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**Report No. 9731**

**PROJECT COMPLETION REPORT**

**TANZANIA**

**DAR ES SALAAM SEWERAGE AND SANITATION PROJECT  
(CREDIT 1312-TA)**

**JUNE 28, 1991**

Infrastructure Division  
Southern Africa Department

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### CURRENCY EQUIVALENTS

Currency Unit	=	Tanzania Shilling (TSh)
TSh1.0	=	US\$0.11
US\$1.0	=	TSh9.40

### MEASUREMENT EQUIVALENTS

1 meter (m)	=	39 inches = 3.28 feet (ft)
1 kilometer (km)	=	0.62 miles (mi)
1 square kilometer (km <sup>2</sup> )	=	0.386 square miles (sq mi)
1 hectare (ha)	=	0.01 km <sup>2</sup> = 2.25 acre
1 cubic meter (m <sup>3</sup> )	=	35.3 cubic feet (cu ft)
1 liter (l)	=	0.26 US gallons (US gal)
1 liter (l)	=	0.22 Imperial gallons (Ig)
1 Imperial gallon (gal)	=	1.2 US gallons (US gal)
1 cd	=	liters per capacity per day

### ABBREVIATIONS AND ACRONYMS

AFYA	=	Ministry of Health
ARDHI	=	Ministry of Lands, Housing and Urban Development
CIDA	=	Canadian International Development Agency
CN	=	choo nzuri (ventilated improved pit latrine)
CTB	=	Central Tender Board
DCC	=	Dar es Salaam City Council
DCS	=	Dar es Salaam Water Corporation Sole
DSSD	=	Dar es Salaam Sewerage and Sanitation Department
GOT or Government	=	Government of the United Republic of Tanzania
ICB	=	International Competitive Bidding
KfW	=	Kreditanstalt fur Wiederaufbau, Federal Republic of Germany
LCSE	=	Low-Cost Sanitation Engineer
LGSC	=	Local Government Service Commission
MAJI	=	Ministry of Water (now merged into MWEM)
MIS	=	Management Information System
MWEM	=	Ministry of Water, Energy and Minerals
NUWA	=	National Urban Water Authority
ODA	=	Overseas Development Authority, United Kingdom
PIU	=	Project Implementation Unit
PMO	=	Prime Minister's Office
PPF	=	Project Preparation Facility
RWSG-EA	=	Regional Water and Sanitation Group-East Africa
SIDA	=	Swedish International Development Agency
TAG	=	Technology Advisory Group
TANESCO	=	Tanzania Electric Supply Co. Ltd.
UNDP	=	United Nations Development Programme
WHO	=	World Health Organization

### FISCAL YEAR

July 1 to June 30

Office of Director-General  
Operations Evaluation

June 28, 1991

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Project Completion Report on Tanzania -  
Dar es Salaam Sewerage and Sanitation Project  
(Loan 1312-TA)

Attached, for information, is a copy of a report entitled "Project Completion Report on Tanzania - Dar es Salaam Sewerage and Sanitation Project (Loan 1312-TA)" prepared by the Africa Regional Office. No audit of this project has been made by the Operations Evaluation Department at this time.

Attachment

A handwritten signature in black ink, appearing to be 'J. P. ...', is written over the word 'Attachment'.

TANZANIADAR ES SALAAM SEWERAGE AND SANITATION PROJECT  
(CREDIT 1312-TA)PROJECT COMPLETION REPORTTABLE OF CONTENTS

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TANZANIADAR ES SALAAM SEWERAGE AND SANITATION PROJECT (CR. 1312-TA)PROJECT COMPLETION REPORTPREFACE

This is a report on the completion of the Sewerage and Sanitation Project in Dar es Salaam, Tanzania, for which a credit of SDR20.6 Million (US\$22.5 Million) equivalent (Credit Number 1312-TA) was approved in March 1983. The borrower was the Government of the United Republic of Tanzania (GOT). The project was implemented under the control of a Project Implementation Unit under the Ministry of Water (now Ministry of Energy, Minerals and Water). The credit was closed in December 1988, one year later than the original closing date. Closing was delayed to allow the electrical/mechanical workshops to be completed together with training of workshop personnel. There was a cancellation of about US\$350,000 from the credit in August 1989 due to tardiness in preparing and submitting disbursement requests.

Parts I and III of the report were drafted by IDA while the Borrower prepared Part II. The draft report has been reviewed by the GOT and their comments are reflected in the final version of the PCR which is submitted herewith.

Preparation of this PCR was started during the Bank's final supervision mission of the project, and is based, inter alia, on the Staff Appraisal Report; the Credit Agreement; supervision reports; correspondence between the Bank and the Borrower; and internal Bank memoranda.

**TANZANIA****DAR ES SALAAM SEWERAGE AND SANITATION PROJECT**  
**(CREDIT 1312 TA)****PROJECT COMPLETION REPORT****EVALUATION SUMMARY****Objectives**

During the 1970's sewerage and sanitation services to Tanzania's urban population of approximately two million people deteriorated, particularly during the period 1974-78 when town and city councils were abolished--including the Dar es Salaam City Council and its sewerage and sanitation department.

At the time of appraisal, the condition of both waterborne and on-plot sanitation in Dar es Salaam was very bad, causing serious pollution and health risks. The basic cause was assessed as poor operation and an almost complete lack of maintenance.

The objectives of the project were therefore to rehabilitate the defunct sewerage system; to focus primarily on low-cost sanitation facilities to serve the majority of the population; and to develop services, institutions, management and financial practices required for the sewerage and sanitation facilities to be properly planned, constructed, operated and maintained in the future.

**Implementation Experience**

In general, rehabilitation of the sewerage infrastructure proceeded well, under the control of a Project Implementation Unit under the Ministry of Water, MAJI, (previously ARDHI) using both foreign and local engineers and contractors. However, as a result of the high connection costs, only about 200 new sewerage connections out of a target of 600 had been made as at the end of the project.

The Low Cost Sanitation component was less successfully implemented. Against an original target of 30 working pit emptiers, the Dar es Salaam Sewerage and Sanitation Department (DSSD) was operating only 14 pit emptiers at the project close. Twenty-two other emptiers were being operated by the Dar es Salaam City Council Health Department. Only about 660 out of a planned 3600 low-cost pit latrines had been constructed by the close of the project as the target population could barely afford the cost of installation.

Implementation of the DSSD institution-building and financial-capability components was hampered by a combination of poor project design (that is, the lack of an adequate legal and institutional framework for DSSD), bureaucratic inertia in counterpart manager recruitment, resistance to tariffs based on cost-recovery, and expatriate technical assistance which was generally not of a high calibre and became demoralized. However, a number of

sanitary engineers were successfully trained in India, and a number of DSSD counterparts received training in Britain.

