AFRICAN DEVELOPMENT BANK GROUP

NIGERIA

BAUCHI TOWNSHIP WATER SUPPLY PROJECT

Project Performance Evaluation Report (PPER)

OPERATIONS EVALUATION DEPARTMENT
(OPEV)

20 June 2000

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This report was prepared by Mrs. Gennet Yirga-Hall, Principal Post-Evaluation Officer and Mr. V. R. Mehta, Consultant, following a mission to Nigeria in November 1999. Any further matters relating to this report may be referred to Mr. G.M.B. Kariisa, Director, Operations Evaluation Department (Extension 4052).

ABBREVIATIONS

ADB	African Development Bank
AIC	Average Incremental Cost
BSEPA	Bauchi State Environmental Protection Agency
BSWB	Bauchi State Water Board
DFID	Department for International Development (Government of the U.K.)
EA	Executing Agency
EIRR	Economic Internal Rate of Return
EPA	Environment Protection Agency
ICB	International Competitive Bidding
IMDWR	Integrated Management and Development of Water Resources
NEPA	Nigeria Electric Power Authority
NGO	Non Governmental Organisation
NWRP	National Water Rehabilitation Project
PCR	Project Completion Report
PPER	Project Performance Evaluation Report
PTF	Petroleum Trust Fund
RMC	Regional Member Country
UA	Unit of Account
UfW	Unaccounted for Water

PREFACE

1. The Bauchi Township Water Supply Project of the Federal Republic of Nigeria was completed in 1992 and a Project Completion Report (PCR) was prepared in 1994. The PCR included a detailed analysis and discussion of all the project implementation aspects. The project was also selected for the thematic Study on Bank Group Experience in the Urban Water Supply and Sanitation Sector.

2. Since the PCR was well prepared and had fairly adequately covered the implementation-related issues, it was concluded that preparation of an Intermediate Project Performance Evaluation Report (IPPER) would be sufficient to mainly assess the development effectiveness of the intervention. As such, the full PPER format is not applied. The IPPER focuses mainly on the material relevant to the development effectiveness and impact issues and the outcomes based on a "with and without" evaluation approach. Lack of performance indicators and base line data have, however, limited the scope of the analysis in the IPPER.

3. This report has been prepared following a mission to the Federal Republic of Nigeria from 20 to 30 November 1999. The mission while in Nigeria met with the officials of the concerned Federal and Bauchi State ministries and departments. It also had detailed meetings with the officials of the Bauchi State Water Board (BSWB), the Executing Agency for the project. The mission also paid a courtesy call and had a briefing session with the Executive Governor of the Bauchi State. The Mission also held meetings with the concerned officials of the World Bank, the Department for International Development (DFID) of the British High Commission and UNICEF.

4. The IPPER is based on the information contained in the project files, the appraisal and the project completion reports and the data gathered during the mission. A draft of the report was circulated for review and comments to the Federal Government of Nigeria, the State Government of Bauchi and BSWB, and to the concerned operational and other departments and offices within the Bank. Comments received have been considered and incorporated in the final report, to the extent feasible.

SUMMARY DATA SHEET

1.	COUNTRY	-	Nigeria
2.	PROJECT	-	Bauchi Township Water Supply
3.	LOAN No.	-	B/NGR/WAS/88/8
4.	BORROWER	-	Federal Government of Nigeria
5.	BENEFICIARY	-	Bauchi State Water Board
6.	EXECUTING AGENCY	-	Bauchi State Water Board

A. LOAN

		Appraisal Estimate	Actual
1.	Request for loan (date)		Early 1987
2.	Amount (UA million)	44.95	44.95
3.	Interest rate	7.46%	7.46%
4.	Commitment charge	1%	1%
5.	Grace period	4 years	4 years
6.	Repayment period	16 years	16 years
7.	Loan negotiation date		September 8, 1988
8.	Loan approval date		October 18, 1989
9.	Loan signature date		May 30, 1989
10.	Loan effectiveness date		October 26, 1989

