job requirements. The trainees are enthusiastic about the program, and expressed their desire for more courses.

Two noteworthy examples of trainers developing new materials from lessons learned during classroom implementation are:

- ▶ An SCA trainer, who also teaches basic water courses at SCA's Port Fouad apprentice training center, noticing a need, developed a basic water treatment course for SCA water treatment plant (WTP) trainees (a 5-week, 40-hour course). This course was institutionalized by the Works Department as a requirement for all WTP trainees who have not gone through the SCA's apprenticeship training.
- ▶ Ismailia WWD trainers developed separate modified courses for illiterate trainees. They want

to implement a separate literacy course for these trainees, using manuals from a local literacy training school. This development has not been related to the other cities' WWDs, pending instructions from M&E.

M&E is presently preparing a Training Development Plan as a sustainability plan for the training programs. This should cover the implementation specifics of applying the theories taught in ToT, including on-the-job training (OJT), performance testing and evaluation, revision of training materials based on the former, and standard operating procedures. (See Annex.)

As mentioned in Chapter 4, the water network units of the SCA, after seeing the benefits of their counterpart WTP units' O&M training efforts, have recently started Contractor-supplied ToT training.

Finally, coordination with the DBCs in providing a "full package" of O&M training programs for the sector brought to light the outstanding need for a basic ww training curriculum. While M&E suggested they provide this curriculum in the 1994 modified Scope of Work, the DBCs decided that it would be more appropriate to develop the course(s) themselves since they are already training the WWTP trainees.

7.1 Evaluation

Task H, like most of the other Scope of Work tasks, has only been partially implemented, although M&E is confident that all subtasks called for will be accomplished in all 3 cities by June 1996. In fact, all client units expressed their satisfaction with the overall progress of this Task, as well as the positive effects already evident in on-the-job understanding. It should also be noted that this is one of the few tasks that has actually proceeded to a point in implementation where effects can be judged.

The outstanding major concern for these training programs is in its sustainability for the "next generation" of trainers. This particular sustainability issue is rarely addressed in the design of development projects. While the Project produced and referenced training manuals in ToT, who will teach the next set of trainers how to best apply the theory to practical application? Who will oversee this practice? While sources of O&M information and training materials were determined under Project supervision, trainers have not been advised as to how to procure updated materials as the need arises. How will the "next generation" of trainers learn about sources of information? This "next generation" question should be asked, and solutions implemented, for training activities within all Project institutional development activities.

In the absence of designated trainers in governorate service, M&E chose O&M supervisors within the WWDs to receive ToT training. The use of O&M supervisors in this role has several advantages. For example, they are in a natural position to provide OJT, and are most appropriate to analyze on-going training needs. But unlike their SCA counterparts, they must add these duties within their normal work hours, without added compensatory recognition. As their training duties expand with the implementation of follow-up activities to complete the "training cycle", these problems will only worsen. This situation should be addressed by the Secretaries General, possibly through the MHPU, before program enthusiasm becomes noticeably effected and/or job performance at facility sites is seriously effected by training's time demands.

Many of the training modules describe optimum job performance using equipment that is not available to the governorates. This is confusing, if not disillusioning, to the trainees. Lessons should be modified from ideal circumstances to reflect realities.

Without quality Arabic-language references or sector periodicals, trainers need strong English language skills. These skills are also essential to maximize the benefits of conference attendance, other national

and international exchange activities [that greatly enhance enthusiasm for quality control initiatives and promotes sustainability through comradeship], and present and future foreign TA. This is true for the trainers as well as other managers who will depend on English-language references and exchanges in the future optimization of their new job functions. For sustainability, English language training should be encouraged for those who require it.

The DBCs will provide both basic ww, and WWTP-specific, O&M training to the present contracted operators. Who will provide this training to the "next generation" of contracted or owner-supplied operators? What about the basic ww training needs of the WWD collection and pumping operators, and their "next generation"? The SCA is already well on the way toward institutionalizing these long-term activities for water, but the WWDs have no such plans for ww. Permanent establishment of locally available basic ww systems and facility-specific ww O&M training facilities, with permanent small training staffs located at each WWTP, may provide the ideal solution.