### Results

The project's closing date was extended by one year to December 1988.

The objective of restoring the basic sewerage infrastructure was achieved and the problem of sewage overflows considerably reduced. However, the objectives with respect to new sewerage connections and new on-site low-cost latrines were met to the extent of only about 25 percent.

The economic or financial results have been particularly disappointing. Total revenues in terms of USDollars in 1988-89 were about 1 percent of the level forecast in the Staff Appraisal Report. Although there is very little financial information available, it is virtually certain that DSSD is losing cash from its operations and that the rate of return is negative versus an appraisal forecast of about 6 percent.

### Project Sustainability

Prospects for project sustainability are poor. Despite a significant capital outlay, DSSD is losing cash. It is constrained by its subordination to Dar es Salaam City Council. Evidence is mounting that the improvement in the pit-emptying service that occurred under DSSD's expatriate management is no longer being sustained. The majority of DSSD's vehicles are once again no longer serviceable. Thus the likelihood is for a gradual deterioration in the system over the next few years to its previous levels.

### Findings and Lessons Learned

The lessons learned include:

- (a) The need for a sound legal and institutional framework, particularly for a new project or a "resurrected" organization. It is necessary that management's authority should match its responsibility;
- (b) In retrospect, despite the evident need, the project should not have been permitted to proceed until the appropriate legal framework was in place and the resulting institution was in existence, staffed with a core of potential counterpart managers in place (whose qualifications should have been acceptable to IDA);
- (c) DSSD should have either been established as a parastatal, similarly to NUWA, or preferably (to facilitate joint billing systems and the ability to enforce payments for sewerage through the cut-off of water) as a division of NUWA. The legislation should have invested NUWA or DSSD with sufficient power to enable its managerial and personnel practices, its financial management and tariffs, and its contracts to be determined by its own quasi-independent board;

(d) To be effective, the expatriate management financed by the project should have been in executive positions with sufficient freedom to hire and fire;

(e) When a borrower has a history of unsound financial policy, it is desirable that financial practices and policies be corrected as a condition of credit effectiveness;

(f) The credibility and reliability of the sector institution to provide the support services required, such as emptier service, aggravated by affordability problems and the lack of consumer credit seem to have dampened enthusiasm for consumer investment in low-cost sanitation systems; and

(g) A more thorough analysis of affordability in the target area may have suggested the greater use of self-help and private construction for installation and possibly greater installation rate.



TANZANIA

DAR ES SALAAM SEWERAGE AND SANITATION PROJECT  
(CREDIT 1312-TA)

PROJECT COMPLETION REPORT

PART I: PROJECT REVIEW FROM BANK'S PERSPECTIVE

**A. Project Identity**

- Project Name: Dar es Salaam Sewerage and Sanitation Project
- Credit Name : 1312-TA
- RVP Unit : Africa
- Country : Tanzania
- Sector : Infrastructure--Water and Sanitation

**B. Background**

1. Sector Development Objectives. Sewerage and sanitation in the urban areas of Tanzania are the responsibility of the Ministry of Lands, Housing and Urban Development (ARDHI). While the towns are responsible for operating and maintaining capital facilities, ARDHI prepares or approves plans for new investment and supervises project implementation.
2. At the time of project commencement, only six towns including Dar es Salaam had partial access to waterborne sewerage; the population served was about 200,000 out of the total urban population of about 2 million. The remainder of the urban population utilized septic tanks and pit latrines. As in the case of water facilities, sewerage and sanitation operations and pit latrine emptying services declined during the 1970's, particularly during the period 1974-78 when town councils were abolished.
3. The objective of the GOT was to emphasize the up-grading of low-cost, on-plot sanitation facilities to satisfactory hygienic levels, both in urban and rural areas. Its intention was also to improve waterborne sewerage services where practical.
4. Constraints in meeting these objectives included cumbersome organization, insufficient numbers of qualified staff and limited financial resources exacerbated by inadequate tariffs and poor billing and collection.

**C. Project Objectives and Description**

5. Project Objectives. The project was intended as a modest first stage in a long range program to develop basic sanitation in Dar es Salaam to meet acceptable standards. The population of Dar es Salaam in 1978 was 782,000 and was expected to reach 2.4 million by 1999. About 90 percent of the population had its sanitation requirements met by pit latrines and septic tanks, with the rest of the city served by a waterborne system installed in 1948.

6. At the time of project appraisal the condition of the existing waterborne sewerage system was extremely bad, resulting in serious pollution and a major risk to health. Design of on plot sanitation structures was frequently unsatisfactory, and emptying of pits and disposal of contents was infrequent and unsanitary, causing serious pollution problems. The basic cause of the foregoing was assessed as poor operation and an almost complete lack of maintenance.

7. The objectives of the project were therefore to rehabilitate the defunct sewerage system; to focus primarily on low-cost sanitation facilities to serve the majority of the population; and to develop services, institutions, management and financial practices required for the sewerage and sanitation facilities to be properly planned, constructed, operated and maintained in the future.

8. More specifically, the project would substantially improve the pit emptying service for about 70,000 existing low-cost sanitation units. The project would promote public acceptance and adoption of better standards of low-cost sanitation and hygienic practices and provide improved latrines for about 40,000 people. Sewer services to about 6,000 properties would be restored and such services would be provided to about 600 additional properties which have access, but are not connected, to the existing sewerage system. Management services would be engaged to initiate proper operation and maintenance of the sewerage and sanitation services, to install satisfactory financial management and cost recovery systems and to train counterpart staff to perform such functions on an ongoing basis.

9. Project Components. The project had the following components:

- (a) rehabilitation and improvement of existing sewerage facilities;
- (b) construction of pit latrines and replacement or conversion of inadequate existing on-plot sanitation units;
- (c) improvement of DCC's pit emptying service;
- (d) establishment and development of a Sewerage and Sanitation Department (DSSD) in DCC;
- (e) provision of offices, workshops, equipment and spare parts required for the management and maintenance of sewerage facilities and sanitation services;
- (f) training for professional and technical staff;
- (g) technical assistance to ARDHI, DCC, NUWA and TANECCO; and
- (h) provision of consulting engineering services for detailed design and supervision of project construction, for additional studies of sanitation-related problems, and for preparation of a Stage II project.

#### D. Project Design and Organization

10. As a result of several cholera outbreaks in Dar es Salaam in the late 1970's, and the virtual collapse of sewerage and sanitation service in the city, there was a clear and well-accepted need for this project.