B. PROJECT DATA

		Appraisal			PCR		
		F.E.	L.C.	TOTAL	F.E.	L.C.	TOTAL
1.	Total cost (UA million)	44.94	5.73	50.67	45.80	3.50	49.30
2.	Financing Plan						
	ADB (UA million)	44.94	-	44.94	44.95	-	44.95
	Government (UA million)	-	5.73	5.73	0.85	3.50	4.35
3.	Deadline for 1st disbursement		June 30, 1990.				
4.	Effective date of 1st disbursement		-		April 1990		
5.	Effective date of last disbursement		-		October 1993		
6.	Commencement of Work		January 1989		February 1990		
7.	Date of completion of work		December 1991		October 1992		

C. PERFORMANCE INDICATORS

1.	Cost over-run/ under-run	Project scaled down
2.	Time over-run (months)	10
	▪ Slippage on effectiveness	None
	▪ Slippage of 1st disbursement	None
	▪ Slippage of last disbursement	3
	▪ Number of extension of deadline for last disbursement (number)	One
	▪ Slippage on completion date	10
3.	Project implementation status	Completed
	▪ Date project started	February 21, 1990
	▪ Date project completed	October 1992
4.	Implementation Performance and Project Outcome	
	Implementation Performance	Unsatisfactory
	Bank Performance	Unsatisfactory
	Project Outcome	Unsatisfactory

D. MISSIONS

MISSIONS	Dates	No. of Persons	Person-weeks
- Identification/Preparation	Jan. 1988	1	2
- Appraisal	May 1988	2	4.9
- Supervision	June, 1991	1	2
""	March 1993	1	0.3
""	June 1993	2	0.6
PCR	May 1994	2	2
PPER	Nov. 1999	2	3

E. LOAN DISBURSEMENT (UA)

	Appraisal	Actual
- Total disbursed	44,950,000	44,950,832
- Amount cancelled		
- Unused balance		
- Yearly disbursement		
1989	9,440,000	-
1990	24,210,000	17,879,619
1991	11,300,000	16,587,259
1992	-	9,572,312
1993	-	911,642
TOTAL	44,950,000	44,950,832

EXECUTIVE SUMMARY

1. The Bauchi Township Water Supply Project was conceived in line with the sector goal of promoting good health and economic development in the State of Bauchi in Nigeria through the provision of adequate water supply. Specifically, the project aimed at raising the demand level from about 35 litres/capita/day in 1987 to 106 litres/capita/day for an estimated population of about 400,000 by the year 2000. This was to be achieved by increasing the reliability and adequacy of the potable water supply to the town of Bauchi and its environs. The scope of the project comprised the construction of a new 45,500m³/day capacity treatment plant, a high lift pumping station, a stand-by power station, about 79 km of pumping main and transmission and distribution pipelines and provision of logistics. The project also included technical assistance for engineering services as well as institutional building.

2. The estimated total cost of the project was UA 50.67 million. An ADB loan of UA 44.95 million was extended to the Federal Government of Nigeria for on lending to Bauchi State Government in October 1989. The Bauchi State Water Board (BSWB) was the Executing Agency and beneficiary of the project. The balance of the project cost was to be raised by the Government.

3. The final project cost was UA 49.30 million. The project, with some reduction in scope, was completed in October 1992 compared with the appraisal completion date of December 1991, registering a delay of 10 months. The Management Consultancy Services contract for institutional strengthening of BSWB was abandoned midway, due to a dispute between the consulting firm and the BSWB.

4. The plant was operating satisfactorily for the initial couple of years after commissioning, but subsequently it has been operating at sub-optimal levels. The performance had deteriorated further since the PCR was completed. The operation of the pumping station suffered from shortage of qualified and trained staff and lack of operating funds. Later, a two-year Turn-Around-Maintenance contract was awarded to the original manufacturers of the plant for the years 1997-1998, but was suspended half way and consultants withdrew their staff because of non-payment. The consultants also withheld supplies of some vital spares until their outstanding payments were cleared. Because of the use of steel pipes without Cathodic Protection and the effect of excessive chlorine from a now obsolete chlorine dosing plant, the distribution network of pipes had corroded prematurely and developed widespread leakage. The maintenance and upkeep of the standby diesel generators and the Gubi dam was also inadequate.

