Government of Ghana

UNITED NATIONS DEVELOPMENT PROGRAMME

World Bank

GHANA

LOW COST HUMAN WASTES MANAGEMENT

- KUMASI PILOT PROJECT
- TRAINING NETWORK CENTRE, KUMASI

Project GHA/87/016/F/01/42

Report of the Evaluation Mission

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The two components of the project - the Kumasi Sanitation Project and the Training Network Centre - were largely separate. Our report has therefore also been compiled in two separate parts, other than the Executive Summary and the Annexes.

The report has been drafted in accordance with Guidelines for Evaluators prepared by UNDP.

I. EXECUTIVE SUMMARY

General:

The 3 year duration Low Cost Human Waste Management Project, which started in 1989, had two main components:

- **Kumasi Sanitation Project (KSP)**
- **Establishing a Training Network Centre at UST, Kumasi (TNC)**

The report found that the project was appropriate, justifiable and in line with Government policies. The project document had been planned in close liaison with relevant agencies prior to approval. The project document did not allow for adequate time to develop and test new solutions. This should be considered essential for any pilot project.

The project was found to be well coordinated with good support from all agencies. The back-stopping provided by the UNDP/World Bank Regional Water and Sanitation Group (RWSG) was good and necessary for addressing many difficult and important development issues.

The newly-engaged members of staff at both KSP and TNC are well-motivated and enthusiastic. They have benefited from training provided. Useful experience has been obtained by working with KSP.

Justifiable and appropriate changes were made in the KSP and the TNC. The changes improved the project significantly compared to the original project design.

Kumasi Sanitation Project (KSP)

As well described in the project document, the urban areas in Ghana require improvement in urban sanitation. Development of affordable and sustainable solutions, which may reach all people in the urban areas, is a high priority for the Government of Ghana and its metropolitan areas. The Kumasi Sanitation Project was and still is an important, appropriate and justifiable project in search for improved and sustainable solutions.

The KSP had been suitably integrated into local infrastructure. The KSP was integrated into the newly-formed Waste Management Department of the Kumasi Metropolitan Authority.

Significant changes were made to the required output for the KSP after the an extensive baseline study which indicated that non-waterborne sanitation was more appropriate than waterborne sanitation for most areas of Kumasi City. The same study also found that 40% of the population relied on public toilets as the only form of sanitation. The changes included improvement of public latrines and construction of about 200 household latrines.

Outputs have included the construction of more than a hundred household latrines, rehabilitation/ rebuilding of three large public latrine in the Central Business District and design of a simplified sewerage system.

Systems for repayment of loans (from a revolving fund) for KVIP latrines by householders, and franchising of public latrines to contractors, were developed. High default rates were discovered, but both systems have the potential of replication in other towns if cost recovery can be improved.

The mentioned changes in the KSP increased the scope of the project. Tendering of the simplified sewerage system was delayed by 6-8 months. The increase in project scope and the delay in the tendering of the simplified sewerage system has resulted in the project being behind schedule by more than one year. Construction of the simplified sewerage system is unlikely to be completed before mid summer 1993. Therefore, project assessment and evaluation of management, operation and maintenance, financial arrangements and franchising methods cannot be assessed at this time since many of the key issues related to sustainability have not yet been established. Thus conclusion on key project issues are not likely to be available before 1994.

The project has shown under-expenditure as a result of delays. Current budgets should be adequate for the completion of remaining physical activities including 100 KVIPs, public toilets and the simplified sewerage system. However, additional funds would be required for backstopping and technical assistance if the project is to be extended.

Improved management to ensure that payments are made on time is necessary for the sustainability of the sanitation project.

Recommendations were made for an extension of the project for a further two years Without the extension the project its input and achievement to date is at risk of being lost. KSP has yet to demonstrate sustainability and to prove viable, but if successful, which is possible, its impact could be tremendous and far-reaching.

Training Network Centre

The output of the Training Network Centre (TNC) was considerably reduced because it proved impossible to recruit suitable qualified and experienced staff.

TNC had been suitably integrated into local infrastructure. The position of the TNC within the Department of Civil Engineering at UST is confirmed.

The TNC staff require much more exposure to low-cost rural water and sanitation programmes.

The TNC has prepared some training material, run fifteen courses/workshops and made a start with the development of an information and communication unit.

Management at the TNC has been weak. Insufficient effort has been devoted to programming staff time, to networking with other agencies in the sector, and to forward planning.

The TNC is effectively between 12 to 24 months behind original time schedule because it was impossible to recruit experienced staff. Inexperienced staff had to be recruited and trained. In the short term, this was a setback for the project, but in the long term, this may actually turn out to be the best possible foundation for establishing a homogeneous and sustainable training centre.

The TNC is likely to collapse it project is not extended. With an extension, the centre has a good chance of fulfilling its role in the training of trainers in the development of low cost water supplies and sanitation in urban and rural areas in Ghana. However, additional funds would be required for backstopping, some equipment and for technical assistance if the project is to be extended.

Recommendations for extension.

The mission recommends that the project is extended for two more years. The project is important, appropriate and a valuable contribution towards developing needed ideas and strategies for urban sanitation. It is essential that the unfinished activities are completed and lessons learned are collected and analysed for the KSP project. The TNC require more time to establish itself before it can operate without outside support. For the extension, an estimated additional US $ 410 000,- would be required mainly to cover essential backstopping support and a final evaluation of the project.

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LIST OF APPENDICES

CURRENCY

Currency Unit : Cedi

US $ 1.00 = 380 Cedis (January 1992)

ACROMYMS AND ABBRIVATIONS

CBD	Central Business District
CDR	Committee of the Defence of the Revolution
CLS	Cleansing Department of MOH
DCD	Department of Community Development (MLG)
GWSC	Ghana Water and Sewerage Corporation
HED	Health Education Division
IBRD	International Dank for Reconstruction and Development
KMA	Kumasi Metropolitan Assembly
KSP	Kumasi Sanitation Project
KVIP	Kumasi-type Ventilated Improved Pit Latrine
MOH	Medical Officer of Health, KMA
MED	Metropolitan Engineers Department
ODA	Overseas Development Agency of the British Government
PHIL	Public Health Inspectorate Division
PWD	Public Works Department
RWSG	UNDP/World Bank Regional Water and Sanitation Group
SSP	Strategic Sanitation Plan
TNC	Training Network Centre, UST
UNDP	United Nations Development Programme
UST	University of Science and Technology
WC	Water Closet
WMD	Waste Management Department, KMA
WTD	Willingness to pay for Improved Sanitation Services

REPORT ON KUMASI SANITATION PROJECT

I. PROJECT CONCEPT AND DESIGN

Institutional arrangements:

The Project document was discussed with relevant parties before it was finalised. The institutions involved in the discussion and preparation of the project document included:

UNDP

Regional Water Supply and Sanitation Group, World Bank

Ministry of Finance and Economic Planning

Ministry of Local Government

Ghana Water and Sewerage Corporation

Kumasi Metropolitan Assembly

The institutional arrangements for the KSP project were appropriate..

Macro-economic relevance:

Most of the urban areas had previously tried to implement sewerage schemes based on conventional systems but these have mostly been abandoned due to lack of finance. As a result, sanitation in the urban areas had deteriorated and the sanitary conditions were poor and inadequate. Many urban areas were also served by the unhygienic pan-latrines. The Government has therefore been searching for solutions to improve sanitation in the urban areas at affordable costs. The need for finding solutions to this problem has high priority as clearly expressed by officials in government ministries.

The KSP project aims at testing new strategies for resolving sanitation issues in urban areas. The project was, and is appropriate and justifiable.

Links to other sources of external assistance

ODA is providing assistance to KMA covering Health Education and Solid Waste Management. The ODA supported activities were well coordinated with the KSP and strengthened the pilot project benefiting both projects and KMA in particular.

II. PROJECT DOCUMENT

Project Preparation:

We were informed that the project document was drafted with the assistance on the RWSG-WA and was extensively discussed with relevant agencies in the Water and Sanitation Sector in Ghana.

Description of Problem to be Solved:

The project document clearly described the sanitation problems in the City of Kumasi. The description reflects the problems which Kumasi City has to resolve.

Project objectives:

The project document divided the project objectives in two: a) Development objective and b) Immediate objectives.

A: Development Objective:

> *The project will support one of the Government's basic development objectives of improving the health and standard of living of the people of Ghana by providing affordable and cost-effective sanitation facilities through improved implementation strategies that strengthen the planning and management capabilities of the concerned agencies.*

It is surprising that the objective does not mention sustainable development. This, in addition to the high cost of conventional water-borne sanitation, has been one of the main causes of the deterioration of the sector.

B: Immediate objectives:

1: *Develop and implement a pilot human waste management project for as area in Kumasi City.*

1: *Ensure replication of the pilot project results, through the preparation of a follow-up sanitation program in Kumasi and identification of the resources required to implement it.*

3: *Strengthen local capacity to plan , design and implement urban sanitation projects, making such projects more effective in attracting and utilizing investments.*

The immediate objective 1, is hardly an objective, but rather an activity. The anticipated results from the pilot project should have been covered by the objective.

The second immediate objective assumes that the project results will be positive and replicable. This objective would not become relevant until the pilot project could demonstrate viable and sustainable solutions to replicate in future development. It the second objective did not rest until conclusive results were gained from the pilot project, what would then have been the purpose of the pilot project?

Since KSP is a pilot project and not a demonstration project, the lessons learned from the project should be of importance and both viable and non-viable results are important to record, disseminate and use in future programmes so as to lead the development onto a viable and sustainable platform.

Project Risks:

Project risks were recognised in the project document. These included problems with providing adequate government inputs, delays in fielding UN project personnel and lack of funds for internal plumbing to connect beneficiaries to the proposed sewerage project.

The project document did not address the fact that the project was a pilot project. As such, solutions to many problems should be found as a part of the project itself. This could mean that lessons learned and findings gained, during the implementation, could result in changed strategies and approaches. Possible changes and modifications in the project design should have been allowed for as a potential risk for project delays.

Presentation of Alternative Solutions:

The analysis of alternative solutions for sanitation in Kumasi was part of the project itself and thus was not covered in detail in the project document. The proposed Feasibility Study for Kumasi should address alternative solutions.

Coordination and Institutional Arrangements:

The existing institutional framework of the project was recognized. The project document included description of the different roles that the different agencies were expected to play.

Beneficiaries:

The project's beneficiaries were described to be the residents in the project areas where the pilot activities were to be carries out, approximately 200 households. Other beneficiaries mentioned were: Staff from KMA, officers of MOH, MLG, GWSC and other municipalities and local consultants.

Role of Women:

The role of women was not specifically highlighted in the project document. The project aimed at developing sustainable management structures within the municipality, and testing viabilities of alternative forms of improved, low cost sanitation services. As such, the role of women were not expected to be singled out for special attention.

Verifiable Objectives and Outputs:

The project document presented a clear list of project objectives and activities. Each of the stated objectives were followed by expected outputs and a detailed list of activities needed to achieve the outputs.

The project document did not include quantifiable verifiers or milestones which could be used to measure progress directly against the objectives. The listed activities and outputs could not be used to measure degree of success in achieving the objectives.

Sustainability:

The project document did not mention sustainability as part of the objectives. However, one of the objectives of the project was to "Ensure replication of project results.. .." This objective could be read as assuming positive results from the pilot project which would justify replication but this was not stated in the document.

The issue of sustainability was mentioned in the position paper by UNDP GHA/87/016 prepared for the tripartite review in September 1991 and in the Terms of Reference for this Evaluation, where assessment of sustainability was emphasised .

Project Monitoring:

The project document described reporting requirements for progress and completion reports. Work plans were to be revised annually prior to the tripartite review meetings.

Project duration or schedule

The original project period of three years was reasonable for the original project content. However, the initial baseline study indicated that the project should be changed to address the local needs. The time schedule for the revised and increased project content as agreed on in the tripartite review meeting in 1990, was over optimistic.

The project schedule would better fit for a demonstration project where proven management arrangements and tested technologies were to be demonstrated. Although the technologies to be used had been tried out previously, the proposed management structures and financial arrangements for cost recovery had not been tried out. The project design did not allow for unexpected findings which could change project progress.

Project Relevance:

The project is still as relevant today as it was three years ago. The approach adopted is in line with government policies and objectives for the sector. If the KSP can find sustainable and viable solutions for improved sanitation in urban areas, the impact could be large.

Many projects have previously tried to find solutions to urban and peri-urban sanitation, but with little success. The difficulties have largely been associated with inability to develop sustainable management and to find affordable, and financial viable solutions

Appropriateness of Execution Arrangements:

The execution arrangements for the Kumasi Sanitation Project was good. The UNDP/World Bank has brought important expertise and experience from other countries into the project. The RWSG/ World Bank provided essential back-stopping and guidance for baseline surveys, willingness-to-pay study and design of management and physical structures which the project clearly has benefited from.

III. IMPLEMENTATION

General description of project event.

Original project scope:

The original project document emphasized construction of a simplified sewerage system estimated to cost about US $ 50 000 and the construction of 6-8 ventilated improved pit latrines for demonstration purposes. The mentioned activities were to be financed by local funds while UNDP were to provide technical assistance, equipment, transport and back-stopping.

Study that changed project content of physical scale:

After the start up of the project, the executing agency brought in an expert group from the World Bank, Washington, to assist in financing and in implementing a baseline study for Kumasi, which included willingness-to-pay analysis for Kumasi City. The results from this study indicated that household and public toilets/latrines were needed. 40% of the population were found to use public latrines as the only form of sanitation. The above lead to a re-orientation of the project content away from waterborne sanitation towards non-waterborne sanitation. The project objectives were therefore revised in 1990 to include:

- household latrines construction (200 units in three pilot areas)
- public toilets construction
- simplified sewerage scheme (for 20000 people).

Since the original budget allocation for on-site sanitation only covered financing of about 8-10 KVIPs for demonstration purposes, the original budget provision for construction of a waterborne system was decided to be used for household latrines and public toilets, since this type of sanitation appeared more appropriate. This left the project without finance for the simplified sewerage system. UNDP agreed during the tripartite review in 1990 to provide an additional US$ 423,221 so that waterborne sewerage also could be implemented and tested since this technology appeared most appropriate form of sanitation in the business centre on Kumasi.

The above changes, changed the implementation schedule as well as increased project activities. Instead of constructing 6 to 8 KIVPs the number was increased to about 200. By the end of the project period, about 100 KVIPs had been constructed and the remaining 100 was assumed to be completed before the end of 1992.

After the inclusion of the public toilet construction in 1990, a design was prepared for construction of one large public toilet, near the market. However, it was later discovered that the complaints were made about the location of the toilet. Instead of finding one new site, three alternative sites were found of which two had old public toilets which needed rehabilitation. The change in plans made it necessary to redesign the public toilets which resulted in about four months delay. The construction of the public toilets is in progress and they are expected to be completed at the end of March 1992.

As mentioned earlier, the simplified sewerage system was originally included in the project. It was planned to be designed in 1989 with start of construction in January 1990. But after it was discovered that the need for on-site sanitation (KVIPs) and public toilets were higher than for waterborne sanitation, the simplified sewerage system was, for a while, dropped. It was reintroduced

in 1990 after UNDP found additional finance of more than US $ 400 000.-. The experimental sewerage component was increased by a factor of about 8 compared to the original budget. The design was then started in 1990 with construction scheduled for mid 1991. However, the project management experienced problems in following the World Bank tendering procedures. Tenders had to be reissued and the construction was effectively delayed by 6 to 8 months. This delay was unnecessary.

Currently, the start of the construction of the simplified sewerage system is scheduled for July/ August 1992, with an expected 12 months construction period. This means that the simplified sewerage system will not be in place before August 1993. The operation and maintenance system to be set up can not be assessed until some months after the scheme has been put into use.

Training:

In addition to the activities mentioned above, a workshop was held to start the project. Shortly after the workshop the baseline study and the willingness-to-pay study was conducted. Staff from KMA-KSP and from TNC were involved in the field work for this study.

Change in project plans:

A feasibility study was originally planned implemented at the start of the project. This was never completed. It was replaced with a Sanitation Strategic Plan for the whole City of Kumasi (SSP) The work on the plan started in 1990 and it was close to completion in February 1992.

Infrastructure development at KMA.

During the course of the project, KSP proposed a reorganisation waste management within KMA, and a new Waste Management Department was established in late 1991.

Establishment of revolving fund:

The project has also developed and established a revolving fund for house owners who want to have a KVIP. This fund was established using project (UNDP) funds and all KVIPs have been built with assistance from the fund.