11. A Master Plan had been prepared in the late 1970's. However, in IDA's initial project identification mission, it was recognized that the scheme for sewerage and sanitation proposed in the Master Plan was far too ambitious in terms of implementation capability and financial capacity. It was also recognized that the emphasis should be on low-cost on-site latrines with pit-emptying, rather than on an expansion of water-borne sewerage. Thus, early in the project cycle, a physical scheme of about 25 percent of the size envisaged in the Master Plan with emphasis upon rehabilitation of the existing sewerage plant, construction of low-cost sanitation and a strong health education component was identified and agreed upon between IDA and the GOT.

12. The project's emphasis upon low-cost sanitation and health education introduced a significant element of innovation in which the Technology Advisory Group (TAG) in Washington and Nairobi were actively involved. In addressing the basic sanitation needs of the whole population of a major city, rather than just the minority served by sewerage, the project was apparently the first of its type to be financed by IDA.

13. In the initiation, appraisal and review process it was recognized that the major concerns were institutional, organizational and financial (tariff levels and cost recovery) in the context of the previous dissolution of the City Council and administrative collapse of its various departments (such as the sewerage and sanitation department). In addition, the financial environment was one where principles of market-oriented resource allocation and cost recovery had not been instituted, with the result that sewerage and pit-emptying fees were less than 10 percent of breakeven cost.

14. Other infrastructural services faced the same situation. However, whereas water supply was placed under a parastatal agency, the National Urban Water Authority (NUWA), sewerage and sanitation was structured as a department of the Dar es Salaam City Council (DCC)--The Dar es Salaam Sewerage and Sanitation Department (DSSD).

15. The limitations of existing institutions within Tanzania were recognized by a number of Bank personnel at the time, and there appears to have been some uncertainty as to the most appropriate and effective institutional framework.

16. The staff Appraisal Report reflects this confusion and uncertainty. Paragraph 5.10 of the SAR states,

"The proposed DSSD will be a new organization intended to operate as a semi-autonomous department of DCC responsible for arranging its own financing through the auspices of DCC and Government in its early years. NUWA is also a new organization operating in the same public utility environment as DSSD. If DSSD is to be merged into NUWA in the future..."

17. There is a major conceptual error expressed in paragraph 6.05 of the SAR which states that, "

A major project benefit will be the establishment of an institution (DSSD)...The institution is expected to be the core of the future Tanzanian national institution for sewerage and sanitation".

However, DSSD is not an institution--it is only a department of DCC. Indeed, SAR paragraph 1.21 indicates that one reason for placing DSSD under the City Council was that "no new legislation will be required".

18. The result of this approach was to give the management of DSSD responsibility without any authority. Overall project implementation was the responsibility of the PIU located in ARDHI, whereas DSSD reported through DCC to the PMO. Evaluation and approval of tenders was the responsibility of the Central Tender Board (CTB). Hiring of local managerial and administrative personnel was the responsibility of the Ministry of Local Government because DSSD was under local government. Tariff increases required the initial approval of the DCC before presentation to GOT.

19. The short-term result was extreme frustration on the part of a succession of expatriate managers; the longer-term result is a lack of training of intended counterpart managers, lack of financial viability and accounting systems, little effective organization-building and a consequent uncertainty with respect to project sustainability.

#### E. Project Implementation

20. Sewerage Rehabilitation and Replacement. Essentially the engineering, installation and supply of all major components were completed--including sewer cleansing equipment and vehicles; supply and installation of pumping equipment; rehabilitation of stabilization ponds; and rehabilitation of the sea outfall. This portion of the project was essentially under the control of the PIU using contractors, as specified in the Credit Agreement.

21. However, out of a target of 600 new sewer connections only about 200 had been made as at the close of the project primarily as a result of the magnitude of the capital cost for the sewer connection together with the cost or difficulty to arrange for the related internal plumbing. This made connection unaffordable to property owners in the absence of a loan scheme. IDA urged that such a scheme be developed and offered to the public, but there is no indication that this occurred before close of the project.

22. Low Cost Sanitation. A distinctive feature of the project was to be the construction of 3,600 pit latrines in the Temeke section of the City. As at the close of the project only about 660 had been constructed--about 50 percent for cash and about 50 percent under a loan scheme. Although at the end of 1987 it was proposed that this project be extended to other parts of the City, and that private contractors also be involved, this was not done before the close of the project. As pointed out by TAG before project commencement, relative to incomes even this solution at approximately US\$600 per installation is beyond the affordability of much of the target population.

A more careful analysis of affordability in the target area might have suggested extending the scheme to a wider area from the beginning and together with a greater emphasis on self-help and private construction for installation, might have led to a greater installation rate.

23. The project was originally based on the rehabilitation of 14 pit emptying trucks and the purchase of 16 new pit emptiers--which would have given DSSD 30 working pit emptiers. It was concluded during the course of the project that only 6 vehicles could be economically rehabilitated and 8 new vehicles purchased; and further that Japanese aid would supply 22 new vehicles. However, as at project close DSSD was operating only 14 vehicles because the DCC would not transfer the 22 Japanese vehicles from its Health Department. Thus the revenue earning capacity of DSSD was reduced by about 60 percent--and the official fees charged by the Health Department are substantially lower than for DSSD. This is a consequence of the unsound organizational/institutional relationships established for DSSD.

24. DSSD Staffing and Technical Assistance. In general, this has proved to be the most unsatisfactory aspect of project implementation. At the end of 1987 (6 months after original completion date)--just one year before the extended close of the project--out of six divisions of DSSD, two divisions had Tanzanian heads; two divisions had national counterparts in place; two divisions--namely finance and the electrical/mechanical divisions--had no counterparts; also, there was no counterpart or deputy for the Head of DSSD. This was due to the extremely slow service of the Local Government Service Commission (LCSC).

25. The expatriate management assigned as technical assistance experienced great difficulty in hiring staff through LGSC, or in organizing its day-to-day activities in relation to DCC. In addition, the Finance division was never staffed by strong and competent people, with the result that there was no really strong and persistent push for tariff increases and accounting systems. The combination of the above led to frustration and demoralization as it became evident that the Technical Assistance team had an objective they could not achieve. Much of this can be attributed to the institutional framework for DSSD.

26. The project provided for the training of seven engineers in India, which was successfully accomplished. These engineers were assigned to DSSD on completion of their training.

#### F. Project Results

27. The objectives of the project did not change during the course of the project, although as a result of delays in the credit approval process and further delays during implementation, the project's closing date set at December 1987 was subsequently extended to December 1988.