5. Unaccounted for Water (UfW) caused by thefts and rampant leakage in the system was substantial. Leak detection equipment and consumer meters, though procured under the project, were not fully installed at the time of the PPER mission. According to a conservative and rough estimate of BSWB on the basis of estimated production and the number of households in the areas connected, UfW could be as high as 40 percent, compared with 15 percent assumed at appraisal.

6. BSWB had not been able to achieve its mandated objective of full cost recovery in its operations. Its revenues from supply of water were not able to cover even its operation and maintenance costs. A number of tariff increases had been enforced but since the base rates were very low, the current rates still did not cover the long-run marginal cost of supply. Apart from the high level of UfW, BSWB lacked management tools to institute norms such as accountability, productivity and quality of services to improve its performance and avoid the need to revert to tariff increases that merely masked the utility's inefficiency.

7. There was also the absence of metering at both stages of production and supply of water and incomplete enumeration of customers. In the absence of metering, consumption patterns were not available. Figures of water demand, sale and billing continued to remain incomplete and unreliable. In addition, the accounts were fragmented and incomplete. State Government had continued to repay loans for capital investments and provide subventions to BSWB to cover the costs of chemicals and electricity. All the above factors rendered the calculation of benefits unreal and speculative. Against this background, the IPPER did not attempt to re-estimate rates of returns. This is explained in greater detail in paras 3.3.1 to 3.3.3.

8. At the institutional level, there was no single agency for an integrated management and development of all water resources for their most efficient use. In addition, in Bauchi, the regulatory role of the Environmental Protection Agency was compromised as it was entrusted with not only regulating and monitoring environmental standards but was also charged with the executive responsibility for sanitation in the town. As per a 1998 Edict, the BSWB was on paper a fairly autonomous government utility, but the Government had not yet appointed the Board of Directors. This suggested lack of full commitment on the part of the government. Until the government strongly supported BSWB's autonomy and operational independence, the expected improvement in BSWB's service delivery or its financial performance was unlikely to materialise.

9. The project component for institutional development for enhancing the financial management capability and viability of BSWB was not implemented. The commercial and accounting capabilities of BSWB continued to remain extremely weak and the Board was facing acute problems in areas such as enumeration of customers, billing and collection of revenue, financial accounting, cost accounting, stock control, budgetary control etc. Personnel of the plant were not fully proficient in operations and maintenance. Systematic use of the training programmes implemented periodically by the Federal Ministry of Water Supply Resources and those organised in house by BWSB had somewhat helped to ease the shortages of trained personnel. However, these programmes were of a very short duration of a few days and were not a substitute for the full-fledged institution building effort that was needed for BSWB. Quick release of funds by the State government for an ongoing National Water Rehabilitation Programme (NWRP) of the World Bank could still retrieve the situation and enable the much needed institutional strengthening of BSWB.

10. The institutional arrangement for water supply at public standby pipes had still to be established. There was no decision whether any charge was to be levied at all from the users. Some minimum affordable charge was inescapable for sustaining any institutional arrangement. Without a proper responsibility for payment for the cost of water and upkeep, BSWB had to even stop supplies at some of the existing standpipes. There was imminent need to establish an appropriate and sustainable institutional arrangement in order to allow a larger number of poor to avail piped supply of potable water.

11 In Bauchi, integrated water supply and sanitation management and development were also lacking and the sanitation sub-sector had received very little attention. No drainage or sanitation component to handle additional wastewater generation from additional water supply to households from the project was included in the project.

12. There was adverse environmental impact of the project from the increased wastewater released from the households as a result of increased supply of treated water. The wastewater had no drainage outlet, particularly in the densely populated poor neighbourhood settlements such as Kur, Gwanlaga, etc. The dirty stagnant water was a fertile breeding ground for mosquitoes and spread of Malaria. In addition, its contamination, through seepage, of the shallow open wells and leaking water supply pipelines posed a serious health hazard. The creation of the Gubi reservoir had contributed to diseases such as Bilharzia in the habitations along its periphery.