New procedures for contracting construction of KVIPs:

KSP have also developed contractual procedures for lumping together 5 to 10 KVIPs so that small local contractors can tender for the work. This procedure is well tested.

Franchising of operation and maintenance of public toilets.

The project has developed tenders and procedures for franchising operation and maintenance of public toilets. The contractors will collect a charge from the users and the contractor who offers to repay KMA, the highest amount, receives the contract.

Accounting procedures established :

KSP has opened two separate accounts through an agreement with KMA; One account is for the public latrines into which the contractors pay their fees under franchise agreement for the running and maintenance of the public facilities. The other account covers repayment to revolving fund for home latrine . The signatories to both accounts include the District Secretary.

This arrangement is considered satisfactory, but it requires strong administrative back-up and monitoring.

Equipment:

The two vehicles, two motorbikes and two PCs were procured for the project. The equipment procured was appropriate and necessary for implementing the project. The equipment can be sustained locally.

Quality and Timeliness of Inputs:

In general, the project inputs have been timely. The executing agency has provided equipment, transport and assistance in line with the project document. Back-stopping provided by the RWSG/ World Bank has been good.

The baseline study was very comprehensive and appropriate. The following re-orientation was also appropriate, necessary and justifiable. We appreciate that this caused re-scheduling and delays of activities as compared to the original concepts. However, the change strengthened the project approach tremendously.

It is commendable that the project management responded so well to the discovered needs in the pilot area and took appropriate and corrective actions.

KMA provided staff to the project as planned and provided physical facilities as expected. At the beginning of the project, some problems and delays were experienced the first year with release of local funds by the Government. This was resolved and no other problems were mentioned after that..

Financial issues:

The figures on page 12 have been included to show how the changes in the project content and schedules also have affected the UNDP budgets and expenditures.

Figure 1 shows the budgets as included in the original project document (original), and in the subsequent budget revisions "D" in 1990 (Rev.D.90), and revision "F"(Rev.F,91) signed in 1991.

Figure 3 reflects the change in total project budget. The increase in the budget in Revision F in 1991, reflects increased allocations to reintroduce the simplified sewerage system.

In spite of these delays, the costs have not been significantly increased in UNDP financed components for implementation of physical facilities. The latest revised budget (Figure 2) has taken account of the need for the project to be extended.

As expected, Figure 1 shows that, compared to the original budget plan, there has been under-expenditure by the project.

For the KSP project the unutilized funds now stand at 430,000 US Dollars and the estimated cost of the simplified sewerage project is US$ 423,221

The project management holds the opinion that the budget is adequate for completion of construction of KVIPs, public toilets and the simplified sewerage system. This may be correct it the implementation of simplified sewerage system runs smoothly. However, problems may occur, which could require additional finance particularly for unforeseen problems with house connections and with crossing railway line with the sewer.

Acceptance of project approach:

The different target beneficiaries have responded well to the project.

- The people have accepted the KVIP technology as desirable on-site sanitation facilities
- The people accept payment for the use of public toilet/latrines
- KMA has believed in the project approach and demonstrated that through reorganizing a Waste Management Department as recommended by the project
- KMA has already provided 40 million cedis in the current budget, for continuation of on-site latrine construction, using the revolving fund mechanism
- KMA and the Government have seen and accepted the potential advantages of franchising operation and maintenance of public toilets
- We were informed that KMA has made about 190 conservancy labourers

Note that figures below covers budgets and expenditures for <u>both</u> KSP and TNC.

Figure 1 **Changes in project budget as project progressed**

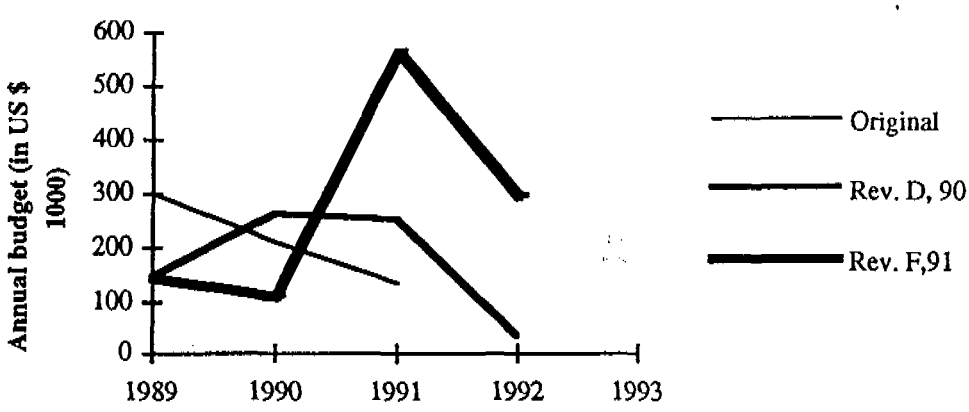


Figure 2 **Latest budget and expenditure figures .**
(expenditures, 89-91, budget 92-94)

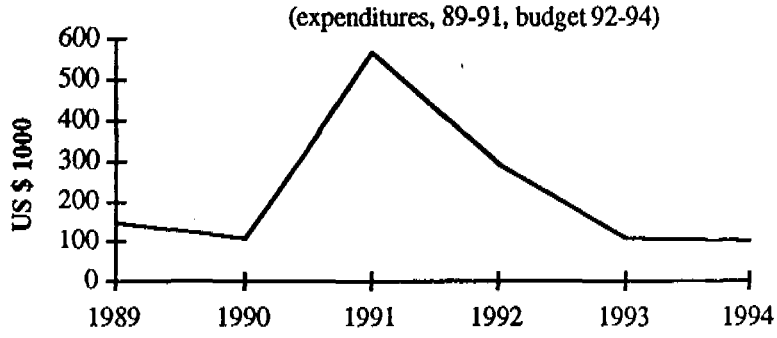
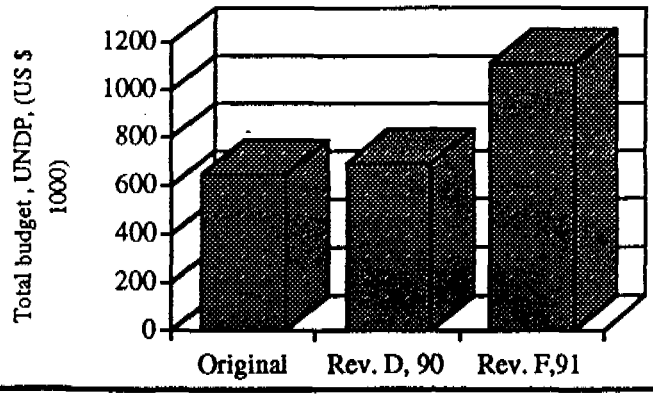


Figure 3 **Changes is total project budget as project progressed.**



redundant. These are now working as private contractors and are paid directly by the users.

It is premature to state that user fees and loan repayments made, during the project will be utilized as government or private inputs to maintain and expand the sanitation system established.

The Efficiency and Effectiveness of the Management as a whole and KSP Component:

The project management has generally adjusted the content of the project well, to suit the needs and requirements for sanitation in Kumasi.

The management has demonstrated innovative thinking and shown initiatives and presented ideas which have made this project much better than the original design . The delays in appointment of a contractor for the sewerage scheme, should and could have been avoided by the implementing agency.

The present management should handle the project to the end of the current project period. For the completion of all components after March 1992, the trained KMA staff currently working on the KSP should be able to supervise and monitor completions. However, since there still are many managerial, procedural and financial issues outstanding, further back-stopping is necessary.

Quality and Timeliness of Monitoring and Back-stopping by all Parties to the Project:

Monitoring of the project has been carried out as follows:

1. Daily by Project Staff (KSP)
2. Monthly report to UNDP/World Bank
3. Regular site visits from UNDP, RWSG, Accra
4. Tripartite Review Meetings
5. Regular site visits by senior KMA staff.

The frequency of monitoring has been adequate. The reporting has been regular and follow-up actions have been taken.

However, the reports have, invariably, not given the true state of affairs with regard to project progress. On this issue, they have been over-optimistic. From their reports, the project has been on schedule, which in our assessment is not the case.

The Inter-relationship in Project Delivery between Government (Local and Central), UNDP, and World Bank:

The parties to the project as constituted now are as follow:

1. UNDP - Funding Agency
2. World Bank - Executing Agency
3. Government of Ghana represented by Ministry of Finance and Economic Planning as the coordinating ministry and Ministry of Local Government as the line ministry
4. Kumasi Metropolitan Assembly

5. The Kumasi Sanitation Project.

The mission found that all problems have been resolved to the extent possible by these agencies without necessarily resorting to formal meetings. This indicates the high degree of cooperation and effective coordination supported by all parties.

Staffing the project:

The project has in the main been implemented by local staff and this is commendable. There has been no staff turnover during the project period.

Activities and issues not completed:

On-site KVIPs:

Complete construction of approximately 100 KVIPs

Modify revolving fund methodology and cash collection system in particular

Assess viability of on-site KVIPs for scaling up system

Public toilets:

Complete construction of all three units

Franchise operation and maintenance of public toilets and follow up that agreements are adhered to.

Assess viability of franchising of public toilets, concerning operation and maintenance standards, financial arrangements and contractual procedures

Simplified sewerage system:

Construct sewerage system

Establish operation and maintenance system and resolve who should be responsible for the operation and maintenance

Establish mechanism so that houses install WCs and connect to the sewer

Develop and implement a revenue collection system and tariff structure for connection fees and monthly charges.

Assess viability and sustainability of simplified sewerage system

Strategic Sanitation Plan

Plan to be finalised when clear conclusions are available and viable systems have been demonstrated.

IV. RESULTS

A. OUTPUTS

In the project revision "F", signed in July 1991, the project objectives and outputs were revised. The changes made - are generally sound as changes should be expected in any pilot project. It shows that lessons learned during the project have been recognized and incorporated into the project document.

Output 1.1:

Detailed workplan, progress reports and completion report.

Work plans have been prepared. However, work plans have undergone revisions throughout the project as one would have expected. The project has submitted monthly reports as required as well as timely submission of annual project progress evaluation reports. Reporting on the project has been good.

Output 1.2:

Strategic Sanitation Plan

In the original project document, a Feasibility report for the pilot project should have been produced a strategic sanitation plan for providing sanitation for the whole city of Kumasi has been drafted. It is an extremely detailed document with a proposal for a full scale sanitation implementation plan for Kumasi City.

Output 1.3:

Final design for each of the three pilot schemes within the pilot project.

The output mentioned above is included as an integral part of the Strategic Sanitation Plan.

Output 1.4:

Three completed pilot schemes in low income areas, implemented, operated, maintained and evaluated.

In the project document, the target was set to 300 home latrines extending coverage to 8000 people (16000 households). In the latest revision of the SSP, this figure has been revised downward to 200 units. The number included conversion of bucket latrines to VIP latrines.

The mission was impressed with the physical work done and the quality of the workmanship.

The completion of the latrine construction programme in the three pilot areas is behind schedule and can only be expected to be completed by the end of 1992, earliest.

The reduction in the number of latrines constructed from 300 to 200, is not of importance. The important issue in this pilot project is to find viable appropriate solutions which can be used, when tested and demonstrated, for future replication.

The construction of the home latrines should not be speeded up for the sake of producing the stated number of latrines. Emphasis should rather be given to finding appropriate technology that combined with the establishment of local infrastructure and management arrangements, can lead to a sustainable sanitation development programme for Kumasi. If the construction rate may have to be reduced in order to secure cost recovery, then, one should accept the lower rate of implementation of home VIPs even if this would slow down implementation.

It is not possible during the present project period, which ends in March 92, to make a final evaluation of the sanitation programme in the three pilot areas.

Output: Public Latrine Construction:

The inclusion of this activity is a result of the finding in the baseline survey that nearly 40% of the people in Kumasi use public toilets as the only access to sanitation facilities.

Three public toilets will be rehabilitated/constructed as part of this output.

The design and construction of these public toilets was impressive.

The public toilets are expected to be completed by the end of the project (March 92). The success or failure operation and maintenance and usage of the public toilet cannot be assessed or evaluated until after the completion of the project.

The construction of the public toilets were delayed by about 4 months. The reason was public objection to the location of the site. New designs had to be prepared for rehabilitation/construction of three public toilets instead of one larger unit as originally planned.

Output: Simplified sewer pilot project

The design of the simplified sewer project is 6 to 8 months behind schedule as mentioned earlier.

The design is completed, tender documents issued and a contractor can not be expected to be on site before July 92. The current expected completion of the sewer is mid 1993 after a 12 months construction period.

Currently, it is not possible to assess this part of the project when it comes to operation and maintenance issues, willingness to connect to the sewer, payment issues and sustainability. At this stage, it can only be stated about the sewer design is that project staff have estimated the simplified sewerage system would be about 60% of the cost of conventional designed sewers.

The work prepared by the project staff was generally of high quality, including both physical structures completed, and developing procedures for implementing the project. Given that the project staff had limited experience with this type of project, the work was well executed.

The project benefited much from the back-stopping and guidance provided. Without this back-stopping, the pilot project could not have reached the high standard found in concepts, surveys, design of new management structures and development of new ideas for franchising, contracting and privatization in the field of sanitation.

Project Delays:

The delays in the project implementation have resulted in the project not being able to demonstrate or test viability and hence sustainability of project components.

B. IMMEDIATE OBJECTIVES

The objectives for the project have also changed during the project period.

Objective No. 1:

Develop and implement a pilot human waste management project for an area in Kumasi City.

This objective has later been adjusted to cater for the development of three pilot project schemes :

- Household latrine construction
- Public latrine construction
- Simplified sewerage.

The objectives have partially been achieved.

The delays in the completion of the physical components of the project have made it impossible to meet the project objectives. The on-site latrine programme will not be complete before the end of 1992. The public toilet construction programme is scheduled to be completed by the end of March 1992 and the construction of the simplified sewer will start tentatively in August 1992.

Thus, given the above mentioned delays, it is not possible to make any conclusion on key issues such as sustainability of management structures, cost recovery system and operation and maintenance. It is premature to say that the project concept and design is viable for scaling up. Important issues remains to be resolved.

The project has so far developed a number of important activities. These include:

- Design of new organization for waste management in Kumasi City. This new Waste Management Department is now in place.
- Design and testing contracting procedures for using local contractors for construction of on-site latrines. (KVIPs).
- The project has developed and tested local infrastructures for management of on-site latrine programmes using local steering committees. A solution to default in repayment of loans is yet to be found.
- The project has developed and implemented a revolving fund system for Kumasi. The mechanisms have been tested, using project funds. Already the KMA has allocated 40 million Cedis in the current budget to continue the on-site construction programme. The revolving fund system looks promising, but needs further adjustments. The reason is that the default rate for back-payments is too high. In one area, 15% of the monthly payments were not met. In the two other pilot areas, the default rate was about 50%. There are indications that the problem is associated with the repayment collection procedures rather than with the system itself. To illustrate this, in one of the pilot areas, Moshie Zongo, the default rate for the latrines constructed during 1990, were around 42%, while for latrines constructed during 1991, the default rate increased to 68%. When the mission noticed the problem with the high rate of default, the project management was completely surprised, indicating that the repayments had not been given due attention.
- Design and testing of contracts for franchising to private contractors for the operation and maintenance of public latrines. The contracts which would be based on giving the tender to the contractor that offers the highest revenue return to KMA, is promising but it needs further refinement. The main concern is the payment of revenue from contractors. This is a management problem which needs to be resolved. While KSP was responsible for collection of the revenue from the contractors for the first 12 months, more than 80% of the due revenue was collected. After KMA was given the responsibility, the collection rate dropped to approximately 40% of due revenue.

Objective 2:

Ensure replication of the pilot project results through the preparation of a follow-up sanitation programme for Kumasi and identification of the resources required to implement it.

The Strategic Sanitation Plan (SSP) has been developed in such a manner that it will be one of the main documents for replication of KSP findings and results. The SSP combined with training, seminars and dissemination of information should form the basis for replication of the pilot project.

The Strategic Sanitation Plan (SSP) is in its final draft form. The document has been developed based on an extensive field survey for the whole of Kumasi City supported by a team from World Bank, Washington, for the baseline willingness to pay study. The SSP contains situation analysis, technology review, sanitation coverage plan, institutional arrangements and a 10-year implementation plan for providing full sanitation coverage in Kumasi.

The SSP is a most impressive document with respect to details, proposals and analysis of financial consequences.