28. The objective of restoring the previously existing basic sewerage infrastructure has been achieved. However, there is already evidence of difficulty in handling ongoing maintenance and repair of pumps in one pumping station. Nevertheless, many areas of Dar es Salaam which experienced sewage overflows are now free of this hazard.

29. The objectives of expanding the number of sewerage connections and of providing low-cost on-site sanitation have been achieved to the extent of only about 25 percent. The primary reason for this in both instances is capital cost affordability and availability for the population, together with assurance of future reliability of service. This would appear to indicate that a condition for consumer investment is an assurance of reliability and credibility of the DSSD service before their confidence is rebuilt to the point where major capital investments will be made.

30. The objectives of initiating proper operation and maintenance of the sewerage and sanitation services, of installing satisfactory financial management and cost recovery systems and of training counterparts to take over have been met to only a very limited degree. In particular, the financial objectives have not been met, and the objective of creating a viable institution has not been met. This is due partly to the organizational arrangements for DSSD as discussed under Project Design and Organization.

31. The health education component was functioning; a health education specialist was provided to DSSD as per project design and counterpart DSSD staff were trained both locally and overseas. Public health education activities were being actively undertaken as at the close of the project.

32. The financial and accounting systems and controls are weak. Although audited accounts for the project have been provided to IDA for the years 1987-88 and 1988-89, these refer only to annual capital expenditure additions to the project. There is very little information available to IDA on which to evaluate the financial performance of DSSD operations, and therefore the indicated financial results are based on information provided in the Borrower's Project Completion Report (PCR).

33. In 1988-89, the financial position was as follows, as compared with the staff appraisal report forecast for 1987:

	Per Borrower's PCR (1988-89)		Per Staff Appraisal (1987)	
	TShs('000)	US\$('000) <sup>1/</sup>	TShs('000)	US\$('000) <sup>2/</sup>
Total Sewerage Revenues	3,223	26	38,032	4,046
Total Low Cost Sanitation	4,050	32	22,002	2,341
Low Cost Construction	1,709	14	-	-
Miscellaneous Revenue	<u>781</u>	<u>6</u>	<u>1,484</u>	<u>158</u>
<b>TOTAL REVENUES</b>	<u>9,763</u>	<u>78</u>	<u>61,518</u>	<u>6,545</u>
Expenditure	50,310	402	41,063	4,368
Income before Interest	(40,547)	(324)	20,445	2,177

<sup>1/</sup> Exchange Rate at December 31, 1988: 125TShs = US\$1.00

<sup>2/</sup> Exchange Rate at June 30, 1982: 9.4TShs = US\$1.00

34. There is insufficient information available to perform a meaningful financial analysis. However, it is apparent that revenues are running at a level of a little more than 1 percent of what was projected in USDollar terms, and the economic and financial rate of return are almost certainly negative--as compared with a forecast economic return of 6.9 percent on the sewerage component and 5.9 percent on the low-cost sanitation component.

35. The difference in revenue generation and resulting rate of return is due to a persistent unwillingness by the DCC to adopt and collect tariffs based on cost of service, combined with an overestimation in the SAR of the growth in sewerage connections, pit latrines, the number of pit-emptiers, and the number of revenue generating trips per vehicle. The latter factors are accentuated by the refusal of DCC to place some 20 pit-emptiers under DSSD.

#### G. Project Sustainability

36. The evaluation of project design and organization, project implementation and project results leads to the conclusion that prospects for project sustainability are poor.

37. Despite a significant capital outlay, DSSD is losing cash. It is constrained by its subordination to Dar es Salaam City Council. Evidence is

mounting that the improvement in the pit-emptying service that occurred earlier in project implementation is not being sustained. The majority of vehicles is once again no longer serviceable.

38. Thus the likelihood is for a gradual deterioration in the system and service over the next few years to its previous levels.

#### H. Bank Performance

39. In general, the impression is that IDA performed well through the early stages of the project cycle. The project risks were well identified, and the overall scope and approach to the project were appropriately defined at the time of project identification. TAG contributed usefully in the emphasis on low-cost sanitation and health education.

40. However, it would appear that both during appraisal and negotiations there were errors in judgment. As mentioned under Project Design, the SAR did not establish an appropriate institutional and legal framework for DSSD--despite the advice of other IDA staff. The proposal to combine sewerage billing with electricity and/or water on the same bill when these are three unrelated service providers, without adequately considering the implications was also ill advised. At negotiations--despite the advice of senior members of the Loan Committee--IDA did not insist on two lesser conditions which would, nevertheless, have improved performance:

- (a) the raising of tariffs prior to credit agreement;
- (b) counterpart management in place prior to credit effectiveness.

41. IDA also accepted the Borrower's argument that consumers should not pay more until service is improved. The relevant issue is whether consumers are paying an equitable tariff for the service they are now receiving and have received in the past. The consequence of IDA's approach was continuous procrastination with respect to the implementation of appropriate or reasonable tariffs recognizing cost recovery.

42. During supervision, IDA's performance may be regarded as "mixed". As a result of supervision out of both Nairobi and Washington, with both TAG and RWSG-EA involved, it appears as though IDA has from time to time delivered mixed signals to the Borrower or its PIU. It also appears that, from 1983 to late 1987, very little pressure was brought to bear by IDA on the Borrower to either raise its tariffs, to recruit competent counterpart staff or to facilitate the activity of the technical assistance management team. This may have been the result of comparatively infrequent supervisory missions (approximately every six months) and a lack of continuity of staff, particularly financial analysts.

#### I. Borrower Performance

43. It would appear that the PIU under ARDHI and later under MAJI performed its role in an acceptable manner, facilitating the execution of the consultancy and construction contracts for which it was the coordinator.



44. However, the LGSC and the DCC have not been very helpful to the execution of the project.

45. For example, the LGSC received its first request to recruit managerial counterparts in August 1984. But, it was not until May, 1986 that the first counterpart was provided. A number of staff were hired by LGSC without DSSD's involvement and proved totally unsuited to the job, by LGSC's own admission. Delayed hiring of counterparts has been one of the project's major weaknesses. Two of the counterpart positions--for finance and for electrical/mechanical--had not been filled after over 3 years, suggesting also that LGSC's salary and conditions of service were unattractive to qualified technical professionals.

46. DCC has generally provided very little support. It has obstructed requested tariff increases; it has diverted 20 pit-emptiers from DSSD to its Health Department; it has delayed the consolidation of DSSD into a properly functioning depot.