13. The Bank's supervision of the project implementation was inadequate. Even after project completion, the Bank sent copies of the PCR prepared in 1994 only to the Federal Government and did not send any copies to the Bauchi State Government or BSWB. The Federal Government also did not pass on the copies to the State Government or BSWB. As a result, no action was taken on the recommendations contained in the PCR.

14. The major benefits of the project were expected to come from improved service coverage resulting in improved health of population and reduction in health care expenditure. The State Ministry of Health advised that the incidence of water borne diseases had been reduced in the township in general. The piped supply had also helped save time in fetching water and in reducing the drudgery mainly for women and children. The State Ministry of Women Affairs informed that attendance of children, particularly the girls, improved considerably in areas served by the piped water supply and standpipes. But, no statistics were available to substantiate these social benefits.

15. Sustainability of the project was seriously endangered by problems such as inadequate maintenance of the plant, transmission and distribution pipes and Gubi dam; lack of adequate funds for operational requirements and procurement of spare parts; high UfW; and, lack of requisite autonomy and weak institutional capability of BSWB particularly in commercial and operational areas. Reduction in the length of distribution lines by 40 km and deletion of the technical assistance component for institutional strengthening had a particularly adverse impact on the sustainability of the project.

16. Overall project outcome was assessed on the basis of rating of individual component indicators such as relevance and achievement of objectives, institutional performance and sustainability. With an overall rating of 1.45 marks, the project outcome is judged as unsatisfactory. The implementation performance and Bank performance are also rated as unsatisfactory, with rating averages of 1.6 and 1.33 respectively.

17. Lessons on institutional aspects related to the need for integrated management and development of water resources, integrated management of water supply and sanitation, independence of environmental regulatory authority from executive functions and independent monitoring of quality of water. The report also noted that autonomy of the utility can be achieved only if there is strong government commitment. Lack of finalisation at the time of the project design of proper institutional arrangement for water supply at public standpipes and the modalities of recovery of charges prevented the benefits of the water supply system from reaching the poor. A lack of well-structured component for control and reduction in UfW had a strong potential to make the project unsustainable. The reduction of the project scope and changes in component specifications, without studying their full implications, had negatively impacted on the life of project components and sustainability of the project. Irregular and insufficient reporting by the State government and BSWB and the inadequacy of Bank supervision of the project contributed to delays and adoption of sub-optimal solutions.

18. The main recommendations for the Bauchi State Government include priority provision of funds to BSWB for some of the critical activities; counterpart financing of the NWRP for institutional development; maintenance of the treatment plant, Gubi dam and the access road; and upgrading and replacement of chlorine dosing system and the leaking distribution pipes. Recommendations also suggest institutional initiatives for Integrated Management and Development of Water Resources (IMDWR), independence of environmental regulatory authority from executive functions and independent monitoring of quality of water. The State Government is also requested to fully enforce the provisions of the 1998 Edict and immediately appoint Directors for BSWB Board to enable it function as an autonomous utility. Early resolution of the question of management and charges for water supply at the public standpipes is also recommended. Other recommendations pertain to provision of drainage system in Bauchi, clearance of outstanding bills of governmental and parastatal bodies, monitoring of and mitigation of the impact of reservoir on the health of inhabitants on the dam periphery, etc.

19 Recommendations for BSWB include effective implementation of operation, maintenance and repair works, quick enumeration of unregistered consumers and collection of outstanding bills, improvement of cost recovery through productivity and cost control measures, installation of water meters and other leak control measures, provision of additional public standpipes, provision of Cathodic Protection for steel pipes, etc.

20. Recommendations for the Bank are for improving the quality at entry and implementation of the Bank assisted projects. These pertain to questions such as encouraging and facilitating borrowers to adopt IMDWR and to focusing on improved service delivery to the urban poor and adopting tariff structure that aims at full cost recovery. Recommendations pertaining to questions of management of supply and cost recovery at public standpipes, UfW, and project supervision and circulation of PCRs and PPERs to the field level authorities such as the State government and the Executing Agency are also included.