The SSP may be valuable in securing finance for further development in Kumasi, but it is uncertain that the SSP will have the intended impact in other urban areas for the following reasons:

- the document is so voluminous that senior decision-makers will have difficulties in finding time to study the it and thus make effective commitment to its content.
- SSP should be flexible and it should be easy to adjust and update if changes are made in budgets, government policies etc. The local staff at Kumasi are unlikely be able to update the plan without calling for outside assistance. This may make the SSP outdated as soon as new policies are introduced or if significant changes occur in the rate of interest used for the financial analysis. It stands the risk of receiving the same fate as so many master plans, because it lacks flexibility and because it is too complicated to update locally.

The SSP can, however, be viewed as a very useful case study of the pilot project in Kumasi City with a detailed study for a possible investment scenario for sanitation development in Kumasi.

Objective 3:

Strengthen local capacity to plan, design and implement urban sanitation projects, making such projects, making such projects more effective in attracting and utilizing investments.

This objective has been met. Staff have been given on-the-job training by being directly involved in all project activities. In addition, staff outside KMA such as consultants have been involved in the design of project components particularly in the simplified sewer system.

All project staff are employed by KMA with the exception of the project coordinator. The staff showed clear understanding of the project, demonstrated ability to design project components, mobilize communities.

In addition, the person to take over responsibility for the project is currently in Laughborough where he is undertaking a M.Sc. degree.

Micro-Level Effects:

The project has had high impact on the micro level, particularly in two fields. There has been a high level of impact in the three pilot areas, where recipients have become aware of the benefits of the KVIP. It is clear that this form for sanitation is attractive and meeting the needs in the community. It is also appropriate technology. The KVIPs were used by both women and men, but not by children below school age. The second field of impact was observed in KMA itself. KMA could now see a way towards improving sanitation in the city while at the same time reduce the cost for the services. By using contractors and franchising of operation and maintenance, KMA could reduce staff and save on expenditures, while at the same time improving the sanitation situation through low cost affordable solutions.

In the future, assuming all project objectives are met, more communities could be covered by safe sanitation facilities, and the poor conditions observed today could be drastically improved.

C. DEVELOPMENT OBJECTIVE

On successful attainment of all the project objectives, the project could have a very large impact in all urban areas in Ghana. Over the past years, sanitation facilities have deteriorated in urban areas. The successful completion of the KSP, methods and procedures, management structures, franchising and effective use of revolving funds to maximize user contributions, could be the basis improving sanitation in the urban areas where conventional technology is unaffordable and inappropriate.

D. UNFORESEEN EFFECTS

The KSP has assisted KMA in improvement of the services of septic tank emptying. By monitoring and creating awareness of illegal "dumping" of night-soil, improving desludging services and monitoring, the revenue collected by KMA has increased dramatically with assistance from KSP staff. The revenue collected has increased 4 to 5 fold over the last six months. (see annexes)

E. SUSTAINABILITY

It is important to search for solutions that would lead to sustainable development. This has been well integrated into the project approach, much more so than envisaged in the project document. In particular, the project has addressed the issue of balancing the roles of public and private sector in a constructive manner. This coupled with the revolving fund system to facilitate for larger user contributions, could make this project approach very interesting and attractive for urban areas to embark upon.

However, due to delays in project implementation and increase in project activities, it is not possible to assess sustainability of the project approach at this stage. We know that some of the financial arrangements need to be modified. Management procedures for monitoring of cash-collection has to established and made viable for on-site sanitation facilities and for public toilets. Since the simplified sewerage system has not yet been constructed, the viability of the whole system cannot be assessed.

F. FOLLOW-UP

The KSP concludes in March 1992. The following remains to be done:

Construction of the remaining 100 KVIP pilot units should be completed. This can be done by KMA.

The cash collection system has to be modified and put in place. A cash monitoring system needs to be established within KMA to follow up so that default in repayments on the revolving fund stops. Back-stopping would be required to assist KMA staff to see that the above issues are resolved.

After the construction of the public toilets, clear routines and minimum standards for the contractors have to be worked out. The payment system for

the contractors has to be improved and a system must be put in place showing which will show how the KMA is to handle the issue of a contractor breaching the contract conditions.

The simplified sewerage system needs to be constructed. This can be supervised by a local consultant and KMA-KSP staff. However, many problems may still arise with house-connections, for instance payment of connection fees.

Operation and maintenance of the simplified sewerage system remain to be worked out. How this should be done and what role KSP, GWSC and contractors should play - remain unresolved.

Operation and maintenance also needs to be monitored to see if blockages and other maintenance problems occur as a result of reduced pipe diameters and number of manholes.

V. FINDINGS:

The Kumasi Sanitation Project, as implemented has, changed significantly from the original project document design. The project document focused mainly on construction of waterborne sanitation with a small component of on-site sanitation.

The project now, includes on-site sanitation in three pilot areas, construction/rehabilitation of 3 public toilets/latrines and construction of a simplified sewerage system. The project has also introduced privatization of sanitation activities and franchising of operation and maintenance of public toilets. The changes are appropriate, commendable, and indicative of a dynamic pilot project.

The UNDP/RWSG, Accra support has been necessary and effective.

Government and KMA support on staffing, financial inputs and logistic support have been good,.

The KSP is a pilot project and as such, unforeseen delays in project implementation should have been anticipated and allowed for in the project schedule.

The project is relevant and appropriate and in line with the aims of the government.

If the project achieves its objectives, its impact on sanitation development in urban areas can be tremendous.

Outputs:

The physical design and construction of public toilets/latrines and on-site KVIPs are appropriate and well extended.

The management structure designed and implemented in KMA for the Waste Management Department is satisfactory. It will however, take some time before the new structure is fully worked into the KMA organization.

The reporting on project activities has been regular and in compliance with reporting requirements.

The reports have however been over optimistic; for instance all progress reports indicate that project is on schedule. This is contrary to our findings.

Other Achievements:

- designed and implemented a reorganized Wastes Management Department at KMA.
- designed and implemented tender and contracting procedures for private contractors for construction of on-site KVIPs.
- designed and implemented contractual procedures for franchising operation and maintenance of public toilets.
- demonstrated KVIPs to be an acceptable and affordable sanitation solution for people in medium density areas.
- designed and tested a revolving fund for development of on-site sanitation facilities.
- the KSP has shown that privatization and franchising appear to be potentially viable methods in improving sanitation services.

Financial Issues:

Revenue payments from franchised public toilets have dropped from over 80% to just over 40% during the last 12 months.

The rate of default on the repayment of revolving fund loans for on-site latrines has increased sharply with default rates of close to 50% in two of the pilot areas. In Moshie Zongo, the default rate for latrines constructed during 1991 exceeds 65%.

Sustainability:

The above problems make the project appear unsustainable, which it currently is. The mission is of the opinion that the problem is not the inability to pay, but inadequate mechanism for cash collection. This problem should be possible resolve.

Project Schedule:

The project cannot be completed as planned. Although the project is scheduled to finish in March 1992, the construction of the simplified sewerage system will not start until August 1992, with expected completion 12 months later.

The implementation of the simplified sewerage scheme has been delayed for two reasons; the first being changes in scheduling and financing arrangements and the second being problems with following World Bank tendering procedures.

The construction of the pilot on-site latrines is expected to be completed by the end of 1992.

The construction and rehabilitation of the public toilets should be completed by the end of March 1992.

The 3-year implementation period for the original project content was reasonable. However, the initial baseline study indicated that the project should be changed. The time schedule for the revised project content as agreed to at the tripartite meeting in 1990, was over-optimistic.

Outstanding Issues:

Simplified Sewerage System:

- construction
- decide which organisation should be responsible for operation and maintenance of the sewerage system
- designing and implementing operation and maintenance system

- resolving house-connection issues, including developing financial mechanisms for house-owners to finance installations of WC's in the houses to be covered
- design and implement a revenue collection mechanism.

Public Toilets:

- monitor operation and maintenance
- review and adopt revenue collection mechanism, so that contractors comply with agreements, essential to sustainability and replication.

On-Site Construction Programme:

- monitor progress and operation and maintenance
- develop viable repayment mechanism for revolving fund.

The Strategic Planning Program is an extremely comprehensive document, containing baseline data, technology review, 10 year implementation plan for Kumasi City, as well as an analysis of financial implications.

A lot of time and effort have gone into the preparation of the SSP.

Obviously this may have affected the direct in-put of KSP personnel on KSP programmes, and caused some delays in other areas. It may well have affected the in-depth in-house monitoring of activities. Loan recovery default may be an example.

Finance and Budgets:

The approved budget has been adequate for the KSP and delays mentioned earlier have resulted in under expenditure. The outstanding balance should suffice to complete the construction activities including the simplified sewerage system. The budget is however, not adequate for technical support if the project is extended.

VI. RECOMMENDATIONS:

1. The Kumasi sanitation project must be continued until its objectives are met and sustainability can been assessed.
2. The project, and back-stopping arrangements from Accra should be extended for two years until March 1994.
3. As already arranged, the UNDP staff should withdraw from KMA at the end of the current contract period. Equipment bought by project funds should be transferred to KMA.
4. During the extension of the project, KMA staff must undertake the following:

   - manage the construction of the simplified sewerage scheme
   - decide on operation and maintenance arrangements for the simplified sewerage scheme

- design and implement a revenue collection system for the simplified sewerage scheme

- supervise and manage the construction of household (100 units) and public latrines (3 units) to completion as originally planned.

- establish viable procedures for collection of repayments for revolving fund (household latrines and possibly future household WC's and plumbing for connection to the simplified sewerage scheme).

- collect monthly repayments from revolving fund beneficiaries.

- monitor collection of revenue collection from franchised public latrines.

- prepare monthly reports for submission to RWSG, Accra, covering progress, finance, problems and lessons learned.

5. Back-stopping services from RWSG, Accra should cover the following:

- Assist and support KMA in contract management of the construction of the simplified sewerage scheme.

- Provide assistance to KMA in developing and implementing viable revenue and loan repayment systems.

- Assist in resolving problems relating to financing house connections and in-house plumbing system (revolving fund?).

- Assist KMA in negotiations on responsibilities for the operation and maintenance of simplified sewerage scheme.

- Provide technical back-stopping for organizing operation and maintenance for the simplified sewerage scheme.

- Prepare regular reports on project progress in accordance with UNDP requirements.

- Assist KMA in resolving unforeseen problems which may arise in meeting the objectives of KSP.

- When KSP project is close to reaching its objectives, prepare guidelines on how to replicate KSP experiences and methodologies to other urban areas.

Strategic Sanitation Plan. (SSP)

It is recommended that an abridged version of the SSP is produced for "decision-makers".

It is also recommended that guideline on how a simplified strategic sanitation plan could be developed in other municipalities, is prepared. The document should be made in close liaison with TNC for their use in training activities.

6. It is recommended that KMA establishes an inspectorate unit to monitor compliance with minimum standard of operation and maintenance of household and public latrines.

7. There should be an Ex-Post Evaluation in January 1994 covering both KSP and TNC.

8. Until the project concept has been proven sustainable, the process of replication must be cautiously pursued.

9. UNDP should continue to assist finance of KSP and RWSG, Accra, for an additional two years. The following additional finance should be budgeted for:

Support to RWSG, Accra, (KSP & TNC)	100,000.
Short term consultancies	40,000.
Ex-Post evaluation (KSP & TNC)	30,000.
Miscellaneous	10,000.
Total US $	180,000.

The above budget is excluding funds required for TNC.

VII. LESSONS LEARNED

A pilot project document should include a time schedule that allows for experimentation.

TRAINING NETWORK CENTRE

REPORT ON THE TRAINING NETWORK CENTRE

I. PROJECT CONCEPT AND DESIGN

Based on the assumption that suitably qualified and experienced staff would be available from the start, the UNDP project concept, design and institutional arrangements for the TNC were appropriate at the time they were approved.

Relevant micro economic policy frameworks were considered and the TNC was specifically included in national sector plans. No other sources of external assistance were utilized for the TNC.

Other than declaring the intention of establishing the Training Centre, the project did not initially concern itself with the sustainability of the TNC.

II. PROJECT DOCUMENT

We were informed that the Ministry of Finance and Economic Planning, the Ministry of Education, the Department of Community Development and the Ghana Water and Sewerage Corporation were involved in drafting the project document. Nevertheless, the document did not describe any training objective that the TNC component of the project was intended to meet.

It was assumed that the Government of Ghana would provide specified inputs and it was recognized that there was a risk that the government would be unable to fulfil its obligations. It was also recognized that there was a risk of delay in fielding of UN project personnel.

There is no evidence of consideration being given to alternative strategies to the establishment of the TNC. Institutional capabilities of the University of Science and Technology were reviewed.

The intended users of project outputs were clearly identified, but women were not specifically mentioned in the project document.

The Economic Recovery Programme II, the Government's Programme to Mitigate the Social Cost of Adjustment (PAMSCAD) and the implications for project design, were specifically outlined.

The logical framework, as set out in Section D of the project document, clearly stated in realistic and verifiable terms, the project objectives and outputs. However, no quantifiable parameters were suggested.

The project document laid down annual tripartite reviews, a project terminal report, and evaluation six months prior to termination.

A work plan was not included in the project document but a realistic and practical initial work plan was prepared in October 1989, during a visit by Dr Letitia Obeng of RWSG-WA. It was subsequently up-dated regularly.

III. PROJECT IMPLEMENTATION

Although some of the planned activities of the TNC have been undertaken, progress has not proceeded as expected due to the impossibility of recruiting suitably qualified and experienced staff. This caused a delay of not less than twelve months.

All parties were in full agreement on main issues involved in implementing the project.

Specific activities that were implemented included the following.

+++ The Training Centre was established and was provided with suitable accommodation and equipment.

+++ A senior member of the University staff was appointed as Director.

+++ After some delays, qualified but inexperienced junior staff were engaged and undertook thorough and relevant training, gaining some appropriate practical experience.

+++ Some linkages were established with relevant national training institutions.

+++ A good start was made with the modification of ITN training material and preparation of new material.

+++ Courses were run, some in collaboration with other organizations.

+++ The Centre provided some assistance to courses in the Department of Civil Engineering at UST.

+++ A Management Board was set up.

+++ Assistance was provided to KMA in the preparation of a sanitation plan for Kumasi and staff were associated with the development and implement of the Kumasi Sanitation Project.

+++ A start was made in collection, preparation and dissemination of information and training materials on low-cost technologies and their application.

Costs were within the budget and were not excessive. Effectiveness would have been increased if experienced staff had been available, but they were not.

Due to necessity, the professional staff had to be trained almost from scratch in low cost water supply and sanitation, although all had a first degree. During the training period a strategy emerged of concentrating on the production of high quality training material, which included the maximum of participatory methodology. While not particularly innovative, no other ITN Centre has had the good fortune of such a long period of gestation - most have had to engage in training quickly, initially using material that is only partially relevant.

Another strategy emerged towards the end of the project period: that the Centre should become as financially independent as possible. While it is anticipated that the Government of Ghana will continue to provide generous support of staff salaries through UST, other costs (such as those incurred when running courses away from Kumasi) will have to be covered by income from users. This is discussed further below. The strategy of self-financing is very much in line with present Government approaches and development approaches.

The Government of Ghana showed itself to be committed to the Training Network Centre by its continued financial support, particularly in the appointment of professional staff to the University faculty. The University of Science and Technology, Kumasi, generously provided office accommodation and other facilities. Other institutions, such as the Ghana Water and Sewerage Corporation and the Kumasi Metropolitan Authority, supported the Centre by membership of the Management Board at the highest level and by other means.

Implementation of the Training Centre component of the project was entirely done by national staff. They will be able to continue upon project termination, provided the project can be extended for sufficient time for their training to be completed and for self-funding mechanisms to be fully developed.

The Centre has been fortunate to have no loss of staff or adverse institutional changes during implementation. In July 1991 TNC was transferred from budget line 17 to budget line 21 to reflect a change of recruitment modality, from direct recruitment by the project, to subcontracting through the University.

While maintaining an independence necessary to concentrate on methods and low-cost technologies which diverge from UST's status as a centre of advanced technology, the Centre has been accepted into the University's academic mainstream as a part of the Department of Civil Engineering within the School of Engineering.

The day-by-day management and forward planning of the Centre appear to lack positive and imaginative direction. Little or no attention is given to cost-effectiveness of inputs.