#### J. Project Relationships

47. There was a combination of diffuse organizational responsibility for the project on the part of the Borrower and fairly frequent changes in supervisory responsibility on the part of IDA. As a result, the project has not been able to benefit from consistent supervision which would have been particularly helpful in dealing with the financial and institutional issues.

#### K. Consulting Services

48. The consultants and contractors responsible for the basic sewerage and treatment components performed their functions adequately although delays in the provision of training for station operators and maintenance technicians occurred in Contract No.2 for the supply and installation of pumping equipment.

49. Performance under the consulting services agreement to supply technical assistance to DSSD was not entirely satisfactory. Partly this can be explained by the limitations of the project design previously referred to (Section D). In addition, in a number of instances, inadequate personnel were supplied which suggests that the remuneration or conditions of service offered by the supplier to its employees was inadequate to attract good people under Tanzanian conditions. Furthermore, there appears to have been little support provided to the team at an institutional level to strengthen their position in discharging their duties. The contract was let with IDA's approval without competitive bidding because of the Borrower's wish to use a British institution with which it had been actively working and which could supply personnel who would be familiar with the Local Government practices of Tanzania which followed the British model. In retrospect it would appear that this contract should have been let on an open competitive basis, with the requirements for experience of British practice specified.

**L. Project Documentation and Data**

50. The weaknesses of the legal agreements for the project have already been referred to--namely that they reflect the weaknesses in Project Design, and that the conditions of effectiveness did not include the requirements for tariffs at cost recovery levels and counterpart management to be in place.

51. The usefulness of the SAR has been limited because the project fell behind schedule from credit negotiations onwards; the financial data available at the time of appraisal were virtually non-existent, and the assumptions underlying the appraisal projections tended to be optimistic rather than conservative.

52. Other than the project accounts maintained by the PIU for project capital cost, there are virtually no reliable data on the project. Audited accounts available within IDA for the project were for the years 1984-85, 1987-88 and 1988-89; however these provide only a statement of capital additions to the project within their respective years (without an accumulated balance for each category). The Borrower's PCR contained an unaudited summary of revenues and expenditure which has been referred to (Para. 32).

**PART II: PROJECT REVIEW FROM BORROWER'S PERSPECTIVE**

**A. Evaluation of the Bank's Performance**

**Bank's Performance during Project Evolution**

53. Project Identification. As a result of the cholera outbreak and the prevalence of other diseases related to sanitation in Dar es Salaam and taking cognisance of the fact that the sewerage system in Dar es Salaam was not working properly, the Government in 1978 requested IDA assistance with the preparation of a project to improve and extend the city's sewerage system. This led to assistance by IDA through the Project Preparation Facility (PPF) (CR. P074-TA) totalling US\$1.0 million for the preparation of a master plan, feasibility studies and preliminary designs for sewerage and sanitation in Dar es Salaam and technical assistance.

54. Identification of the project was carried out by the Government with full participation of IDA. Originally other towns, namely, Moshi, Arusha, Morogoro and Mwanza were to be included in the studies using the PPF funds; but due to the high costs, the studies for these towns were done using local funds.

**Project Preparation**

55. Preparation of the project was carried out by ARDHI, DCC and IDA with assistance from TAG (The Bank/UNDP Technical Advisory Group) who were involved in the low cost sanitation studies for Dar es Salaam and other towns. Preparation was carried out between July 1978 and March 1981.

56. Project Appraisal. One major revision to the original scope of the project was to exclude the component involving the enhancement of TANESCO's computer capacity so it could accommodate additional computer needs by DSSD. The elimination of this component was as a result of TANESCO having themselves obtained funding from IDA. This led to the decision that computers would be bought for NUWA and DSSD while carrying out joint billing functions.

**B. Bank's Performance during Project Implementation**

57. Frequency of Supervision. During the course of implementation, IDA frequently sent missions to review progress. These review missions were very useful and very helpful as they helped to keep project implementation on course and assisted in early solving of problems. While the timing of the review missions was appropriate their frequency at half yearly intervals was not adequate. Reviewing staff from IDA were quite experienced for the work. However, frequent changes of reviewing staff took place and it was felt the effectiveness of these missions may have been eroded (the project experienced a total of six project officers). As such it is felt that considerable time was being spent by the new mission staff getting familiar with the project but

by the time they had just got used to the project they were moved to other assignments.

58. Procurement Procedures. Specific to the problems created by procurement procedures of IDA is the construction of VIP latrines. DSSD, after completing construction of the 100 school latrines, suggested that they would be in a position to construct the 3,600 latrines using local artisans (fundis). In the process, the artisans would learn the techniques and be able in future to carry out construction for other people. IDA confirmed it was not possible to finance the component from the credit and accepted to finance only the purchase of VIP kits through competitive bidding. The first and second trials of obtaining VIP kits through tendering were also not successful and it was suggested that they be purchased directly from the Buguruni VIP Kit manufacturing plant which is owned by the Sewerage and Drainage Division in MAJI. Again IDA indicated this was against regulations and that it would not finance the component in this event. Use of the Buguruni Plant would have assisted in the achievement of the long-term sector objectives as the plant offers material support and training towards setting up and construction of VIP latrines in other towns. It was not until the middle of 1987 that IDA agreed in principle to the need for utilizing the Buguruni Plant capacity but up to the end of the project, no clear approval had been given. This naturally affected the achievement of the objectives for this component, as delay in concluding and satisfying IDA procurement policy resulted in considerable implementation delays.

#### Bank's Performance--Lessons Learned

59. The assessment of the sector priorities and problems at the time of appraisal was appropriate and the original project emphasis valid. Long delays in start-up resulted in the project not being fully completed even after a year's extension in completion date.

60. IDA insists on international competitive bidding, although in some instances it may be economical to procure the goods from within the country. While IDA does not prevent direct procurement within the country, the limits for which local procurement is acceptable are very low. Also, there are instances where only one manufacturer exists in the country and it may not be possible to purchase from this manufacturer because it would be uncompetitive. Although there are special procurement allowances, it is not clear when and how one can justify procurement using this arrangement. It is advisable to revise these rules/requirements as in some instances they limit growth of local industry.

#### C. Evaluation of the Borrower's Performance

##### Borrower's Performance during Project Evolution.

61. Originally GOT's intention was to concentrate upon conventional sewerage components but due to projects which were being carried out by UNDP and TAG, recommendations were made to include low cost sanitation in the studies and subsequently for implementation. Therefore project preparation was carried out by GOT and DCC with the assistance of IDA, UNDP and TAG.