I. BACKGROUND

1.1 Project Rationale

The project as conceived was in line with the sector goal of promoting good health and economic development in the State capital of Bauchi through provision of sustainable and safe water supply and sanitation services. In 1987, drinking water available to the Bauchi town from the Gubi dam and ground water sources was only about 7,300m³/day or roughly under 35 litres per capita per day for an estimated population of 210.000. It was necessary to supplement to the existing supply in order to meet the needs arising from the projected growth of population until the year 2000 and to increase the per capita per day supply for meeting the minimum needs of the population. Moreover, the expansion was required to enhance the reliability and adequacy of the supply to the newly established Industrial Zone in Bauchi. It was against this background that the project was conceived and presented to the Bank.

1.2 Formulation

The Bank's preparation and appraisal of the project helped to somewhat upgrade the quality at entry by the inclusion of an environmental study to cover aspects of sanitation and technical assistance component to enhance the institutional capacity of BSWB, the beneficiary and executing agency of the project. However, the PPER mission agrees with the PCR that "the Bank had relatively lower input in the technical preparation of the project and very little time to assess the environment under which it was to be implemented". Adequate time was not allowed to establish a strong relationship between the Bank and the Executing Agency for smooth implementation of the project. The Borrower and the Executing Agency were unfamiliar with the Bank's procurement rules and this often led to protracted communications.

1.3. Objectives and Scope at Appraisal

1.3.1 The project was formulated within the Federal Government's long-term goal of providing 115 litres/capita/day in all urban areas. Specifically, the project aimed at increasing potable water supply to the town of Bauchi from about 35 litres/capita/day in 1987 to 106 litres/capita/day for an estimated population of about 400,000 by the year 2000. A retrospective logical framework matrix is presented in Annex 1.

1.3.2 The scope of the project comprised the construction of a new 45,500m³/day treatment plant, a high lift pumping station, a 600V/2,100 KVA stand-by power station, a 13,600 metres 700 mm diameter pumping main, 65,890 meters of 200 to 700 meters diameter transmission and distribution system and provision of logistics. The project also included technical assistance for engineering services as well as institutional building.

1.4 Financing Arrangements

The total cost of the project was estimated at UA 50.67 million. An ADB loan of UA 44.95 million was extended to the Federal Government of Nigeria, following Bank's approval on 18 October 1988. The Loan Agreement was signed on 30 May 1989 and became effective on 22 October 1989. The Loan was on on-lent to the State Government of Bauchi. The beneficiary and executing agency of the project was the Bauchi State Water Board (BSWB). The State Government of Bauchi covered the remaining balance of the project costs.

1.5. Evaluation Methodology and Approach

1.5.1 The Bauchi Township Water Supply Project was completed in 1992 and a Project Completion Report (PCR) was prepared in 1994. The PCR included a detailed analysis and discussion of all the project implementation aspects.

1.5.2 Since the PCR was well prepared and had fairly adequately covered the implementation-related issues, it was concluded that preparation of an Intermediate Project Performance Evaluation Report (IPPER) would be sufficient to mainly assess the development effectiveness of the intervention. As such, the full PPER format was not applied. The IPPER focuses mainly on the material relevant to the development effectiveness and impact issues and the outcomes based on a "with and without" evaluation approach. Lack of performance indicators and base line data have, however, limited the scope of the analysis in the IPPER.

1.5.3 The project was also selected for a field study for the thematic Study on Bank Group Experience in the Urban Water Supply and Sanitation Sector.

1.5.4 This report has been prepared following an OPEV mission to the Federal Republic of Nigeria from 20 to 30 November 1999. In Nigeria, the mission met with officials of the concerned Federal and Bauchi State ministries and departments. It also had detailed meetings with the officials of the Bauchi State Water Board (BSWB), the Executing Agency for the project. The mission also paid a courtesy call and had a briefing session with the Executive Governor of the Bauchi State. The Mission also held meetings with the concerned officials of the World Bank, the Department for International Development (DFID) of the British High Commission and UNICEF.