No information was given about problems regarding the financial management of the TNC. However, it was noted that there was some reticence in discussing the disbursement of funds received for consultancy services to external agencies such as DANIDA. Apparently these are (or should be) paid into a UST 'production unit account'. This account should be readily available for checking and details of the current position of the account should be submitted regularly to the Dean and the RWSG-WA office in Accra.

Underlying the whole implementation of the project were the problems resulting from the impossibility of engaging experienced staff. These were successfully overcome (although with considerable delay in producing outputs) by engaging raw staff and training them.

Supporting expertise was provided to the TNC by the UNDP/World Bank Regional Water and Sanitation Group for West Africa (RWSG-WA) throughout the project. This comprised continuous advice and guidance. Mr Joseph Gadek of the RWSG-WA office in Accra was particularly helpful. He maintained regular contact with the project and made himself readily available for immediate assistance to deal with any problems. RWSG-WA and also RWSG-EA assisted in the training of staff. The expertise was appropriate, was acceptable to Government and successfully transferred expertise to national staff. It is likely that the Centre would have benefited by receiving advice from an external institution specializing in low-cost water and sanitation technology and software in developing countries. The model of using external institutions has proved to be valuable for the development of several other ITN Centres worldwide.

Formal training of TNC staff provided by the project was successful. The following courses were held at Kumasi:

+++ four-day workshop on preparing work plans conducted by Dr Letitia Obeng, RWSG-WA, October 1990;

+++ three-week field orientated workshop on participatory methods conducted by PROWWESS, October 1990;

+++ writers' workshop with Mrs Sue Laver, University of Harare, April 1991;

+++ one-week workshop on participatory techniques conducted by Ron Sawyer, RWSG-EA, October 1991.

The following overseas training was provided for individual members of staff:

+++ Oliver Frimpong attended short courses in Kenya and Gambia; he is employed as communication lecturer;

+++ Safuratul Muhammed-Tahiru is taking an MSc course at Imperial College, London; on her return she will be employed as lecturer in sanitation engineering.

The Director and other members of staff have undertaken a number of study tours within and outside Ghana. These have widened their experience, including establishing contact with other ITN Centres. There has been good but inadequate exposure to field work.

Equipment provided under the TNC project included two vehicles, one laptop computer and two PCs, two printers, a camera, cassette recorder, film projector, overhead projector, slide projector, video camera, photocopier and a typewriter. All were appropriate and spare parts are nationally available, or (for some computers) are held by the Accra office of RWSG-WA. All equipment is being used, or is available for use, for activities of the Centre.

Regular monitoring and evaluation was undertaken by the Training Network Centre Management Board. By its constitution the Chairman of this Board is required to be 'a person of public standing not associated with the University'. The person so appointed is an eminent banker who devotes considerable time and thought to the well-being of the Centre. Members of the Board include representatives of the Department of Civil Engineering, the School of Engineering, GWSC, the Ministries of Works and Housing, Health, Education, and Finance and Economic Planning, the Department of Community Development, UNDP and the Accra office of RWSG-WA. The Board is outstanding because of the seniority of members representing the Government, the regularity with which members attend and the concern that members obviously have in promoting the well-being of the Centre.

No in-depth external evaluations during project implementation were reported.

The tripartite reviews appear to have been both useful and effective, dealing with a large number of issues and problems relevant to the Training Network Centre. Recommendations arising from discussion have generally been implemented. An outstanding recommendation from the last meeting in July 1991 is that the UNDP project for the TNC should be extended for two years.

PROWWESS assisted in the training of staff and expressed readiness to contribute further. There has been limited collaboration with bilateral and non-government agencies. GWSC has actively used the Centre for training staff of its UNDP-funded rural water supply project. The Centre participated in the recent DANIDA mission covering water issues. There appears to be readiness by other organizations to work with the TNC and there is undoubtedly scope for much greater cooperation.

IV. PROJECT RESULTS

A. Outputs

The Training Network Centre is in operation and staff have been trained. Support has been given to KSP and to the UNDP Volta Region project. Training material has been prepared and has been used in courses and workshops of which fifteen were held. There has been an input of low-cost technology to undergraduate courses in the Department of Civil Engineering.

Considering their comparatively limited experience the quality of the staff is good; they are very enthusiastic and work together as a team. All outputs, apart from the initial establishment of the Centre and the appointment of the Director, have been delayed. One lecturer now attending a course in the UK has not yet commenced work.

The quality of the printed training material and reports is good. Manuals and training notes have included excellent drawings and have followed the advice to 'Keep it short and simple'. Non-conventional methodologies such as participatory techniques have been assimilated. However, it seems that staff may devote too much time to preparing printed notes — so-called 'publications', including quite elaborate reports of minor visits. An extreme example is the preparation of a computer-aided selection matrix for sanitation alternatives, which would have negligible practical

value and which was expected to take three months staff time. Proper management of staff time is called for.

A modest start has been made to forming a documentation and communications unit, with an over-emphasis on developing time-consuming computer retrieval techniques. Advice on this aspect of the Centre's activities should be obtained, possibly from IRC at the Hague, IRC-WD in Switzerland, IDRC in Ottawa, ENSIC at AIT Bangkok, or from the External Institution. The TNC should explore and develop lines of communication with agencies operating in the sector in Ghana, by such means as producing a regularly-published newsletter.

A long list of research topics has been drawn up. It was proposed that these should be offered to members of the University (not TNC staff) to undertake under contract. The nature of the topics does not appear to be particularly relevant to the Centre's proposed training, nor is attention to be given to training of TNC staff or to development of TNC staff interests. It is not clear why this expenditure should be covered by the project.

There is a need for more vigorous marketing of the TNC to promote use of the Centre for training throughout the sector. It might be beneficial, by the introduction of new ideas and providing a fresh impetus, if the appointment of Director were of limited duration. This is a common practice in University administration; for example the office of Dean at UST is held for three years.

So far little has been done to assist staff at other training institutions to incorporate low-cost water and sanitation materials into their curricula.

B. Immediate Objectives

The objective of establishing the Training Network Centre has been achieved, but it is not yet sustainable and is some way from achieving its full potential. However, this potential is good, given the quality and enthusiasm of the new members of staff and the training they have received or will receive. Provided the project is continued and the Centre has more aggressive and outward-looking management, a valuable, sustainable and effective Centre should be attained within the foreseeable future.

At the micro-level the University has gained a Centre which has potential to enhance the reputation of UST for involvement in improving the health and well-being of low-income Ghanaians. The staff have developed skills and knowledge accompanied by the benefits of working in a team and considerable job-satisfaction. Provided the Centre continues its growth and increases its outreach the potential benefits to the University will be realized and the staff will benefit in terms of career development.

C. Development Objectives

When the Training Centre reaches its full potential (i.e., with UNDP support for two further years and outward-looking direction) it is likely to create and strengthen an awareness of low-cost technology and its application through community management with beneficial effects on the water and sanitation sector throughout the country.

D. Unforeseen Effects

The project document did not foresee the development of training material incorporating good graphics, a training methodology slanted towards participatory techniques and a training emphasis on the role of women. All these have been positively included in the training of the staff and in other

outputs. The delay in building up an effective staff team has been regarded as detrimental, but in the long run is likely to be beneficial, providing the project can be extended for at least another two years.

E. Sustainability

The Training Centre and its professional staff have been integrated into the University structure, office accommodation and facilities have been provided and payment of recurrent costs have been accepted by the Government of Ghana.

Nevertheless, other costs need to be covered by income from non-government sources, so development of a clientele of user agencies has to be fostered. The need for outside 'consultancy' (which largely consists of payment for undertaking training for outside bodies) is accepted by the Centre as a prerequisite for sustainability. Non-government income is necessary to retain good quality staff because of the low level of University salaries. However, we were not told of any plans for 'selling' the Centre to possible clients. We observed little interest in forward planning.

F. Follow-up

The project should be extended for at least another two years, during which time the Centre should increase its ability to serve the sector by further training of staff, by production of more training material and by providing a greater range of courses for other institutions. During this period the back-up of the Accra office of RWSG-WA could be crucial.

The designation of an External Institution with proven experience of training in low-cost technology and management for developing countries would be beneficial. Activities of this Institution should include:

+++ by regular visits, correspondence and other means provide continuous advice to the Centre, particularly regarding setting and achieving targets, and developing outgoing policies;

+++ assisting in the planning and delivery of courses and workshops, particularly by providing expertise in topics with which TNC staff are unfamiliar; and

+++ assist in the planning and implementation of staff training and career development, and in setting up an effective documentation and communication unit.

To enable the Centre to fulfil its potential the staff should be strengthened by the appointment to the University of the graphic artist now attached on national service. This will maintain the high quality of training material. A female lecturer with an anthropology, community development or social science background should also be appointed to concentrate on socio-economic, cultural, community and gender issues. These issues are inadequately covered at present.

During the next two years all staff should be further trained, with emphasis on topics such as the following.

+++ Just as the Kumasi Sanitation Project has provided a workshop for the study of the technology and management of urban sanitation, rural projects should be identified for familiarizing staff with all aspects of rural water supply and sanitation. If possible these projects should be near at hand so that they can be regularly visited without overnight absence from Kumasi.

+++ Everything possible should be done to benefit from "grassroot workers", with a realization that appropriate technology can often be better learned from comparatively uneducated people than from the most sophisticated research techniques.

+++ Guidance is needed in assessing training needs and adapting training material, programmes and methods to suit the requirements of trainees.

It is essential that the Centre should greatly extend its outreach to government and non-government (including bilateral) agencies by more vigorous management initiative. A major effort should be made immediately to establish collaborative liaison with all other institutions undertaking training in the sector and with all agencies who are involved, or are likely to be involved, in delivering low-cost water and sanitation services.

In most aspects of the Centre's implementation the management appears to lack drive and initiative. Even though the staff are well motivated and working hard, staff time utilization is uncontrolled with vague targets and no apparent sense of urgency. This does not mean that the staff are not working hard Extension of the Centre's activities is neither planned nor pursued vigorously.

Consideration should therefore be given to limiting the appointment of Director to a fixed term so as to instil fresh ideas and fresh approaches. The desirable qualities of the Director are motivation to provide training in low-cost technology and software, and vigorous managerial and marketing skills. Academic achievements need low priority. There might be advantage in considering a manager from outside the University system for the next appointment, using this as a training period for younger members of staff to be groomed for future leadership.

V. FINDINGS — TRAINING NETWORK CENTRE

1. The establishment of the Training Centre is in line with government sector policies.

2. Government, UST, UNDP and RWSG-WA have fully supported the Centre.

3. The Centre has benefited from the support and recommendations of a Management Board and the Tripartite Reviews.

4. The Training Centre has belatedly become firmly established with a good but as yet inexperienced staff team whose training is being pursued. An initial delay (effectively nearly two years) was due to the impossibility of appointing suitable qualified and experienced staff.

5. Training methods and good quality training material are being developed, and a start has been made with the formation of a documentation and communications unit. The staff effort devoted to these activities is excessive

in relation to the output, and there is a need for planning, targeting and control of staff time.

6. The Centre would benefit from greater staff exposure to practical low-cost water supply and sanitation situations.

7. The inputs to the Training Centre by UNDP, the World Bank and Government have been justified.

8. It has been shown that a lengthy preparation period is necessary if a new venture of this kind is to be established on a sound basis.

9. A major weakness is in management, with an absence of targets for performance, little forward planning and insufficient attention to collaboration with other agencies in the sector.

VI. RECOMMENDATIONS — TRAINING NETWORK CENTRE

1. UNDP should extend the project in relation to the Training Centre for at least two years. During this time the Centre should develop into an effective unit providing and coordinating training and information exchange in low-cost technology and appropriate software for all agencies in the sector in Ghana. By the end of the project it should earn sufficient income from course fees and similar means to continue without further direct financial backup from UNDP.

2. The Government and UST should continue to support the Centre as hitherto but with such increased funding as is necessary to cover the salaries and expenses (at normal government rates) of additional staff appointed with the approval of the Management Board.

3. Back-up should continue to be provided to the Centre by RWSG-WA Accra by assisting in resolving management problems, by preparing regular reports on project progress in accordance with UNDP requirements, and by other appropriate assistance.

4. An External Institution should be appointed and funded by UNDP and/or other donor to provide academic and managerial advice and assistance under a linking arrangement.

5. The management of the Centre should be invigorated by fixing the term of office of the Director at three years (as for the Dean), by appointing a new Director with managerial skills and by providing necessary administrative support to the Director.

6. Two new members of staff (the graphic artist and a female lecturer to concentrate on socio-economic, cultural, community and gender issues)

should be appointed.

7. Local low-cost rural water supply and sanitation projects should be identified to give staff exposure to field conditions.

8. The Centre should increase its production of high quality teaching material, but staff time input for this should be restricted by setting targets and by rigorous control.

9. Advice should be obtained regarding time-effective expansion of the documentation and communication unit. Communication with and between sector agencies should be fostered by such means as regularly published sector information.

10. Strenuous efforts should be made to extend the Centre's outreach by developing collaborative links with other sector agencies.

11. The "production unit account" for funds received from non-government agencies should be available for review at each meeting of the Management Board

12. Funds for applied research should be provided to TNC staff to investigate problems relevant to their training functions and to assist in developing their knowledge and skills.

13. High priority must be given to delivery of appropriate training for the sector, using visiting lecturers in such a way that TNC staff increase their experience and exposure.

14. In addition to allocations for RWSG-WA, Accra (US$100000), and for the ex-post evaluation (US$30 000), which have been proposed in connection with recommendations for the Kumasi Sanitation Project, the following additional finance should be provided by UNDP for the Centre during the two year extension of the project.

Administrative support personnel	1 000
Official travel	4 000
Mission costs	5 000
UST contract for TNC	25 000
Local workshops	25 000
Equipment	30 000
Graphic artist	10 000
PROWWESS personnel (female lecturer)	10 000
Applied research	10 000
O&M of equipment and sundries	12 000

PROJECT TOTAL	US$	132 000

In addition the cost of support by an External Institution is likely to be upwards of US$ 50 000, depending on the input.

VII. LESSONS LEARNED

Government salaries are not attractive for experienced professionals in Ghana. However, given the support of the government and the parent institution, a training centre associated with the International Training Network can be established with able but inexperienced staff. Guidance, particularly regarding the methodology of training in low-cost technology, should be provided as soon as staff are appointed.

Vigorous management is essential and the motivation should be to develop a training system appropriate for training trainers of "grassroot workers", rather than concern with academic issues. Continuous external monitoring and back-up (preferably from those involved in similar training activities) should be provided from the start.

LIST OF APPENDICES

APPENDIX 1

TERMS OF REFERENCE

GOVERNMENT OF GHANA

•

UNITED NATIONS DEVELOPMENT PROGRAMME

•

WORLD BANK

T E R M S O F R E F E R E N C E

JOINT PROJECT EVALUATION MISSION

Country	:	REPUBLIC OF GHANA
Project Number	:	GHA/87/016/F/01/42
Project Title	:	Low Cost Human Wastes Management - Kumasi Pilot Project

November 1991

A. BACKGROUND -

A.1 The project document for GHA/87/016: Low Cost Human Wastes Management - Pilot Project for Kumasi was signed in December 1988 with a total budget of USD 644,100. The project became operational in April 1989 with two primary components: the Kumasi Sanitation Project and the Training Network Center for Water and Waste Management.

A.2 The Kumasi Sanitation Project (KSP) has operated within the institutional framework of the Kumasi Metropolitan Assembly. The KSP component was in the first place to introduce an integrated approach to urban sanitation (human wastes) and develop a replicable model for urban wastes management systems, using a part of the Kumasi City as a pilot area. Various implementation approaches were perceived to be examined including the roles of the public sector, private sector, and communities in the construction and maintenance of these systems.

A.3 The second component of the Low Cost Human Wastes Management Project is based within the University of Science and Technology's Department of Civil Engineering. The Training Network Center (for Water and Waste Management) in Kumasi was established in March 1989 in collaboration with the global efforts of the International Training Network as an integral part of the 1980's International Drinking Water Supply and Sanitation Decade.

A.4 The original project document contained four Immediate Objectives, namely:

1. Develop and implement a pilot human wastes management project for an area in Kumasi City
2. Ensure replication of the pilot results through the preparation of a follow-up sanitation program in Kumasi and identification of the resources required to implement it
3. Strengthen local capacity to plan, design and implement urban sanitation projects
4. Establish the Training Network Center at the University of Science and Technology.