62. Apart from the general improvements to the existing sewerage system which formed a major part of the project, and the low cost sanitation or on-site sanitation undertakings, the project was intended to be a vehicle for institutional change and management improvements. It was in this respect, that formation of DSSD was planned. It was also planned to appoint expert managers to initiate proper operation and maintenance of the sewerage and sanitation systems and to install satisfactory financial procedures.

Borrower's Performance during Project Implementation and Operation

Physical Construction

63. Physical Accomplishment. The main changes as compared to the original targets are as follows:

(a) Lengths of sewer rehabilitated were less than 130km since sewerage at areas like Ubungo, Buguruni, and Ukonga could not be rehabilitated due to high cost;

(b) Fifteen pumping stations were rehabilitated out of the original 17. Those which were not rehabilitated are the City Centre One which is a very old station and it was deemed advantageous to bypass it and the Faculty of Medicine (Muhimbili) pumping station which was new. Also the pond systems for Ukonga and Buguruni could not be rehabilitated and only seven out of nine systems were rehabilitated;

(c) Two hundred new sewer connections were made out of the planned 600. Two main reasons for this were the high cost of new connections and optimistic projections;

(d) Another area where performance was poor was in the construction of pit latrines. While the target was for 3,600 at residences and 100 at schools, only the 100 demonstration latrines could be constructed fully and 660 at residences using the loan scheme. Major causes for this were lack of adequate numbers of applicants and procurement problems. Although the objective of this component in terms of numbers of latrines was not reached, an awareness was created among the people which will serve as a good starting point for future operations;

(e) Four new dumping stations were constructed and one existing one rehabilitated. These are so located that it is now economical to offer pit emptying services; and

(f) Due to the high cost of vehicle rehabilitation, only six pit emptying vehicles could be economically rehabilitated and eight new ones purchased in addition to the twenty-two donated by Japan.

64. Project Delays. Delays for contracts for refurbishing and replacement of sewers and supply and installation of pumping equipment were the result of redesign necessitated by the unknown state of the buried sewers and pumping stations which were under sewage surcharge. There were considerable delays in the design of workshop and dumping stations and subsequent start-up and completion of construction because the consultant had taken up this job as an additional assignment and did not have ready and

available staff to work on this work immediately. These delays invariably resulted in increased costs.

65. Procurement Procedures. The procurement requirements to be satisfied for the project were those for IDA and regulations set by CTB although those for CTB are not clearly known and are not written down. There were two procurement disagreements with the CTB, the first involved the construction of the temporary headquarters for DSSD and the second the construction of cabs and tanks for the rehabilitation of pit emptying vehicles. As these disagreements could not be resolved for a very long time, a parastatal organization did the work. This resulted in conflict with IDA over adherence to its procurement guidelines.

66. Project Costs and Disbursement Schedule. At the time of appraisal, it was estimated that the total project costs would be US\$29.1 million equivalent to Tanzania shillings 273.5 million. The actual project costs have now been worked out to a total of TSh1,681.0 million or US\$26.7 million. As the actual costs are arrived at using the exchange rates on the date that payment is made by IDA and given that not all of the statements of disbursement had been received at the time of preparation of this report, the final equivalent total project cost in US dollars may be different from the above. Approximately 5 percent of the total project costs was financed from government resources while the IDA credit financed 95 percent.

67. For the first four years of the project only about 22 percent of the project funds were expended, with the remaining 78 percent being spent in the last two years. This was due to the fact that most contracts had been let by then and no reimbursement claims from the credit were made in the earlier years. While in the end these later expenditures did not jeopardize the implementation programme, it is important to mention that had the one year extension of closing date not been granted about 58 percent of the project funds may not have been expended. At the original target completion date the major components not completed included the workshops and dumping station.

68. Performance of Consultants, Contractors and Suppliers. The responsibility of the consultants was for designs, supervision of construction and rehabilitation works. They also supervised the contractors during commissioning of the works and initial training of local staff in operation and maintenance, especially of pumping stations.

69. There was one problem whereby the consultant delayed the designs for workshops and depots and dumping stations and this affected the completion of the related supply and construction work. This problem, however, was a general problem of the consultants, suppliers and contractors as related to work schedules. None finished their work in the time programmed, and even after granting of time extensions to cater for various additions and unforeseen circumstances, actual completion times were beyond the planned completion times. Participation by local contractors and consultants was limited in light of the procurement guidelines used for the project.

#### Plant Operating Performance

70. Operating Performance and Problems. Major operational problems relate to performance of pumping stations and pumping mains. The Msasani

pumping station has continued to operate unsatisfactorily because of a ceased motor which it has been difficult to repair adequately locally and a cracked pump casing. It is believed these problems may have been caused by indiscriminate dumping of pit latrine/septic tank wastes into the pumping station, due to the fact that these services are not under one department. The other main problem is that of frequent bursts of the Mikocheni pumping main. This pumping main was not rehabilitated in the past exercise but it passed the tests during the initial pumping tests and it was felt that it was in order. Sporadic and unreliable electricity supply and corrosion have contributed to operational difficulties.

71. Most of the pumping plants, with the exception of the problem areas mentioned above, (Para. 70) are working properly and their performance compares very well with the specifications and expectations. The waste stabilization ponds for the treatment of wastes are operating adequately. Analysis of pond sewage before treatment and after shows that pond performance is within acceptable levels. Also, in the case of the sea outfall, studies have shown that no pollution of the sea shore can be linked to discharges through the outfall. Many areas of Dar es Salaam which had been subjected to sewage overflows which threatened the people's health are now free of the hazard. Notable examples are the reduction of smells around the Agha Khan Hospital and sewage overflows at Tazara flats and Airport areas. Thus, there has been a tremendous improvement in environmental conditions as a result of this project.

72. Financial Performance of DSSD. The financial performance of DSSD has been very unsatisfactory. So far no sewerage charges have been effected and charges for septic tank and pit emptying are still lower than those recommended by the sewerage tariff study and approved by Government. This has been caused by DCC's reluctance to accept and adopt the new rates.

73. During appraisal it had been estimated that total DSSD revenues from such sources as septic tank/pit latrine emptying, sewer connection, and sewer unblocking charges would rise from TSh3,632,000 during 1985-86, the first year of operation to TSh61,518,000 during the fourth operational year, 1988-89. Actual revenues were very much lower at TSh311,220 and TSh9,762,643 during the respective corresponding periods. Overall expenses were slightly lower with the average annual expenditure being TSh21,351,768 compared with an estimate of TSh29,218,800 at appraisal.