II. PROJECT IMPLEMENTATION

2.1 Loan Effectiveness

The loan was approved by the Bank in October 1988 but signing of the loan agreement in May 1989 was delayed by about seven months after approval, because the Bauchi State Government made an unsuccessful attempt to get a waiver for ICB for the supervision contract. The loan became effective in October 1989 without any significant delay. Detailed coverage is given in the PCR.

2.2 Changes in Project Scope

2.2.1 The project was implemented on the basis of Turnkey Contract, in which the selected construction firm was responsible for the design, supply and construction/installation of works. Some modifications were made to the engineering aspect of the project. Steel pipes for the reticulation system were used instead of ductile iron and asbestos cement pipes for the transmission and distribution mains, respectively. This was done because the firm offered pipes different from those specified in the tender. However, no protective measures such as Cathodic Protection for steel pipes were taken. The result has been corrosion in the pipes and poor water quality in many areas. The lengths and diameters of the pumping main; the trunk and distribution mains, and the sizes of the high lift pumps; standby generators; and various elements of the treatment plant were also modified in accordance with the contractor's offer.

2.2.2 A number of essential items such as the 13 km 33 KV power line, two 800 mm diameter raw water mains of a length of 1,500 meters and staff houses, which seem to have been inadvertently omitted at appraisal, were added during implementation. A 13 km access road to the Gubi dam treatment plant site also considered essential could not however be similarly accommodated. In addition, the State Government's introduction of an "Accelerated Programme", to advance supply of 10,000 cu meters of treated water entailed acceleration of certain components and addition of some others such as pumps, stand-by generators and accessories etc. The Bank reluctantly agreed to the inclusion of the additional cost, on account of this programme, in the project. As a consequence of all the above additions, the scope of the main project had to be scaled down. The distribution system was reduced by 40 km and the vital technical assistance component was totally scrapped. The reduction of the scope of the project adversely affected its sustainability.

2.3 Implementation Schedule

The construction contract was signed in December 1989. The supervision contract was signed in February 1990, which was followed by order to commence construction work by the contractor. The project, in its truncated form, was completed in October 1992 compared with the appraisal completion date of December 1991 i.e., a delay of 10 months. The delay in implementation of the project was mainly caused by the diversion of resources for the "Accelerated Programme" to have a part of the system activated on a priority basis, by the construction of some additional small sized components. In the end even that programme did not gain much time in advancing the supplies of treated water, when compared with the original date of completion of the contract. The Management Consultancy Services contract was not completed; it was abandoned midway because of a dispute between the consulting firm and the BSWB.

2.4 Reporting

Reporting by both the State Government and BSWB was inadequate. Bank field supervision relating to management and financial performance of BSWB was also inadequate to ensure submission of relevant reports for Bank review and resolve issues affecting implementation of the technical assistance component of the project.

2.5 Procurement

The State Government had taken the initiative to prepare tender documents, which included specifications, bills of quantities and costs as well as schedule of work. The State Government followed the International Competitive Bidding (ICB) procedures of the Bank, except for its insistence on tendering for the plant on a turnkey basis. After considerable correspondence, the Bank agreed to relax its requirements and agreed to the government proposition. The selection of the supervising consultant was also a source of disagreement at the beginning but this was also sorted out, ensuring strict adherence to the Bank guidelines. Sorting out of these issues resulted in a delay of about 7 months from loan approval. Management Consultancy Services contract was awarded through limited competitive bidding. Procurement issues relating to Turnkey Engineering Contract and the Management Consultancy Services are adequately addressed in the PCR.

2.6 Project Costs

The final project cost as provided in the PCR was UA 49.30 million[1] compared with UA 50.67 million estimated at appraisal. A cost overrun was avoided by a reduction in the scope of distribution system and a scrapping of the technical assistance component.

2.7 Disbursements and Financial Sources

The full ADB loan of UA 44.94 million was disbursed. The Government provided the balance financing. Disbursements by components were not strictly observed and funds allocated for technical assistance component were used to cover cost overrun in the physical component of the project.