Finally, if present discussions with the SCA regarding the establishment of a regional operator certification program for the sector bears fruit, a need will exist to provide training locally, geared more specifically toward passing certification exams. The model examinations and training curriculum developed at NOPWASD's Damanhour Training Center during the WWISP project should be examined and adapted to the SCA's/WWD's personnel classifications and other local needs. Training curricula, trainer requirements, and training facilities developed under Project guidance should then incorporate these additional training demands.

SECTION 8 PROGRESS TOWARD PROJECT OUTPUTS

Quantify the progress toward achieving the project outputs.

The quantification of project outputs of institutional development projects has been problematic. Unlike most development projects, where benchmarks of progress can be easily identified, whether they be completed interim steps in construction activities, or assessment reports required in a master planning project, institutional development progress benchmarks are more elusive. This is due largely to the long-term nature of most institutional development project achievements in combination with the inherent dependency on evolving government responses to necessary administrative and legal reforms suggested by the project.

Certainly, performance measurements of project participants can be developed, assessed, and quantified. But even these measurements will display fluidity as the project learns through experience and continues to modify its performance standards. Benchmarks of achievement toward project accomplishments can also be developed early in the project, but again, the relevancy of their achievement to overall project goals may be questioned under newly evolved institutional constraints or capabilities outside the control of Project contractors.

This is not to say that it is, therefore, impossible to establish benchmarks of progress in institutional development projects. But these benchmarks will necessarily be fluid. In other words, and in conclusion, if USAID requires quantification of project achievements toward institutional development project goals, the best overall indicators may be the accomplishment of work plan sub-tasks as they are developed and sequenced throughout the life of the project.

It should be noted that M&E has made several attempts to quantify Project outputs. Notably:

- ▶ The KPMG Peat Marwick Exit Report of June 1994 provided subjective ratings of

Appendix A

LIST OF PEOPLE INTERVIEWED

Cairo

Mamdouh Raslan	CCII Project Officer, USAID
Alvin Newman	UAD, USAID
Medhat Wissa	UAD, USAID
Herbert Feldt	UAD, USAID
Nancy Barnes	Chief of Party, CCII, M&E
Jeanie Wiginton	CCII, M&E
Michael Cooney	CCII, M&E
Youssef Iskaros	CCII, M&E
Mustafa Sharaf	Dpty. Minister for Utilities, MHPU
Fathi Kozman	Chairman, NOPWASD
Nahed Zahran	Dpty.Asst.,Foreign Donor Liaison,NOPWASD
Ahmad Gaber	President, Chemonics Int'l.-Egypt
May Yacoub	Environmental Health Project, CDM

Suez

Fayez Hashem	Secretary General
Ismail Oraby	Chief of WWD
Farooq Said	Head of Pumping, WWD
Ali Hossein	Head of Workshop & Maint., WWD
	Head of Stores, WWD
Mohammed Farid	Head of Administrative Affairs
Ghalib el Sayid	Chief of Public Relations Dept.
Hassan Foued	Dir. of WTP, SCA
Nashaad el Munayiri	Chief of Network, SCA
Ramadan Ghani	Chief of Electrical Dept., WTP, SCA
Ahmad Ibrahim	Chief of Stores, WTP, SCA

Ismailia

Mohammed Mahmood	Chief of WWD
Hamdy Mahran	Head O&M Trainer, WWD
Saad Hamed	Head of Network, WWD
Mohammed Desouki	Electrical Tech., WWD
Mohammed Mohammed	Pump Sta. Mngr., WWD
Mohammed Farah	Trainee, WWD
Mohammed Yousef	Trainee, WWD
Ragab Ali	Trainee, WWD
Yasser Mohammed	Trainee, WWD