A.5 Early on in the project it was decided that on-site sanitation solutions were required more urgently than the waterborne option originally envisaged in the project document, and funds for construction were reallocated accordingly. At the first TPR held in June 1990 it was however agreed to increase UNDP funding to allow for the piloting of an appropriate waterborne technology. A major revision based on this decision was signed in June 1991, providing an additional USD 423,000. Objective one was recast as follows:

> Develop and implement a pilot human wastes management project, consisting of three pilot schemes, in Kumasi City. The three pilot schemes are:
>
> - household latrine construction scheme
> - public latrine construction scheme
> - simplified sewerage scheme

B. SCOPE OF THE EVALUATION

B.1 The original project document scheduled an evaluation of the project to be undertaken six months prior to the scheduled termination date. Given that the project was originally to end in April 1992, the Tripartite Project Review Meeting held on 12 September 1991 decided to hold this evaluation by end 1991. The findings and recommendations will be used by the government and UNDP in discussing further assistance to the Training Network Center (TNC) and again by government in determining how to replicate the Kumasi Sanitation Project to cover other secondary centers.

B.2 This joint evaluation mission shall therefore:

1. Assess the soundness and appropriateness of the project design for realising the project's development objective in a sustainable manner

2. Assess the effectiveness of the project in realising its immediate objectives and the extent to which it has assisted the government in the development of improved implementation strategies that strengthen the planning and management capabilities of agencies in the field of low cost water and sanitation.

3. Detail the project successes and deficiencies, and identify the major factors that have facilitated or inhibited the achievement of the intended outputs.

4. Assess and recommend how the positive aspects of both the Kumasi Sanitation Project (KSP) and the Training Network Center (TNC) components be better institutionalised, expanded and replicated.

C. ISSUES TO BE COVERED -

C.1 Of the four objectives originally proposed in the project document, three were detailed around the KSP project component, whereas the fourth objective stated that the TNC should be established. The following list of issues should be considered carefully recognizing that the project design does indeed have two somewhat discrete components to it.

C.2 Project Concept and Design -

The evaluation mission should review, assess and report on:

- The continued relevance of the project's immediate and long-term development objectives to government priorities

- The project approach in resolving the identified problems.

  - Where could progress have been better achieved if changes in the project design had been foreseen?
  - Was the issue of sustainability of TNC after project completion adequately addressed in the project design?

- The number and coherence among the four project objectives.

  - Were the objectives and outputs clearly stated and are they verifiable?

- The project's work plan process.

- The appropriateness of the execution arrangements.

  - Was the arrangement of project execution by the World Bank appropriate. Would government execution have been a more appropriate arrangement?

C.3 Implementation -

The evaluation mission should review, assess and report on:

- Quality and timeliness of the inputs;

  - Can the KSP be completed within the current level of UNDP inputs, as stipulated in revision 'F'.
  - To what extent have the Government of Ghana and the target beneficiaries in the pilot areas in Kumasi contributed to and "believed in" this project.
  - What are the guarantees that user fees and loan repayments made under the project will be utilised as government or private inputs to maintain and expand the sanitation systems established.

- Quality and timeliness of the activities;

  - Which activities have been substantially delayed and what are the reasons for these delays?
  - Are project activities likely to be completed before the end of 1992?

- The efficiency and effectiveness of the management of the project as a whole, and of the TNC and KSP components;

  - Has project management been able to adjust to changes in the environment of the project;
  - Has project management timely and adequately addressed the issue of delay in implementation;
  - Are appropriate management arrangements in place for the remaining period of the project.

- Quality and timeliness of monitoring and backstopping by all parties to the project.

- The inter-relationship in project delivery between government (local and central), UNDP, and World Bank.

- The extent to which the government has truly committed itself to a reassessment of the institutional arrangements in order to assist in improving sector performance.

- What is the risk that the long term benefits of the TNC and KSP project components will not be realised due to institutional weaknesses.

C.4 Results -

The evaluation mission will be required to carefully document the results (positive and negative) achieved as a direct consequence of the project inputs and identify the major factors that have facilitated or inhibited the achievement of the results. The following aspects need to be addressed:

- Have the Kumasi project components (TNC and KSP) produced their intended outputs effectively and efficiently?

- What is the assessment of the quality of the outputs and how are these being utilised?

- Have the project objectives been achieved and to what extent? If the objectives have not been fully achieved when can they be expected to be achieved?

- What has been the effect on the sanitation services users in Kumasi? What has been the effect on water supply and wastes disposal sector agencies (TNC).

- What have been the effects upon the institutional arrangements in Kumasi to address environmental sanitation issues.

- To what extent are the institutional arrangements adopted by the Kumasi Metropolitan Assembly as a result of the project inputs viable in the long term and replicable to secondary cities.

- Has the issue of the long term sustainability of the Training Network Centre been sufficiently addressed.

- To what extent has the project made a consistent and sustained effort to promote the participation of women and the target beneficiaries at large in the pilot project.

- To what extent is the Strategic Sanitation Plan (SSP) as developed in Kumasi appropriate for tailoring into the Ministry of Finance and Economic Planning's (MFEP) project planning process for the revolving Public Investment Programme (PIP).

- Has the project had any unintended effects, positively of negatively, especially in the areas of:

  - donor coordination
  - level of rents payable in various parts of Kumasi

D. LESSONS LEARNED -

D.1 The Kumasi Sanitation Project is centered around the development of a Strategic Sanitation Plan (SSP) for Kumasi and the implementation of several pilot projects in order to test project design and implementation modalities. This is quite a different approach then the standard consulting engineering approach of conventional "sewerage master planning". Review this SSP process and the pilot projects approach and document the lessons learned. Likewise, with the Training Network Center, document the lessons learned in setting up a training institution geared towards addressing sector requirements in a non-conventional approach.

E. COMPOSITION OF THE MISSION -

E.1 The evaluation mission will be comprised of one member from each of the following agencies involved with the project.

- Government of Ghana
- United Nations Development Program
- World Bank

E.2 The proposed members should be professionals who have not been involved with the project to date in order to maintain an unbiased approach to the evaluation. The UNDP appointed consultant will be the mission leader.

E.3 The members of the team are to combine the following backgrounds: sanitary engineering with experience in urban sanitation projects; community management of social sector projects; training and curriculum development; institution building; and financial analysis. Experience in developing countries is a necessity. At least one person should be familiar with the mechanisms of Government of Ghana, including the PIP process.

F. TIMETABLE AND ITINERARY OF EVALUATION -

F.1 Prior to the mission, the UNDP as well as the IBRD representative should be briefed by respectively UNDP Headquarters and UNDP/IBRD Regional Water and Sanitation Group, Abidjan. This should not exceed two working days. The team leader will have a two days debriefing at UNDP Headquarters after the mission.

F.2 The evaluation mission will meet at 9:00 a.m. on Monday, February 3, 1992 at the UNDP offices in Accra, after which they will meet with the Government, UNDP, and World Bank representatives for an initial briefing. At this point the responsible agencies will entertain suggestions by the consultants for modifications to the TOR (not time period).

F.3 The mission will have two calendar weeks to conduct all field work/interviews/data collection followed by three days for draft report finalization. The evaluation mission will present their draft report to the government, UNDP, and the World Bank responsible officials on Thursday, February 20, 1992 at an agreed upon time at the UNDP offices in Accra.

F.4 The mission leader will be responsible for the drafting of the mission's report, which should be completed as far as possible before departure from Accra. The draft report should be made available to Government, IBRD and UNDP representatives in Accra. The final report should be completed and delivered to UNDP Accra by Monday, March 16, 1992. Ten copies of the final report are to be delivered to Accra.

G. CONSULTATIONS IN THE FIELD -

G.1 The evaluation mission will maintain close liaison with the UNDP Resident Representative in Accra; the concerned agencies of the Government; the Regional Water and Sanitation Group based within the World Bank resident mission in Accra and Kumasi; and counterpart staff assigned to the project.

G.2 Although the mission should feel free to discuss with the authorities concerned anything relevant to its assignment, it is not authorized to make any commitments on behalf of the UNDP or World Bank.

APPENDIX 2

ITINERARY

ITINERARY

THURSDAY, 30TH JANUARY

7.00 pm : Dr. S. Stoveland arrives in Abidjan

FRIDAY, 31TH JANUARY

9.00 am : Professor J. Pickford arrives in Abidjan

11.00 am : World Bank Regional Water & Sanitation Group, Abidjan
Mr. A. Locussol
Mr. R. Roche
Ms L. Obeng

SATURDAY, 1ST FEBRUARY

: Dr. Stoveland and Prof. Pickford travel to Accra via road

MONDAY, 3RD FEBRUARY

9:00 am : Mr. E. Quansah joins evaluation mission

10.00 am : Meeting UNDP
Deputy Res. Rep. Mr. J. Byll-Cataria
Ms. Henriette Keijzers, Programme Officer, UNDP

11.00 am : Ministry of Finance and Economic Planning (MFEP)
Mrs. M. Clarke-Kwesie
Mr. Sofu Ali-Akpajiak

2.00 pm : UNDP
Ms. Henriette Keijzers, Programme Officer

TUESDAY, 4TH FEBRUARY

10.00 am : Ministry of Local Government
Ag. Chief Director, Mr. S.Y.M. Zanu
Mr. M. Mensah, Senior Planning Officer

11.30 am : Ministry of Health
Mr. H. Noye-Nortey, Environmental Health Division

2.00 pm : Registration with Ministry of Interior

3.00 pm : World Bank, Country Office, RWSG
Mr. J. Gadek, Country Coordinator

WEDNESDAY, 5TH FEBRUARY

9.30 am	:	WaterAid Mr. Ron Bannerman
11.00 am	:	Water Resources Research Institute Dr. A.T. Amuzu
11.30 am	:	Parkla Seismos GeoMechanik Mr. Robert Bannerman
1.30 pm	:	RWSG Mr. J. Gadek
3.00 pm	:	Ghana Water and Sewerage Corporation Mr. C. Kwei, Project Coordinator, UNDP/GWSC Mr. J.K.A. Boakye, Sociologist, UNDP/GWSC
4.30 pm	:	Ministry of Local Government, Dept. of Community Development, Mr. J.N. Arthur, Director

THURSDAY, 6TH FEBRUARY

9.00 am	:	DANIDA Mr. Mogens Bregnbaek
	:	**TRAVEL TO KUMASI**
5.00 pm	:	Meeting with Mr. Ato Brown, KSP Project Coordinator

FRIDAY, 7TH FEBRUARY

9.00 am	:	Kumasi Metropolitan Assembly Secretary Capt. A.Y. Mensah
10.00 am	:	UST, TNC Dean of Engineering Dept. Prof. N.K. Kumapley Manager, TNC, Dr. J. Monney All TNC staff.
2.00 pm	:	Dr. J. Monney
3.30 pm	:	Mr L. Agbemabiese, Community Development Lecturer, TNC.
4.15 pm	:	Mr. R. Simpson, TNC, Rural Water Supply

FRIDAY, 21ST FEBRUARY

7.00 am	:	Prof. J. Pickford leaves Accra for the U.K.
All day	:	Finalising draft report.
10.00 pm	:	Dr. S. Stoveland departs for New York debriefing.

THURSDAY, 13TH FEBRUARY

10.00 am	:	Vice Chancellor, UST, Prof. F.O. Kwami Pro Vice Chancellor, UST, Prof. Ansah Asamoah
11.00 am	:	Project Engineer, KSP, Mr. T. Mensah
11.30 am	:	Mr. Ato Brown, continue
2.00 pm	:	Continuation with Mr. Ato Brown

FRIDAY, 14TH FEBRUARY

9.00 am	:	Capt. A.Y. Mensah, Kumasi Metropolitan Assembly
10.00 am	:	Mr. Ato Brown, Kumasi Sanitation Project
Afternoon	:	Training Network Centre

SATURDAY, 15TH FEBRUARY : Return to Accra

MONDAY, 17TH FEBRUARY : Report Writing

TUESDAY, 18TH FEBRUARY

Morning	:	Report Writing
2.30 pm	:	Meeting First Secretary, Canadian High Commission Mr. G.R. Chauvet
3.30 pm	:	GWSC Acting Managing Director, Mr E.K.Y. Dovlo
4.30 pm	:	GWSC Head of Rural Water Supply, Mr P.O. Sackey

WEDNESDAY, 19TH FEBRUARY : Report Writing

THURSDAY, 20TH FEBRUARY

Morning	:	Report Writing
3.00 pm	:	Debriefing UNDP/Government/RWSG/TNC

SATURDAY, 8TH FEBRUARY

10.00 am : Site visits to Moshi Zongo, South Suntreso and Ayigya pilot areas for on-site sanitation.

MONDAY, 10TH FEBRUARY

Morning : Meetings with TNC staff.
Mr. O. Frimpong, Communication Expert/Journalist
Mr. E. Larbi, M.Sc. Sanitary Engineer, (Sanitation)
Dr. G. Akosa, Lecturer, Civ. Eng., Member TNC Board
Dr. A. Cudjoe, Lecturer, Mech. Eng., Member TNC Board

Afternoon : Dr. J. Monney, TNC Manager

TUESDAY, 11TH FEBRUARY

Morning : Kumasi Sanitation Project

9.00 am : Eva Asare-Bediako, Planner
Peter Eduful, Health Educator
Kwadwo Boakye, Community Development Officer
Victor Donkor, Accountant
Alex Boateng, Project Co-Manager, KMA Quantity Surveyor
Joseph Charles Mensah, Extention Worker

3.00 pm : Glenn Laverick, ODA TC Officer, Health Education ODA sponsored project with KMA

WEDNESDAY, 12TH FEBRUARY

9.00 am : Michael J. Cowing, Mott-MacDonald/ODA/Solid Waste Project/Kumasi

10.30 am : Mr. M.O. Danso, Director, Waste Management Dept. KMA

11.30 am : Site visit to three sites : Public toilets under rehabilitation

2.00 pm : Project Coordinator, Mr. Ato Brown

3.30 pm : Regional Director, GWSC, Mr. P. Appiah-Kubi

5.00 pm : Chairman TNC Board, Mr. K. Owusu-Akyaw

APPENDIX 3

LIST OF DOCUMENTS RECEIVED FOR REVIEW/BACKGROUND

LIST OF DOCUMENTS RECEIVED FOR REVIEW/BACKGROUND

1 Project Document, December 1988.

2 Mandatory Budget Revision "D", July 1990.

3 Project Performance Evaluation Report (PPER), July 1991.

4 Invitation letter to Tripartite Review Meeting (TPR) (incl UNDP position paper and conditions and suggestions for project extensions).