74. For the sector as a whole, delays in carrying out and concluding the sewerage tariff study meant that levels of tariffs to be charged could not be ascertained in the earlier years of DSSD's operation. Likewise cut back on the number of pit emptiers to be purchased and the reluctance of DCC to transfer some pit emptiers now with the Health Department to DSSD have limited the revenue generating base for pit latrine/septic tank emptying services to a level much lower than anticipated.

75. With unsatisfactory financial performance no attempt has been made to work out the new financial rate of return as no positive income has been generated.

### Institutional Development and Performance

76. DSSD was created to provide improved operation and maintenance of the sewerage and sanitation systems. To assist in setting it up, services of external agencies were used to provide expatriate technical assistance staff whose responsibility was to determine and establish systems for DSSD and train local counterparts. There were some positive achievements by the experts but frequent personnel changes aggravated by the inadequacy and poor performance of some of them hindered achievement of objectives. DSSD is now run and managed entirely by local staff who, in spite of limited service experience, have made impressive improvements in budgetary controls and procedures, inventory controls, and plant operation and maintenance programs. Improvements in financial systems have been rather nominal and nothing has been done on billing and collection using computers. Most of DSSD's functions are being computerized including stores, sewer connection charges, and estimates.

77. DSSD has almost grown to full capacity. Operational staff are required, however, for the newly completed workshops and depots. Recruitment of middle- and higher-grade staff has been hampered by the bureaucratic procedures of the Local Government Service Commission and exacerbated by uncompetitive salaries and lack of fringe benefits. Nevertheless, DSSD has been able to maintain in part most of the key staff that have already been employed. Turnover has been low. Training of staff has also been successful. So far a total of about 12 people from senior personnel categories have been trained overseas. In addition, in-country training courses have been given to operational staff. The objective of setting up a department to take over the rehabilitation works is largely successful.

### Borrower's Performance--Lessons Learned.

78. The original project designs were well conceived and the only areas of the project which could be considered as not having had adequate preparation could be those in which implementation has been very nominal. These include service connections and construction of VIP latrines. While targets in this respect may have been realistic, underlying problems of implementation including the understanding of peoples' willingness to apply for loans to build VIP latrines and sewer connections given the prevailing economic difficulties may not have been adequately studied. In addition, delays in implementing revised tariffs after approval by Government did not help to improve the financial performance of DSSD.

79. Assistance to local contractors and local consultants to obtain contract awards could not be increased in light of procurement guidelines which were being used for the project. In future, however, consideration needs to be made to giving more preference to local contractors and consultants both in preparing the shortlist or prequalification and in tender or proposal evaluation. In order to build local technical self sufficiency there is greater need to support the local institutions and enhance their growth. Future projects could also consider mandatory joint ventures between local and foreign consultants and contractors.



D. Relationship between IDA and Borrower

80. The need for strengthening the implementation capacity of the executing agency was adequately addressed. Scheduling of procurement and constructional activities was fairly realistic and there were no major differences between the Borrower and IDA regarding standards for civil works or equipment.

**PART III: STATISTICAL INFORMATION**

**A. Related Bank Loans and/or Credits**

This was the only credit in the sewerage and sanitation sector at the time of completion.

Part of the Technical Assistance component for NUWA was transferred to Credit 1687-TA which is due to close in December 1990.

**B. Project Timetable**

<u>Item</u>	<u>Planned Date</u>	<u>Revised Date</u>	<u>Actual Date</u>
Identification	-		Jul 1979
Preparation	Jan 1981		Apr 1981
Appraisal Mission	Jun 1981		Jul 1981
Credit Negotiations		May 1982	Aug 2-11, 1982
Board Approval	Dec 1981	Jul 1982	Dec 21, 1982
Credit Signature			Mar 17, 1983
Credit Effectiveness	Mar 1983	Jul 15, 1983	Sep 1, 1983
Credit Closing	Dec 31, 1987		Dec 31, 1988
Credit Completion	Jun 30, 1988		Dec 31, 1988

**C. Credit Disbursements**

**Cumulative Estimated and Actual Disbursements  
(US\$'000)**

<u>Bank Fiscal Year</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
Appraisal Estimate	1,700	6,600	13,000	18,300	21,600	22,500	22,500	22,500
Actual	0	2,300	6,000	9,000	10,700	13,600	18,100	20,300

**D. Project Implementation**

<b>Indicators</b>	<b>Actual Estimates</b>	<b>Actual</b>
<b>Project Cost - Total US\$M</b>	29.1	25.4
<b>= Total TShsM</b>	273.5	= 1,659.5
<b>Completion Date</b>	June 30, 1987	December 31, 1988
<b>Closing Date</b>	December 31, 1987	December 31, 1988
<b>Sewerage Rehabilitation and Upgrading</b>	Rehabilitation and replacement of about 130km of sewers and pumping mains	Rehabilitation and replacement of about 85km of sewers and pumping mains.
	Repair of sea outfall and construction of screen bypass and intake structure	Repairing of the sea outfall and construction of screen bypass and intake structure
	Rehabilitation of 17 pumping stations	Rehabilitation of 15 pumping stations
	Repair and improvement of 9 waste stabilization ponds	Improvement and repair of 7 waste stabilization ponds
	Construction of 600 new sewer connections	Construction of 200 new sewer connections
<b>Low-Cost Sanitation</b>	Construction/upgrading of about 3,600 latrines at residences and 100 at schools	Construction/upgrading 660 latrines at residences and 100 at schools
	Construction of 5 new dumping stations and rehabilitation of one dumping station for pit emptying vehicles	Construction of 4 new dumping stations and rehabilitation of one dumping station
	Rehabilitation of 14 pit emptying vehicles, acquisition of 16 new ones	Rehabilitation of 6 pit emptying vehicles, acquisition of 8 new ones

**E. Project Costs and Financing**

**Project Costs (US\$M)**

Item	Appraisal Estimate			Actual		
	Local Costs	FX Costs	Total	Local Costs	FX Costs	Total
Sewerage	7.6	4.4	12.0	0.5	11.5	12.0
Sanitation	2.9	1.9	4.8	0.4	1.8	2.2
Common Services	-	-	-	0.4	5.4	5.8
Assistance	10.5	6.3	16.8	1.3	18.7	20.0
to ARDHI	-	0.2	0.2	-	0.1	0.1
to DSSD	0.2	2.2	2.4	-	2.9	2.9
Training	0.5	0.9	1.4	-	0.7	0.7
Tech. Assist. to NUWA	0.5	1.0	1.5	0.1	1.6	1.7
Tech. Assist. to Tanesco	0.1	0.2	0.4	-	-	-
<b>Total Baseline Costs</b>	<b>11.8</b>	<b>10.9</b>	<b>22.7</b>	<b>1.4</b>	<b>24.0</b>	<b>25.4</b>
Physical Contingencies	1.0	0.9	1.9	-	-	-
Price Contingencies	3.1	1.4	4.5	-	-	-
<b>Total Project Costs</b>	<b>15.9</b>	<b>13.2</b>	<b>29.1</b>	<b>1.4</b>	<b>24.0</b>	<b>25.4</b>
FX-US\$	9.3	13.2	22.5	-	24.0	24.0
-SDR	8.5	12.1	20.6	-	20.3	20.3