2.8 Compliance with Loan Conditions and Covenants

The status of compliance of Loan Conditions and Covenants is covered in sufficient detail in the PCR. Conditions of loan effectiveness, in particular, were met expeditiously because of the readiness of the Government to satisfy the pressing need for potable water supply in Bauchi Town.

III. PERFORMANCE EVALUATION

3.1 Operating Performance

3.1.1. At appraisal, Bauchi town's water supply comprised 6,818³/day from an existing treatment plant and 4,545m³/day from boreholes. These supply sources were often out of function. The reliable supply was limited to about 7,300m³/day. The successful completion of the engineering aspect of the project in July 1992 with the construction of a treatment plant capacity of 45,500 m³/day was, therefore, a tremendous achievement for BSWB. The storage reservoirs and rising main were also completed by February 1991. However, the full distribution system, albeit with a reduced scope (40 km was deleted), was not commissioned until October 1992. Although water was flowing into the distribution system, there was evidence already at the time of the PCR, of a large amount of leakage from the old existing mains connected to the new ones. It was reported that the treatment plant was operating satisfactorily during the initial couple of years following commissioning. Thereafter, the plant was operating at a sub-optimal level. The PPER mission noted that the performance of the plant had further deteriorated since the completion of PCR. At the time of its visit, accurate data was lacking to determine plant output since records were not maintained for the reason that the output meter readings were erratic and not dependable. No replacement or repair works were done on the meters over the preceding two years. The operation of the pumping station suffered from lack of spares. The plant also had a fire accident resulting in burning out of some transformers. The situation was somewhat remedied in 1998 when assistance in the form of consultancy for technical assessment and supply of urgently needed spares, chemicals and laboratory reagents for water testing was received under the extra-budgetary Federal Petroleum Trust Fund (PTF).

[1] excludes an amount of UA 0.358 million (US$490,000) that was still to be paid to the consultants and the contractor for services already rendered (US $ 58,000 to the Supervision consultant, $ 352,000 to the Management consultant and $ 80,000 to the Contractor).

3.1.2 It was expected that to meet the total demand in the year 2000, the existing boreholes would continue to be maintained to supplement the supplies from the new plant and the old treatment plant would be shifted to a different location in the State. However, after the commissioning of the new plant, the old treatment plant was abandoned leading to its disrepair condition. An opportunity to usefully utilise the old asset was lost. Similarly, the boreholes in the Bauchi town are no longer maintained.

3.1.3 A two-year Turn-Around-Maintenance contract was awarded to the original manufacturers of the plant for the years 1997-1998 but was suspended half way, and consultants withdrew their staff because of non-payment. The consultants have also withheld supplies of some vital spares until their outstanding payments are cleared. An inspection of the high lift pumps by another foreign firm engaged by the BSWB revealed that one of the pumps was completely worn out. The repair work entrusted to a local Nigerian firm in the nearby Jos town has remained unfinished because of non-payment and the pump remains with the repair firm. The plant operations would likely have collapsed but for the assistance granted by the PTF.

3.1.4 The plant's chlorine dosing system is now considered obsolete, corrosive and deleterious to the booster pumps. Because of the use of steel pipes without Cathodic Protection and the effect of excessive chlorine, the distribution network of pipes has developed rampant leakage even resulting in total shutting off of supplies to some areas. There is need to upgrade the chlorine dosing system and replace the leaking pipelines, after a proper study.

3.1.5 The quality of water from the treatment plant is monitored by BSWB. At times of outbreak of epidemics, the quality of pipe water is also tested. The quality of water suffers seriously, when stocks of treatment chemicals are not replenished in time by the State Government and inadequately treated water continues to be supplied. There is no independent monitoring of the water quality. This is not enough safe guard for the citizens. In addition to BSWB's own tests, monitoring should also be carried out by an independent agency, such as BSEPA.