5 Minutes for Tripartite Review Meeting, 12th Sept. 1991.

6 Budget Revision "F".
(incl TOR for subcontracts).

7 Budget Revision "G", October 1991.

8 Budget Revision "H", October 1991.

9 Terms of Reference: Joint Project Evaluation Mission

10 Status Report for Project Evaluation Mission, January 1992.

11 Training Network Centre: Brief Status Report of Ghana Centre

12 KMA: Strategic Sanitation Plan for Kumasi, November 1991.

13 Project Performance Evaluation Report, May 1990.

14 Monthly Progress Report, Sept. - Dec. 1991.

15 Monthly Progress Report, May - June 1991.

16 Monthly Progress Report, April 1991.

17 Monthly Progress Report, Jan. - March 1991.

18 Monthly Progress Report, Oct. - Nov. 1990.

19 Monthly Progress Report, Aug. - Sept. 1990.

20 Monthly Progress Report, June - July 1990.

21 Monthly Progress Report, May 1990.

22 Monthly Progress Report, April 1990.

23 Monthly Progress Report, March 1990.

24 Monthly Progress Report, February 1990.

25 Monthly Progress Report, January 1990.

APPENDIX 4

REPAYMENTS TO REVOLVING FUND FOR HOUSEHOLD LATRINES

MONTH: JANUARY

STATUS: COMPLETED

A Y I G Y A P I L O T A R E A

(Loan Recovery Sheet)

YEAR: 1992

	Name of Beneficiary	H/ No.	Pop.	Type of facility	Start Date	Finish Date	Total Cost	Cash D/payment	Inkind D/payment	Total D/payment	Proj. Amt. Loaned	Interest on Amt. Loaned	Int.+Loan Amount	Monthly Inst Payment	Payment to date	Loan Balance
1	K.Nyarko Marfo	Z.9	55	2- Conv.	02/01/91	17/01/91	206,550.00	20,000.00	28,500.00	48,500.00	158,050.00	33,190.50	191,240.50	7,968.35	40,000.00	151,240.50
2	Charlotte Abayie	6 Z	30	1- Conv.	22/02/91	14/03/91	145,800.00	10,000.00	10,000.00	20,000.00	125,800.00	26,418.00	152,218.00	6,342.42	17,850.00	134,368.00
3	Agnes Ninako	24 Z	40	2- Conv.	22/02/91	14/03/91	223,900.00	20,000.00	15,000.00	35,000.00	188,900.00	39,669.00	228,569.00	9,523.71	32,000.00	196,569.00
4	Mercy Awuku	12 Z	28	1- Conv.	22/02/91	14/03/91	141,800.00	10,000.00	49,000.00	59,000.00	82,800.00	17,388.00	100,188.00	4,174.50	11,000.00	89,188.00
5	Alhaji Koro	3 S	7	1- Conv.	02/04/91	12/04/91	131,440.00	21,000.00	0.00	21,000.00	110,440.00	23,192.40	133,632.40	5,568.02	24,000.00	109,632.40
6	Grace Adjei	30 Z	17	1- Conv.	14/06/91	23/06/91	139,440.00	11,000.00	10,000.00	21,000.00	118,440.00	24,872.40	143,312.40	5,971.35	13,900.00	129,412.40
7	Owusu Benpa	9 AY	28	1- Conv.	14/06/91	23/06/91	139,440.00	11,000.00	10,000.00	21,000.00	118,440.00	24,872.40	143,312.40	5,971.35	16,000.00	127,312.40
8	Anna Konadu	10 Z	30	1- Conv.	14/06/91	23/06/91	132,540.00	12,000.00	7,000.00	19,000.00	113,540.00	23,843.40	137,383.40	5,724.31	13,275.00	124,108.40
9	Akua Birago N	38 Z	40	1- New	14/06/91	29/06/91	208,650.00	21,000.00	10,000.00	31,000.00	177,650.00	37,306.50	214,956.50	8,956.52	12,960.00	201,996.50
0	Yaw Obeng	9 Y	53	2- Conv.	14/06/91	01/07/91	210,310.00	21,000.00	14,000.00	35,000.00	175,310.00	36,815.10	212,125.10	8,838.55	36,000.00	176,125.10
1	L.S. Amainoo	25 I	16	1- Conv.	16/07/91	25/07/91	138,840.00	11,000.00	14,000.00	25,000.00	113,840.00	23,906.40	137,746.40	5,739.43	13,800.00	123,946.40
2	Alhaji Gado	8 Q	24	1-New	16/07/91	31/07/91	217,940.00	5,000.00	69,000.00	74,000.00	143,940.00	30,227.40	174,167.40	7,256.98	59,000.00	115,167.40
3	Supi Mensah	16 J	38	1-New	16/07/91	31/07/91	219,040.00	11,000.00	10,000.00	21,000.00	198,040.00	41,588.40	239,628.40	9,984.52	0.00	239,628.40
4	Eric Boateng	47 I	30	1-Conv.	16/07/91	25/07/91	142,540.00	45,000.00	15,000.00	60,000.00	82,540.00	17,333.40	99,873.40	4,161.39	4,000.00	95,873.40
5	Adjoa Pokuaah	22 I	35	1-Conv.	16/07/91	27/07/91	170,190.00	11,000.00	10,000.00	21,000.00	149,190.00	31,329.90	180,519.90	7,521.66	11,500.00	169,019.90
6	L.S. Amainoo	25 I	25	1-Conv.	29/11/91	20/01/92	143,360.00	20,000.00	14,000.00	34,000.00	109,360.00	22,965.60	132,325.60	5,513.57	0.00	132,325.60
7	B.Y.Prinpong	AZ 788	55	2-Conv.	29/11/91	20/01/92	213,500.00	23,000.00	10,000.00	33,000.00	180,500.00	37,905.00	218,405.00	9,100.21	0.00	218,405.00
8	Mohamed Bizo	50 J	30	1-Conv.	02/01/92	24/01/92	145,500.00	6,000.00	14,000.00	20,000.00	125,500.00	26,355.00	151,855.00	6,327.29	0.00	151,855.00
9	Kwebena Owusu	5 T	25	1-Conv.	02/01/92	24/01/92	138,500.00	11,000.00	10,000.00	21,000.00	117,500.00	24,675.00	142,175.00	5,923.96	0.00	142,175.00
0	Kwaku Nana	37 Z	33	1-Conv.	04/01/92	24/01/92	138,300.00	6,000.00	10,000.00	16,000.00	122,300.00	25,683.00	147,983.00	6,165.96	0.00	147,983.00
1	Kofi Boakye	7 Z	35	1-Conv.	02/01/92	24/01/92	137,900.00	6,000.00	10,000.00	16,000.00	121,900.00	25,599.00	147,499.00	6,145.79	0.00	147,499.00
2	Ekpwei Dosu	41 U	28	1-Conv.	02/01/92	24/01/92	137,900.00	6,000.00	10,000.00	16,000.00	121,900.00	25,599.00	147,499.00	6,145.79	0.00	147,499.00
							2,711,780.00	260,000.00	285,500.00	545,500.00	2,166,280.00	454,918.80	2,621,198.80	109,216.62	305,285.00	2,315,913.80

MONTH: JANUARY
STATUS: COMPLETED

SOUTH SUNTRESO PILOT AREA

Loan Recovery Sheet

YEAR: 1992

o.	Name of Beneficiary	H/ No.	Pop.	Type of facility	Start Date	Finish Date	Total Cost	Cash D/payment	Inkind D/payment	Total D/payment	Proj. Amt. Loaned	Interest on Amt. Loaned	Int.+Loan Amount	Monthly Inst Payment	Payment to date	Loan Balance
11	J.J Hagan	J.43	68	2- New	10/10/90	31/10/90	300,000.00	40,000.00	204,700.00	244,700.00	55,300.00	11,613.00	66,913.00	2,788.00	36,000.00	30,913.00
12	J.E Ampofo	C.14	20	1- New	16/10/90	28/11/90	190,000.00	60,000.00	37,300.00	97,300.00	92,700.00	19,467.00	112,167.00	4,675.00	55,000.00	57,167.00
13	George Boahene	J.16	25	1- Conv.	05/11/90	30/11/90	120,000.00	20,000.00	28,200.00	48,200.00	71,800.00	16,288.00	88,088.00	3,670.00	44,400.00	43,688.00
14	Samuel Bandoh	H.32	30	1- Conv.	09/01/91	08/02/91	120,000.00	20,000.00	37,800.00	57,800.00	62,200.00	15,062.00	77,262.00	3,135.92	37,000.00	40,262.00
15	A.A Awuah	F.14	30	1- New	04/02/91	26/02/91	187,310.00	22,000.00	0.00	22,000.00	165,310.00	34,715.10	200,025.10	8,334.38	65,000.00	135,025.10
16	Kwabena Bonnah	H.27	30	1- Conv.	15/04/91	26/04/91	136,500.00	80,000.00	7,600.00	87,600.00	48,900.00	10,269.00	59,169.00	2,466.00	17,290.00	41,879.00
17	Regina Konada	J.20	50	2- New	18/06/91	18/07/91	323,010.00	65,000.00	0.00	65,000.00	258,010.00	54,182.10	312,192.10	13,008.00	65,000.00	247,192.10
18	Bintu Krano	E.23	6	1- Conv.	19/06/91	06/07/91	130,140.00	20,000.00	0.00	20,000.00	110,140.00	23,129.40	133,269.40	5,552.89	15,000.00	118,269.40
19	J.B Haruna	E.26	21	1- New	17/06/91	12/07/91	203,790.00	50,000.00	9,600.00	59,600.00	144,190.00	30,279.90	174,469.90	7,269.58	36,500.00	137,969.90
20	Noah Eyei Mensa	A.18	13	1- New	28/06/91	12/07/91	203,790.00	20,000.00	9,600.00	29,600.00	174,190.00	36,579.90	210,769.90	8,782.08	18,000.00	192,769.90
21	Clement Sossou	J.21	22	1- New	04/07/91	15/07/91	203,790.00	20,000.00	0.00	20,000.00	183,790.00	38,595.90	222,385.90	9,266.08	0.00	222,385.90
22	J.A Obeng	J.55	20	1-Conv.	20/12/91	29/12/91	143,660.00	5,400.00	9,600.00	15,000.00	128,660.00	27,018.60	155,678.60	4,324.39	0.00	155,678.60
23	A.K Marfo	J.15	25	1-New	18/12/91	03/01/92	227,000.00	5,400.00	9,600.00	15,000.00	212,000.00	44,520.00	256,520.00	7,125.56	0.00	256,520.00
24	Kwasi Berko	7B1k I	12	1-Conv.	13/12/91	30/12/91	138,120.00	10,400.00	9,600.00	20,000.00	118,120.00	24,805.20	142,925.20	3,970.14	0.00	142,925.20
25	Comfort Appiah	K.19	10	1-New	16/12/91	31/12/91	226,420.00	5,000.00	62,320.00	67,320.00	159,100.00	33,411.00	192,511.00	5,347.53	0.00	192,511.00
26	Aba Amissah	3B92/3	25	1-New	16/12/91	31/12/91	202,780.00	10,400.00	9,600.00	20,000.00	182,780.00	38,383.80	221,163.80	6,143.44	0.00	221,163.80
27	E.A Mensah	F.19	14	1-New	04/12/91	19/12/91	220,460.00	10,000.00	9,600.00	19,600.00	200,860.00	42,180.60	243,040.60	6,751.13	0.00	243,040.60
28	Kwame Gyimah	A.5	40	2-Conv.	10/12/91	28/12/91	217,800.00	10,400.00	14,600.00	25,000.00	192,800.00	40,488.00	233,288.00	9,720.33	0.00	233,288.00
							3,494,570.00	474,000.00	459,720.00	933,720.00	2,560,850.00	540,987.60	3,101,838.50	112,330.45	389,190.00	2,712,648.50

APPENDIX 5

REVENUE FROM FRANCHISED PUBLIC TOILETS

KUSHI ZONGO - CONTINUED.

050	Salifu Kanjarga	25 Blk L	34	2-Rev	12/08/91	06/09/91	304,660.00	20,000.00	15,000.00	35,000.00	269,660.00	56,628.60	326,288.60	9,863.57	0.00	326,288.60	2	2.0
051	Issifu Abdulai	43 Blk E	14	2-Rev	21/11/91	09/12/91	318,756.00	30,000.00	15,000.00	45,000.00	273,756.00	57,488.76	331,244.76	9,201.24	0.00	331,244.76	0	0
052	Peter Amofo	11 Blk L	63	2-Rev	25/11/91	13/12/91	326,377.00	20,000.00	15,000.00	35,000.00	291,377.00	61,189.17	352,566.17	9,793.50	0.00	352,566.17	0	0
053	Oseasu Moshie	43 Blk L	43	2-Rev	20/11/91	08/12/91	313,725.00	20,000.00	15,000.00	35,000.00	278,725.00	58,532.25	337,257.25	9,368.26	0.00	337,257.25	0	0
054	Amadu Toure	20 Blk L	47	2-Conv.	21/11/91	09/12/91	235,941.00	15,000.00	15,000.00	30,000.00	205,941.00	43,247.61	249,188.61	6,921.91	0.00	249,188.61	0	0
055	Alhassan Bussags	22 Blk K	65	2-Conv.	21/11/91	09/12/91	235,447.00	20,000.00	15,000.00	35,000.00	200,447.00	42,093.87	242,540.87	6,737.25	0.00	242,540.87	0	0
056	Salifu Issaka	38 Blk K	56	2-Rev	23/11/91	22/12/91	326,419.00	20,000.00	15,000.00	35,000.00	291,419.00	61,197.99	352,616.99	9,794.92	0.00	352,616.99	0	0
057	Anas Bukusalic	74 Blk F	46	2-Rev	04/12/91	29/12/91	296,826.00	20,000.00	15,000.00	35,000.00	261,826.00	54,982.20	316,802.20	8,800.06	0.00	316,802.20	0	0
058	Issa Moshie	69 Blk F	58	2-Conv.	04/12/91	24/12/91	286,414.00	15,000.00	15,000.00	30,000.00	256,414.00	53,845.94	310,260.94	8,618.36	0.00	310,260.94	0	0
059	Sulemana Janda	27a Blk J	42	2-Conv.	23/11/91	17/12/91	281,883.00	20,000.00	15,000.00	35,000.00	246,883.00	51,877.43	297,760.43	8,271.12	0.00	297,760.43	0	0
060	Alhaji Kandene	27 Blk J	20	1-Rev	21/11/91	16/12/91	213,568.00	10,000.00	9,600.00	19,600.00	193,968.00	41,153.28	237,121.28	6,586.70	0.00	237,121.28	0	0
							14,402,266.00	1,112,200.00	1,222,120.00	2,334,320.00	12,067,946.00	2,534,268.66	14,602,214.66	433,185.91	1,935,629.00	12,666,585.66	580	288

Summary	in weeks	Months Behind.	% Defr.	No. Defr.	AV arrears months	AV. Mud since const.
12-24 MND.	411	173	42%	22	7.8 months	18.7 mnd.
0-12 MND.	169	115	68%	27	4.3	6.2 mnd
	580	288		49		

For latrines built during 1990 : ± 42% of possibly paym. not paid.

" " " " 1991 68% of " " "

Average non payment 1990-1992 : 49.6 %

MONTH: JANUARY
STATUS: COMPLETED

KOSHI ZONGO
(Loan Recovery Sheet)