Hani el Bon	Dir., Civil Works Dept., SCA
Naim Ramadan	Asst. to Civil Works Dir., SCA
Emad Abdul Wahab	Chief of Water Dept. for Cities, SCA
Naga Addeya	Dir. of Ismailia Water Works, SCA
Esam Ibrahim	Ass't. to WTP Dir., SCA
Ahmed Herrik	Mech. Engr., WTP, SCA
Mohammed Besyuni	Elec. Engr., WTP, SCA
Nabil el Din	CCII, M&E
Saleh Mourad	CCII, M&E
Magdi Shatla	CCII, M&E
Magdi Moussa	CCII, M&E
Mona el Azab	CCII, M&E

Port Said

Ali Mageyri	Secretary General
Mosad Soliman	Chief of WWD
Mohammed Sheikh	Head of Pump Sta., WWD
Engr. Saleh	Asst. to Dir. of Public Works, SCA
Mustafa Genina	Dir. of Pt. Fouad Training Ctr., SCA
Medhat Fooda	Dir. of WTP, SCA
Saleh Saleh	Dir. of Water Dist. System, SCA
Ahmad Saleh	Mech. Engr., WTP, SCA
Mohammed el Sayad	Elec. Engr., WTP, SCA

Appendix B

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ANNEX

I. The Sequential Nature of Institutional Development Activities

Institutional development necessitates, to a large degree, two levels of sequentially accomplished types of activities. On one level, institutional change and internal management practices improvement require the following sequential steps (where each successive activity must wait, for the most part, on the completion of the prior one): (1) decision on level of authority and independence of the utility, along with other assessments and data gathering, (2) development of new organizational structure with specified goals, functions and job descriptions, (3) obtain approval for organizational restructuring, (4) fill new manpower requirements, (5) identify training needs and train new manpower, (6) develop internal management lines of responsibility and communication, (7) develop standard operating procedures (SOPs), etc.

The other level of sequential activities is the "training" element (this varies from teaching a new way to account for water system costs to full-scale O&M training systems) that must be supplied within many of the above institutional development steps. The sequential steps of this internal training element may include: (1) identify needs, (2) prepare training materials and supply training, (3) provision of new hardware, (4) on-the-job training (OJT) and/or oversight, (5) develop and implement performance evaluation system, (6) identify additional needs (revise training, modify software application, add software, etc.), (7) implement additional needs via cycling steps (2) to (6) until satisfied with performance.

While not all of the steps outlined above require sequential application (for example, training on new systems may be provided to existing staff prior to completion of reorganization planning and approval where staffing changes are not anticipated), in general, the implementation of each subsequent step depends upon the completion of the prior steps. Contractor work plans must mimic these sequences.

Sequenced activities require Contractor diligence in assuring client enthusiasm during periods of inevitable delays that occur in implementation. The importance of maintaining client enthusiasm in the context of implementing new ideas within an institutional development project in developing country environments cannot be overstated. This is especially true in institutional development projects due to its nature of primarily providing structural and management advice, with few of the "hardware" provisions normally supplied by foreign donors. For example, while this Project makes many new demands for expanded roles of client personnel, it does not provide direct incentives for participation. In the meantime, the same client personnel may be tackling significant on-the-job technical problems which demand expert TA that is not available within this Contractor's scope of work. This situation, when added to delays in sequential activities, inevitably leads to reduced enthusiasm from clients in Project participation, which can reduce the overall effectiveness of the institutional development efforts.

II. The Need To Incorporate The Provision To Contract Out Technical Assistance Within USAID-Supported Institutional Development Projects

When the Contractor is no longer available to supply TA on institutional development at the WWDs, there will still remain a need for the WWDs to have access to TA from without their

department/governorate sources. No institutional development project can leave behind all the answers to all the unknown future situations that may arise. Therefore, the Contractor needs to institutionalize a system to access (eg. contract out) TA as required.

The USAID Policy Paper on Institutional Development of 1983 stated: "A.I.D....should avoid activities that explicitly or implicitly preempt private sector options." Project-provided TA to contract out future TA needs will depend, to a significant degree, on the availability of quality private sector services. During the 1994 scope of work revision for the Project, a number of relatively peripheral activities from the original scope were dropped, justifiably, in order to achieve basic Project goals by the end of the present Contract. Analysis of, assistance to, and coordination with the private service sector to the w/ww industry was one of those scope activities dropped. Recommendation #8 suggests its reincorporation.