**Project Financing**

<u>Source</u>	<u>Planned (Credit Agreement) (US\$ '000)</u>	<u>Final (US\$ '000)</u>	<u>(%)</u>
IDA Expenditure Categories	22,500	24,000	106.7
Government of Tanzania	<u>6,600</u>	<u>1,400</u>	21.1
<u>Total</u>	<u>29,100</u>	<u>25,400</u>	

**Comments:**

1. The Credit was for SDR 20,600,000 which was equivalent to US\$22,500,000 at the time of appraisal. As the result of appreciation of the SDR relative to the US\$, there was an undisbursed balance of SDR 350,000--even though total withdrawals were equivalent to US\$24,000,000.
2. The total project expenditure was US\$3.7 million below plan mainly as the result of:
  - only about 200 out of 600 sewer connections installed;
  - only 660 out of 3600 pit latrines installed;
  - only 6 out of 14 pit emptiers rehabilitated.

**F. Project Results**

**Direct Benefits**

	Appraised Estimate	Estimated at Closing Date	Estimated at Full Development (5yrs after closing)
New Sewerage connections	600	200	
New Pit Latrines	3,600	660	1200 <sup>1/</sup>
DSSD Latrine emptiers- available	30	14	14
Operational	28	3 <sup>2/</sup>	
Number of loads Transported annually	69,048	1,660 <sup>3/</sup>	

Source: DSSD Progress Report, February to April, 1989

- <sup>1/</sup> 5 Pit Latrines constructed per month for loan scheme; assume 5 Pit Latrines per month for cash; equivalent to 120 per year.  
<sup>2/</sup> 2 to 4 vehicles are operational.  
<sup>3/</sup> 415 Trips in 3 months, equivalent to 1660 per year.

**Economic Impact**

	Appraisal Estimate	Actual at Final Development
Economic Rate of Return:		
Sewerage	6.9%	Negative
Sanitation	5.9%	Negative

Comments:

1. There are insufficient Data available to perform an economic and financial rate-of-return analysis.
2. However, continuing cash subsidies from Government, with little prospect of any real improvement in revenues would suggest a negative financial and economic return.

Financial Impact

See 1 above

Studies

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	Purposes as Defined at Appraisal	Status	Impact of Study
1. Tariff Study	Implement cost recovery	Completed	Not implemented by DCC
2. Review of Legislation	Establish DSSD as an entity	Completed	Yet to be implemented
3. Aerial survey and Survey of existing connections	Ensure full billing and establish system	Completed	Not implemented
4. Solid waste study	Develop proposal	Completed	Not implemented (requires funding)
5. Detailed design for Phase III	Prepare for Phase III	Completed	Not implemented (awaits funding for next project)

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**G. Status of Covenants**

The status of compliance with the major covenants is as follows:

Covenant		Subject	Deadline for Compliance	Status
<b><u>Development Credit Agreement</u></b>				
Section 3.03	(a)	Maintain PIU	Signing	Satisfactory
	(ii)	Maintain PMC	Signing	PMC did not meet regularly
	(b)	Staff PIU	Signing	Satisfactory
Section 3.06	(1)	Complete Survey of Connections	Dec 31, 1988	Completed Dec 1988 No action taken
Section 3.06	(i)	Complete Tariff Study	June 30, 1984	Dec 31, 1987
	(ii)	Develop New Tariff Structure	Dec 31, 1984	Dec 31, 1988
	(iii)	Implement Revised Tariffs	Dec 31, 1984	Not implemented
Section 3.09		Acquire land for projects	June 30, 1984	Actions have been taken
<b><u>Project Agreement</u></b>				
Section 2.02		Adopt MIS and billing systems similar to TANESCO	June 30, 1984	As at Apr 1989, not implemented
Section 2.03		Introduce loan scheme for householders	June 30, 1983	Implemented in 1986
Section 4.01		Maintain separate accounts for DSSD	Signing	Adequate accounts not implemented as at Apr 1989
Section 4.02		DCC shall forward audited consolidated accounts and separate statements for DSSD within 6 months of each year end	Annually	Last audited accounts available within IDA appear to be for 1984-85
Section 4.03	(a)	DCC shall charge pit-emptying tariffs based on cost recovery	FY 1984	Not compliant
	(b)	Not pit latrine emptying unless cash paid in advance		Not compliant
Section 4.04	(a)	DSSD shall generate funds of 20 percent of average annual capital expenditures	FY 1985	Not compliant



H. Use of IDA Resources

Missions

<u>Stage of Project Cycle</u>	<u>Month/Year</u>	<u>Number of Persons</u>	<u>Days in Field</u>	<u>Specialization Represented</u>	<u>Performance Status</u>	<u>Types of Problems</u>
<b>Through Appraisal</b>						
Project Ident.	7/78	1	4	Sanitary Engineer (Project Officer)		
Pre Appraisal	1/80	1	8	Sanitary Engineer (Project Officer)		
Appraisal	7/81					
<b>Board Approval</b>						
Post Appraisal	3/82	3	8	Loan Officer Sanitary Engineer (Project Officer) Legal		
<b>Supervision</b>						
3/83	3	14		Sanitary Engr. Financial Analyst Sr. Urban Project Officer	No significant problems	Institut'l Management
2/84	2	18		Sanitary Engr. Financial Analyst	Management	Institut'l
9/84	3	13		Sanitary Engr. Financial Analyst Consultant		
9/85	2	9		Sanitary Engineer Consultant	2	Institut'l Management
3/86	3	13		Sanitary Engineer Financial Analyst Low Cost Sanit. Spec.	2 Staffing	Institut'l Management
11-12/86	2	12		Sr. Sanitary Engr. Low Cost Sanit. Spec.	3	
5/87	1	9		Sr. Sanitary Engr.	2 Management	Institut'l
11/87	2	14		Sr. Sanitary Engr. Financial Analyst (Consultant)	2 Staffing Systems	Institut'l Management Financial
7/89	1	5		Sr. Sanitary Engr.	Training	Equipment