YEAR: 1992

Tot 31.12.91

No.	Name of Beneficiary	H/ No.	Pop	Type of Facility	Start Date	Finish Date	Total Cost	Cash D/payment	Inkind D/payment	Total D/payment	Proj. Amt. Loaned	Interest on Amt. Loaned	Int.+Loan Amount	Monthly Inst Payment	Payment to date	Loan Balance	Months since Compl.	Should pay	MND BEHND
001	Adamu Alhassan	4 Blk B	4	1- Conv.	11/09/89	03/10/89	78,620.00	0.00	78,620.00	78,620.00	0.00	0.00	0.00	0.00	0.00	0.00	24		0
002	Chief Ibrahim Bari	YO 20	19	2- New	23/11/89	08/12/89	224,550.00	0.00	52,200.00	58,230.00	166,350.00	14,933.50	201,283.50	8,386.81	50,000.00	151,283.50	24	251,283	18
003	Isaac Agyeman	1 Blk E	25	1- Conv.	28/12/89	20/01/90	133,800.00	30,000.00	9,600.00	39,600.00	94,200.00	10,782.00	113,982.00	4,749.25	85,000.00	28,982.00	23	ALL.	5
004	Salbu Osmanu	YO 105	48	2- New	28/12/89	20/01/90	233,790.00	35,200.00	19,800.00	55,000.00	178,790.00	37,545.90	216,335.90	9,014.00	82,800.00	133,535.90	23		13
005	Osumanu Abubakar	YO 26	78	2- Conv.	15/01/90	25/01/90	418,300.00	30,000.00	11,000.00	41,000.00	77,300.00	16,233.00	93,533.00	3,897.21	77,300.00	16,233.00	23	89630	3.1
006	Aluze-ele Yaro	YO 83	38	2- New	22/01/90	09/02/90	286,300.00	40,000.00	42,800.00	82,800.00	203,300.00	42,693.00	245,993.00	10,249.71	140,300.00	105,693.00	22	225478	8.3
007	Koluga Koshi	YO 11	30	1- Conv.	06/02/90	22/02/90	94,750.00	20,800.00	1,000.00	21,000.00	67,750.00	14,227.50	81,977.50	3,415.73	20,500.00	61,477.50	22	75130	16.0
008	Wilfina Avicor	39 Blk F	30	1- Conv.	05/02/90	19/02/90	92,600.00	10,000.00	43,000.00	53,000.00	39,600.00	8,316.00	47,916.00	1,996.50	18,000.00	29,916.00	22	43912	13.0
009	Seidu Osmogo	YO 28	25	1- New	12/02/90	16/03/90	158,420.00	20,000.00	15,000.00	35,000.00	123,420.00	25,918.20	149,338.20	6,222.43	25,200.00	124,138.20	20	124440	15.9
010	Abdul Rahman	F 20	55	2- Conv.	26/02/90	22/03/90	184,240.00	20,000.00	13,000.00	33,000.00	151,240.00	31,760.40	183,000.40	7,625.02	105,000.00	78,000.40	20	152500	6.2
011	Braimah Ninkyiena	65 Blk K	62	2- Conv.	12/03/90	19/04/90	171,450.00	40,000.00	11,000.00	51,000.00	120,450.00	25,294.50	145,744.50	6,072.69	106,500.00	39,244.50	19	115368	1.5
012	Asadu Seidu	25 Blk E	55	2- New	15/03/90	04/05/90	234,300.00	40,000.00	14,400.00	54,400.00	179,900.00	37,779.00	217,679.00	9,069.96	54,500.00	163,179.00	19	172311	13.0
013	Mahamadu Salifu	30 Blk L	15	1-Conv.	19/03/90	04/05/90	105,400.00	20,000.00	10,000.00	30,000.00	75,400.00	15,834.00	91,234.00	3,801.42	30,000.00	61,234.00	19	72249	11.6
014	Alhaji Nasa Bari	51 Blk F	65	2-Conv.	25/05/90	12/07/90	207,950.00	20,000.00	18,000.00	38,000.00	169,950.00	35,689.50	205,639.50	8,568.31	106,800.00	98,839.50	17	145656	4.3
015	Bukari Tailor	YO 67	55	2-New	06/06/90	07/07/90	256,750.00	30,000.00	19,800.00	49,800.00	206,950.00	43,459.50	250,409.50	10,433.73	93,700.00	156,709.50	17	177561	8.0
016	Mahan Suleman Osman	64 Blk F	50	2-Conv.	16/07/90	05/02/90	199,770.00	20,000.00	17,400.00	37,400.00	162,370.00	34,097.70	196,467.70	8,186.15	80,390.00	116,077.70	95	122790	5.2
017	Mallam B.Alhassan	YO 43	45	2-New	10/07/90	06/08/90	258,900.00	20,000.00	13,300.00	93,300.00	165,600.00	34,776.00	200,376.00	8,349.00	91,000.00	109,376.00	15	12535	4.1
018	Ibrahim Mahan	85 Blk F	10	1-Conv.	24/07/90	11/05/90	114,100.00	10,000.00	44,500.00	54,500.00	59,600.00	12,516.00	72,116.00	3,004.83	40,000.00	32,116.00	14	42068	0.7
019	Alhassan Bukari	YO 55	60	2-New	23/07/90	19/09/90	219,950.00	30,000.00	15,000.00	45,000.00	174,950.00	36,739.50	211,689.50	8,820.40	70,000.00	141,689.50	14	123480	6.1
020	Yakubu Musah	84 Blk F	15	1-Conv.	03/08/90	25/09/90	129,000.00	10,000.00	51,100.00	61,100.00	67,900.00	14,259.00	82,159.00	3,423.29	0.00	82,159.00	14	47922	14.0
021	Musa Lerigo	YO 42	43	1-New	13/10/90	30/10/90	157,506.00	10,000.00	7,000.00	17,000.00	140,506.00	29,506.26	170,012.26	7,083.84	48,000.00	122,012.26	13	92079	6.2
022	Haruna Issaka	43 Blk J	54	2-New	01/12/90	14/01/91	251,350.00	10,000.00	14,400.00	24,400.00	226,950.00	47,659.50	274,609.50	11,442.06	63,500.00	211,109.50	10	114980	4.5
023	Nankye Repaena	YO 29	70	2-Conv.	04/12/90	22/01/91	237,400.00	20,000.00	14,400.00	34,400.00	183,000.00	38,430.00	221,430.00	9,226.25	41,500.00	179,930.00	10	92242	5.5
024	Issifu Ibrahim	YO 80	55	2-Conv.	05/12/90	25/12/90	194,250.00	10,000.00	11,000.00	21,000.00	173,250.00	36,382.50	209,632.50	8,734.69	96,800.00	112,832.50	12	104808	1.0
025	Salifu Mohammed	1 Blk E	35	2-New	03/01/91	04/03/91	220,750.00	10,000.00	14,400.00	24,400.00	196,350.00	41,233.50	237,583.50	9,899.31	4,000.00	233,583.50	10	98993	9.6
026	Suleimana Gyanda	35 Blk L	59	2-New	13/12/90	14/01/91	237,700.00	20,000.00	14,400.00	34,400.00	243,300.00	51,093.00	294,393.00	12,266.38	44,000.00	250,393.00	10	122663	6.4
027	E.K. Asante	19 Blk K	62	2-Conv.	03/01/91	25/01/91	169,150.00	0.00	14,400.00	14,400.00	154,750.00	38,797.50	223,547.50	9,314.48	30,000.00	193,547.50	10	93144	6.8
028	Sgt. Braimah Gendo	82 Blk C	54	2-Conv.	28/02/91	26/03/91	236,410.00	20,000.00	22,200.00	42,200.00	194,210.00	41,204.10	237,414.10	9,892.25	31,200.00	206,214.10	9	89029	5.8
029	Issifu Chief	44 Blk F	49	2-Conv.	28/02/91	22/03/91	220,400.00	10,000.00	22,200.00	32,200.00	188,200.00	39,522.00	227,722.00	9,488.42	16,400.00	211,322.00	8	75904	6.3
030	Rahamani Busanga	46 Blk F	50	2-Conv.	28/02/91	26/04/91	233,050.00	10,000.00	14,400.00	24,400.00	208,650.00	43,816.50	252,466.50	10,519.44	38,963.00	213,503.50	7	73633	3.2
031	Alhaji Asoka	6 Blk J	56	2-New	11/03/91	12/04/91	319,760.00	16,000.00	20,400.00	36,400.00	283,360.00	59,505.60	342,865.60	9,524.04	35,600.00	307,265.60	7	66618	3.3
032	Issa Asfondo	11 Blk J	25	1-New	10/03/91	12/04/91	211,640.00	10,000.00	12,600.00	22,600.00	189,040.00	39,698.40	228,738.40	1,624.61	0.00	228,738.40	7	53368	7.0
033	Kununi Sawadogo	16 Blk J	67	2-New	10/03/91	12/04/91	323,010.00	10,000.00	20,400.00	30,400.00	292,610.00	61,448.10	354,058.10	9,834.95	26,000.00	328,058.10	7	68838	4.4
034	Kununi Zonde	43 Blk F	53	2-New	10/03/91	12/04/91	323,310.00	16,000.00	20,400.00	36,400.00	286,910.00	60,251.10	347,161.10	9,643.36	28,943.00	318,218.10	7	67501	4.0
035	Salifu Issah(S.4)	31aBlk L	61	2-New	10/03/91	26/04/91	315,060.00	10,000.00	20,400.00	30,400.00	284,660.00	59,778.60	344,438.60	11,481.29	0.00	344,438.60	7	80367	7.0
036	Alhaji Alassan Mahi	52 Blk F	43	2-Conv.	11/03/91	12/04/91	235,610.00	20,000.00	14,400.00	34,400.00	201,210.00	42,254.10	243,464.10	6,762.89	39,120.00	204,344.10	7	47334	1.2
037	Fatima Mahabu	54 Blk F	54	2-New	10/03/91	26/04/91	350,910.00	20,000.00	20,400.00	40,400.00	310,510.00	65,207.10	375,717.10	10,436.59	31,311.00	344,406.10	7	73052	4.0
038	Rahaman Alhassan	YO 3	55	2-New	11/03/91	26/04/91	312,810.00	10,000.00	20,400.00	30,400.00	282,410.00	59,306.10	341,716.10	9,492.11	23,000.00	318,716.10	7	66444	4.6
039	Mahamadu Salaa	36 Blk K	56	2-New	11/03/91	26/04/91	322,310.00	20,000.00	20,400.00	40,400.00	282,310.00	59,285.10	341,595.10	9,488.75	0.00	341,595.10	7	66416	7.0
040	Mahamadu Mangara	4 Blk L	54	2-New	11/03/91	26/04/91	324,510.00	15,000.00	20,400.00	35,400.00	289,110.00	60,713.10	349,823.10	9,717.31	0.00	349,823.10	7	68019	7.0
041	Issaka Busanga	50 Blk F	37	2-New	01/08/91	01/09/91	293,960.00	30,000.00	15,000.00	45,000.00	248,960.00	52,281.60	301,241.60	8,367.82	16,740.00	284,501.60	2	16754	0.0
042	Amadu Zabsole	10 Blk L	53	2-Conv.	06/08/91	31/08/91	281,260.00	20,000.00	15,000.00	35,000.00	226,260.00	47,514.60	273,774.60	7,604.85	0.00	273,774.60	3	22812	3.0
043	Raheman Sawadogo	25 Blk S	45	2-New	03/08/91	28/08/91	298,360.00	20,000.00	15,000.00	35,000.00	263,360.00	55,305.60	318,665.60	8,851.82	0.00	318,665.60	3		3.0
044	Haruna Bawagho	YO 2	45	2-New	06/08/91	31/08/91	299,210.00	20,000.00	15,000.00	35,000.00	264,210.00	55,484.10	319,694.10	8,880.39	0.00	319,694.10	3		3.0
045	Issafu Busanga	35 Blk F	35	1-New	06/08/91	02/09/91	191,490.00	10,000.00	9,000.00	19,000.00	172,490.00	36,222.90	208,712.90	5,797.58	8,500.00	200,212.90	2		0.2
046	Akeyaai-Kwame	33 Blk L	80	2-New	03/08/91	28/08/91	300,160.00	30,000.00	15,000.00	45,000.00	255,160.00	53,583.60	308,743.60	8,576.21	8,500.00	300,243.60	3		2.0
047	Abena-Yeboah	60 Blk F	75	2-New	12/08/91	06/09/91	294,360.00	30,000.00	15,000.00	45,000.00	249,360.00	52,365.60	301,725.60	8,381.27	16,762.00	284,963.60	2		1.0
048	Salifu Zagsobe	26 Blk L	51	2-New	06/08/91	31/08/91	293,960.00	10,000.00	15,000.00	25,000.00	268,960.00	56,481.60	325,441.60	9,040.04	0.00	325,441.60	3		3.0
049	Fati-Grushie	42 Blk H	61	2-New	08/08/91	12/09/91	276,260.00	20,000.00	37,000.00	57,000.00	219,260.00	46,044.60	265,304.60	7,369.57	7,500.00	257,804.60	2		1.0

APPENDIX 6

BUDGETS AND EXPENDITURES

C.B.D PUBLIC LATRINES STATEMENT OF SURTX PAYMENT
AS AT 31 ST DECEMBER 1991

No.	Name of contractor	Bal. due July 1991	Bal. due Aug. 1991	Bal. due Sept. 1991	Bal. due Oct. 1991	Bal. due Nov. 1991	Bal. due Dec. 1991	Surtax Expected 31/12/91	Surtax Paid 31/12/91	Balance Due
1	Albert Joseph & Co.	271,350.00	271,350.00	271,350.00	271,350.00	251,100.00	251,100.00	1,557,600.00	517,450.00	1,070,150.00
2	Citicom Ent. Limited	132,540.00	120,560.00	120,560.00	120,560.00	120,560.00	60,560.00	655,640.00	298,630.00	357,010.00
3	Gyamfi Bricks & Co.	256,764.00	128,355.00	128,355.00	128,355.00	128,355.00	128,355.00	595,659.00	256,765.00	641,924.00
4	Hygenic qual. services	26,940.00	104,490.00	104,490.00	104,490.00	104,490.00	104,490.00	549,390.00	444,910.00	104,480.00
5	Destex	295,590.00	99,630.00	99,630.00	99,630.00	51,405.00	51,405.00	760,590.00	295,630.00	461,960.00
	TOTAL	956,784.00	724,415.00	724,415.00	724,415.00	655,940.00	645,940.00	4,451,909.00	1,516,355.00	2,635,524.00

% received : $\frac{1.8}{4.4} \times 100 = 41\%$ A

Will this be paid?

APPENDIX 7

REVENUE FROM DESLUDGING ACTIVITIES BY KMA

BUDGET AND EXPENDITURES

Original Budget (1988)

UNDP INPUT: US$644,100

Revision H: (1990)

Budget increased to US$1,112,000 (additional finance to sewerage scheme)

Expenditures as per end of 1991: (Estimate)

		Annual	Accumulated
1989	US$	145,462	145,462
1990		108,163	353,625
1991 (estimate)		400,000	650,000
Balance:	1,112,000 -	650,000	460,000

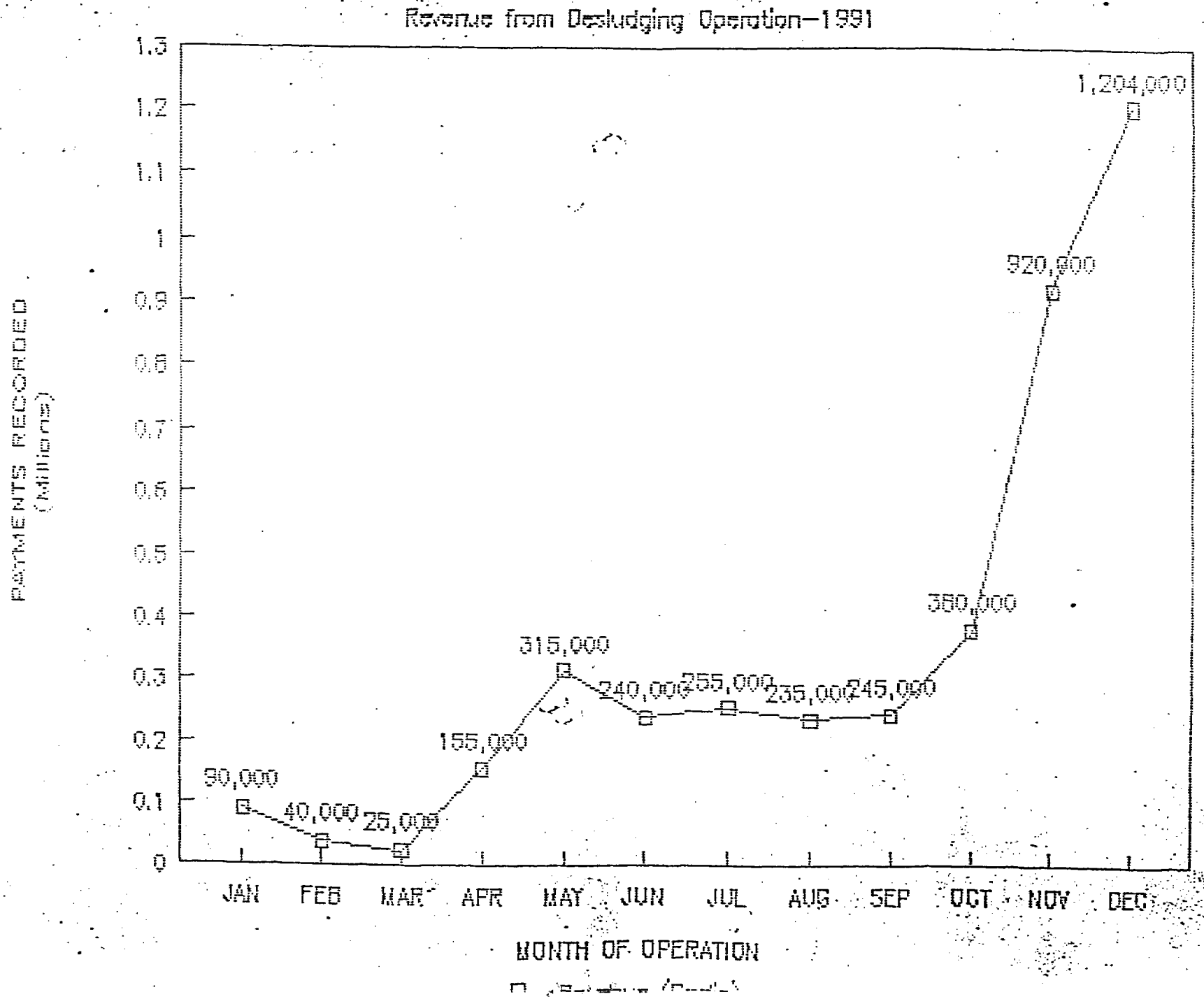
Requirement for completion of KSP (estimate)

Completion of Sewerage Scheme - UNDP Contribution	340,000
Completion of Public Toilets	40,000
Completion of On-site Latrines	40,000
	US$420,000

APPENDIX 8

FIRST NEWSLETTER FROM TNC

WASTE MANAGEMENT DEPARTMENT



TNC-UST

TNC NEWS

TRAINING NETWORK CENTRE NEWSLETTER VOL.1 MAY, 1991

WHAT IS THE TRAINING NETWORK CENTRE ?

Under the United Nations declared International Drinking Water Supply and Sanitation Decade (IDWSSD) from 1981 - 1990, a bold initiative was taken jointly by the United Nations Development Programme (UNDP) and the World Bank to execute a global programme in the water supply and sanitation sub-sector. The focus of this initiative was, and still is, to promote the provision of potable water supply and improved sanitation for low-income populations, particularly, those in developing countries at lower costs. One specific set of activities within this focus has resulted in the establishment of the International Training Network for Water and Waste Management (ITN) of which the Training Network Centre (TNC) in Kumasi is a part.

At the inception of the decade programme it was generally recognised that, in most developing countries, the majority of the population relied on unprotected water supply sources and poor or no satisfactory sanitation facilities. As a result of these conditions, the inhabitants of these areas have a reduced health status and consequently lower productivity and economic development potential.

Although most Governments have placed high priority on the provision of required infrastructure using conventional approaches and technologies, the associated high costs combined with the rapid population growth only exacerbate the problem and limit any gains made in solving it. On the other hand, cost reduction can be achieved by using lower-cost technologies and project implementation methods that harness the resources of the communities themselves.

These technologies,which have been developed and proven at the full project scale, are significantly cheaper and easier to maintain than conventional technologies. As part of a global effort to disseminate information on new technologies, Training Network Centres have been established within local sector institutions or institutions of higher learning to provide a focal point for information documentation and dissemination on water supply and sanitation technologies appropriate for low-income communities. The development of human resources through the provision of sectoral training is the cornerstone of the Training Network Centres.

One such Centre is the Training Network Centre (TNC) at the University of Science and Technology in Kumasi, Ghana. Established in April 1989, within the Department of Civil Engineering, the TNC seeks to promote the use of appropriate lower-cost water and sanitation technologies by conducting workshops, holding specialised courses, strengthening university core programmes in Environmental Quality Engineering as well as supporting any other relevant training, information dissemination and applied research activities.

To achieve such goals, the Centre is directing its efforts towards instructors at sector institutions, and decision makers involved in water supply and sanitation throughout the country, practising professional both government and private sectors and students in Engineering, Public Health and the Social Sciences to broaden their horizons in relation to the delivery of sector services to the people of Ghana. The UNDP/World Bank global programme has established four Centres in Africa so far. The others are located at (AMREF) in Nairobi, University of Zimbabwe in Harare and CREPA in Ouagadougu. Plans are far advanced to establish, at least one Centre in Nigeria in the near future.

CENTRE STAFF

The Centre has a six member multi-disciplinary core staff who possess the relevant experience to help achieve the objectives of the Centre. They are:

Dr. J.G. Monney	- Manager
Mr. Lawrence Agbemabiese	- Community Development Lecturer
Mr. Eugene Larbi	- Sanitary Engineer (Urban Waste Management)
Mr. Robert Simpson	- Civil Engineer (Rural Water Supply)
Mr. Oliver Frimpong	- Communications Expert
Ms. Safuratu M-Tahiru	- Civil Engineer (Rural & Urban Sanitation

TNC MANAGEMENT BOARD

The Centre is managed by a thirteen member Management Board whose membership is client-oriented and made up of top officials from the following organisations:

Ghana Water and Sewerage Corporation
Ministries of Works and Housing, Local [illegible]
Education, Finance & Economic Planning, [illegible]
from the University (UST) and include the [illegible]
of Engineering; Head, Department of Civil Engineering
Head, Department of Community Health, School of
Medical Sciences, The Manager (TNC) and the Co-
ordinator, Kumasi Sanitation Project (KSP).

The Funding Agency (UNDP) and the Executing Agency (World Bank) are represented by Miss Henrietta Keijzers and Mr. Joe Gadek, Programme Officers respectively.

The Chairman of the Board is Mr. Owusu Akyaw, a retired Banker.

WORKSHOP ON PARTICIPATORY TECHNIQUES FOR WATER SUPPLY AND SANITATION PROJECTS

Mr. Ron Sawyer, Community Development Specialist with the UNDP/World Bank Regional Water and Sanitation Group (RWSG) based in Nairobi, Kenya facilitated a workshop on 'Participatory Techniques' at the Training Network Centre in November, 1990. Mr. Sawyer, who first visited the TNC in May 1990 for staff work planning sessions, has most notably been associated over the past five years or so with the UNDP interregional *Promotion of the Role of Women in Water Supply and Environmental Sanitation Services (PROWWESS) Project.*

The participatory techniques workshop was conducted over a very intensive ten day period from October 22 to 31, 1990. Approximately thirty participants attended the workshop and all rated the exercise very highly. Mr. Sawyer will return to the TNC sometime in 1991 to further assist in staff development if the need is defined.

WORKSHOP ON PROMOTION AND COMMUNITY MANAGEMENT OF HOME LATRINES

The TNC, in conjunction with the Kumasi Sanitation Project, held a one-day workshop on Promotion and Community Management of home latrines in August, 1990. It was attended by twenty-six participants including members of four Community Sanitation Steering Committees drawn from four suburbs in Kumasi -Fanti New Town, South Suntreso, Ayigya Zongo and Moshie Zongo. The objective was to bring these Sanitation Steering Committee members together and expose them to common techniques on promotion and management of home latrines.

At the end of the workshop, there was a consensus that the workshop had given participants an insight into the nature and advantages of KVIP (**Kumasi Ventilated Improved Pit**) latrine. According to the participants, many of them prior to the workshop had little knowledge about the basic concepts and technologies of KVIP latrines.

A field trip to Moshie Zongo enabled participants to get first hand knowledge of the pilot latrine project.

STRATEGIC SANITATION PLANNING FOR URBAN SANITATION

KUMASI SANITATION PROJECT - THE KSP STORY

One of the lessons of the International Drinking Water and Sanitation Decade has been the futility of relying exclusively on the master planning approach for urban sanitation services delivery. This approach is based on the exclusive use of high-cost conventional sewerage for meeting the sanitation needs of all segments of urban communities, including the poor.

The result of this approach to urban sanitation development in Ghana, and which is also true for most Least Developed Countries (LDC), has been the production and updates of master plans and sewerage blueprints which rarely see even the first stage of implementation. Where sewerage schemes get implemented, the observation is that the investment trend and the allocation of user charges generally result in a situation in which only a limited number of people, who are most often the rich minority, end up benefitting from heavily subsidized high-cost conventional sewerage. The vast majority of the population tend to remain without access to adequate sanitation and often end up paying more than the rich for much poorer services.

Kumasi, Ghana's second largest city and the capital of the Ashanti Region represents a clear case of the failure of the master planning approach meeting the sanitation needs of all segments of urban communities. During the past forty years, four different master plans aimed at providing the metropolis with a comprehensive sewerage scheme were prepared, but not even one of these could be implemented due to lack of funding.

Today, with a population of about 600,000 and a growth rate that is expected to double the population over the next twenty years, the sanitation problem has deteriorated to alarming proportions. More than 80 per cent of the Metropolis' human waste is dumped into streams, open drains and on refuse heaps. Only 20 per cent of Kumasi residents enjoy private water flushed facilities. So bad is the sanitation situation that indeed 10 per cent of all cases reported at the city's health institutions are excreta related.

Though the Metropolitan Authorities have long acknowledged the need for a fresh approach to the problems of sanitation in the metropolis, lack of funds has always been a serious constraint.

The desire to address the problem of urban sanitation services delivery such as that of Kumasi has resulted in the modification of existing planning methods to yield a more flexible approach to the preparation and implementation of urban sanitation projects. The resulting methodology is what is known today as Strategic Sanitation Planning (SSP)

Some of the more salient features of the SSP process are:

- It aims at the extension of sustained sanitation coverage to all segments of the target community, especially, the low-income segments.
- It involves a consideration of a wide range of technologies, rather than conventional sewerage alone. This ensures that, for each household, a technology can be provided which is affordable and also meet user preferences.
- Emphasis is on short-term planning and a flexible, learning-by-doing approach is adopted to enable changes in design parameters to be accommodated if required. This is in recognition of the rapid urban growth trends which make long term planning difficult and unreliable.
- User participation is encouraged at all stages in project planning and implementation. Technology selection

- and provision of facilities are based on effective user demand, hence, an important component of the process is the promotion of user awareness about the need for improved sanitation.
- It includes the establishment of supporting institutional (both private and public) and financial arrangements for sustained extension and efficient delivery of sanitation services.

Today, thanks to a programme based on Strategic Planning (SSP) concept for urban sanitation services delivery, the residents of Kumasi could hope for improved sanitation in the near future.

Under a new ambitious SSP-based programme called the Kumasi Sanitation Project (KSP), the Metropolitan Authorities hope to provide every household with access to adequate sanitation by the year 2000.

The programme, which is jointly funded by the UNDP and the Ghana Government, has started with an initial three-year pilot project.

In many ways, the KSP marks an important turning point in the planning, and delivery of sanitation services in urban areas. If the project is successful, the experiences gained could pave the way for more effective sanitation services delivery for other urban areas which are battling with sanitation problems, both in Ghana and in other developing countries.

WATER SUPPLY AND SANITATION PROJECTS WITHIN GHANA - AN OVERVIEW

There are over thirty institutions and agencies in Ghana currently engaged in Water Supply and Sanitation activities.

These institutions and agencies are bilateral, governmental, multilateral or non-governmental organizations (NGOs) with programmes of activities covering the entire country. They all have one over-riding objective - contributing to ensure that there will be improved health for all by the year 2000 through improved water supply and sanitation.

Since 1987, the Ghana Water and Sewerage Corporation has been operating jointly with a number of external agencies to improve urban and rural water supply coverage. In collaboration with such external agencies as the Canadian International Development Agency (CIDA), the German Agency for Technical Co-operation (GTZ) with KFW (German Development Bank) funding, UNDP, UNICEF, and a number of others, GWSC has been able to provide drilled boreholes and/or hand-dug wells fitted with handpumps in many communities where access to potable water had always constituted a serious problem.

In the Upper West and Upper East regions of the country, GWSC and CIDA joined forces to drill borcholes and instal 2,800 handpumps. Under the "3000 Wells Maintenance Programme" in southern Ghana GTZ and GWSC, have been concentrating their efforts to improve water supply coverage in communities. Extensive handpump testing was conducted under UNDP funding in Bolgatanga. Presently in Bolgatanga, a joint GWSC and UNDP/World Bank Water and Sanitation project is aimed at testing community-based management approaches for the rural water supply and sanitation sector.

The Department of Community Development is, in conjunction with a number of external agencies, engaged in several sector activities including the re-training of artisans, the provision of back-up community animation and the provision of health education support for sector activities.

Also active in the field are the NGOs which are doing admirable work in the sector. Water Aid, Global 2000, and World Vision International are only a few of the more active NGOs.

More recently, Caisse Centrale de Cooperation Economique (French Financing Agency) is undertaking a major rural water supply project involving the drilling of 900 boreholes and installation of handpumps in the Central Region of Ghana.

In the Volta Region the GWSC/UNDP Water Supply and Sanitation Management Project is promoting community-based management concept in two districts, Hohoe and Jasikan. Another GWSC/UNDP Water Supply and Sanitation Project in the Eastern Region is scheduled to begin during 1991.

In the area of urban sanitation, the UNDP funded and World Bank executed (managed) Low-Cost Human Waste Management Pilot Project in Kumasi is assisting the Kumasi Metropolitan Assembly in developing an investment plan for alleviating the pressing environmental sanitation problems in the metropolis of some 600,000 persons. The Kumasi Sanitation Project will be used by Government as a model for replication in other large settlements throughout the country.

One thing is certain. The above cited agencies should find the Training Network Centre at the UST an invaluable focal point for information on the full range of water and sanitation technologies and training techniques. It is worthy to note that the development objective of the Centre is to build local capacity to bring about improvement in both the effectiveness of water supply and sanitation investments and execution of service coverage particularly in low-income population groups in the urban fringe and rural areas.

The above text gives a very brief overview of some of the present activities within the sector. It is not intended to be comprehensive and if any agency/organization has been overlooked please write to us via the address on the back page of this newsletter describing your group's sector involvement. We offer our apologies for any oversight and we hope to be completely conversant with the sector activities in the near future.

THE BOLGATANGA COMMUNITY WATER SUPPLY AND SANITATION MANAGEMENT PILOT PROJECT

There is growing worldwide consensus that sustainable and replicable programmes necessitate that communities become more directly involved in the design, implementation, operation and maintenance, and financing of their water supply systems and sanitation facilities. This will require a fairly radical change from the heavily centralised management currently provided by the Ghana Water and Sewerage Corporation to a decentralised system of community-based management.

The Bolgatanga Community Water Supply and Management Pilot Project has been designed to determine whether communities are willing and able to take direct

:esponsibility for managing their water supply systems and improved sanitation facilities.

In doing this, the project team, together with the user communities, is trying to develop an effective implementation strategy and a corresponding training programme for extension agents, private handpump mechanics and artisans for latrines and hand-dug well construction.

The Pilot Project which provides water for about 15,000 people in 50 communities is located in the Bolgatanga District of the Upper East Region. The health status of the people of the district is poor as indicated by an infant mortality rate of about 100 per thousand live births and the high incidence of water borne diseases such as bilharzia, diarrhoea and guinea worm.

The strategy includes methods for involving women in community management in recognition of the strategic importance they play in all sectors of the project organization, financial management, health and sanitation, water collection and pump repairs.

The project is managed by the GWSC Bolgatanga Regional Office and funded by CIDA (channeled through UNDP core funding in New York) with the World Bank as the Executing Agency.

TNC AT "SAFEWATER 2000"

The Manager of TNC, Dr. James G. Monney attended a four day global consultation meeting on Water and Sanitation Decade, 1991-2000 held in New Delhi, from 10 to 14 September, 1990 under the theme "Safewater 2000."

Briefing members of staff of the Centre on his return, the Manager reported that the meeting was attended by more than 300 participants drawn from developing countries, external support agencies and non-governmental organizations. He added that participants held serious discussions aimed at improving water supply and sanitation services in the 1990s.

According to Dr. Monney, the results of the meeting's deliberations are embodied in what he called the New Delhi statement, a copy of which he made available to the Centre.

The Manager also attended the first International Training Network Directors' meeting held in Calcutta, India from 16 to 18 September, 1990.

PROFESSOR ALBERT WRIGHT VISITS THE CENTRE

Professor Albert Wright, former Vice-Dean of the Faculty of Engineering and currently a staff member of the Water and Sanitation Division Policy Unit of the World Bank, paid a one day visit to the Centre, while on a short holiday in Ghana in August last year.

Professor Wright used the occasion to address a joint meeting of staff members of the Centre and those of the Environmental Quality Engineering Division of the Department of Civil Engineering.

He called for closer co-operation between the two groups emphasing that it was through such co-operation and collaboration that each group could achieve healthy results in the search for sustainable and potable water and sanitation services for the people.

WHAT OUR VISITORS SAY

"Very productive visit. Impressed by your team spirit! thanks.

Dr. Akwasi Aidoo, I.D.R.C., BP 1007 Dakar Senegal. 1st August, 1990

"Now that's a Training Center!"

Dr. Bob Roche, World Bank, Abidjan, Ivory Coast, 3rd August, 1990

"I hope we will be able to take full advantage of this facility."

Katherine Cook, Norrip,Tamale 3rd August, 1990

"Keep up the outputs. I've really enjoyed my visit."

Dr. Leticia A. Obeng, World Bank/UNDP Water and Sanitation Program, 5th October, 1990.

GOOD WILL MESSAGE TO TNC FROM RWSG-WEST AFRICA BY DR. BOB ROCHE

"Now that the Training Network Center is fully staffed and operational, we West Africa members of the UNDP/World Bank Water and Sanitation Program would like to extend our best wishes for Center's success. Linked to other similar training centers specializing in water and sanitation in Africa the TNC is intended to assist in extending water and sanitation coverage to all segments of Ghanaian society.

In the next decade the Government of Ghana will make substantial investments in rural water supply and urban sanitation, and while most of this investment will go towards the construction of new facilities, much effort will go towards training the many people required to implement the envisioned programmes.

In this training effort the Network Centre will become the focal point for information on the full range of water and sanitation technologies and the latest training techniques. Network centre staff will also play a leading role in developing the training materials that will be needed to implement large scale water and sanitation programs and will assist personnel in other training institutions to update their curricula.

The required work is a bit daunting but the rewards of playing such an important role in extending water and sanitation coverage to the nations poor will make the effort well worthwhile. As the Network Centre has successfully recruited a group of talented, highly motivated professionals, we have every expectation it will be a big success."

For further information on the Training Network Centre please write to the Manager, TNC, Department. of Civil Engineering, UST, Kumasi, Ghana