3.1.6 Unaccounted for Water (UfW): Control and reduction of UfW was not a part of the activities of the project nor was any target set. However, procurement of 40,000 household meters and some leak detection equipment was included in the project. To date, the meters, except for about 200 in a few commercial consumers such as hotels, industries, car wash and gas stations etc., had still not been installed in the premises of the registered consumers. BSWB hoped to install the meters in about 3 years' time. BSWB also has a large number of unregistered consumers. A programme to identify and register unregistered consumers is in hand but the progress is slow. In addition, there is large-scale leakage in the distribution system resulting from poor state of repair of the network and thefts.

3.1.7 The losses and thefts in the system result in high level of UfW but it was difficult to correctly assess its extent in the absence of production, distribution and consumer metering. BSWB's conservative rough estimate, on the basis of estimated production and the number of households in the areas connected, put the figure at 40 percent, compared with an assumption of 15 percent at appraisal. The PCR had roughly estimated it at 30 percent. Leak detection equipment had not been commissioned and survey or control over UfW had not been possible. A programme for control of UfW was to be implemented under the on-going National Water Rehabilitation Project of the World Bank. Bank's future interventions need to give adequate attention to UfW in order to optimise investments in the sector.

3.1.8 Standby Generators: The project provided for standby diesel generator sets and diesel storage tanks for the operation of the treatment plant in the event of failure of NEPA supplies. However, because of lack of funds for purchase of emergency stocks of diesel oil, the generators have remained in a state of total disuse. BSWB is not able to purchase even small quantity of diesel oil for intermittent but periodical start-up of the generators to keep them in good running condition. It is apprehended that with the prolonged non-use many parts and components would have rusted and deteriorated and the generators will now need considerable expense to make them operational again. In the meanwhile, during stoppages in NEPA' grid supplies, the town water supply from the system is disrupted and adversely affected.

3.1.9 Gubi Dam: The project plant draws its raw water from the Gubi dam. The dam was constructed well before the project but its proper upkeep and maintenance is critical to the sustainability of the project. It is for this reason that BSWB had been made responsible for the maintenance of the dam but this work has been neglected since 1992, due to lack of funds. Approach to the dam is only through a mud track and no proper road was constructed. The existing track is full of potholes and is virtually unusable in the rainy season. All the four control gates inside the in-take tower have become non-functional and all are now stuck in a permanently open position. On both the down-stream and up-stream embankments, growth of trees and shrubs and penetration of roots, their decay and creation of hollow pits and piping have become sources of seepage and erosion. Deep gullies have already formed by erosion. Many of the Drain Inspection chambers for determination of seepage levels are not functioning. Lack of maintenance in all these aspects collectively could make the risk of a collapse of the dam very real, with serious consequences of not only of closure of the treatment plant but washing away of large parts of downstream areas, including the Bauchi town.

3.2 Financial Performance

3.2.1 Income & Expenditure: Audited Statements of Income and Expenditure were available only up to the year 1997. The financial performance of BWSB before and after project commissioning has been very poor. The recent years' performance also continued to be unsatisfactory. The State Government continued to bear the responsibility of repayment of loans on capital investment and provided BSWB with subvention to meet its costs of chemicals and electricity. Until this fragmentation of responsibility was corrected, the financial accounts would hardly be representative of the true financial health of BSWB.

3.2.2 The Edict establishing BSWB provides that it shall determine tariffs in such a manner that revenues for any year would be sufficient to pay all working expenses and repayment due on its loans. However, BSWB had not been able to achieve this objective of full cost recovery in its operations. Its revenues from supply of water were still not able to cover even its operation and maintenance costs. In addition, BSWB's finances were fully stretched and its cash flow position was precarious. According to a paper presented by the General Manager BSWB to the Bauchi State Governor in August 1999, BSWB's revenues collected during the six month period January to June 1999 amounted to N 7.1 million and the expenditure on staff salaries alone was N 5.4 million. The balance was wholly inadequate to meet its operational and maintenance expenditure. Sometimes, as was noted during the mission's visit to Bauchi, BSWB had difficulty even to pay salaries to its staff. BSWB's heavy dependence on Government subventions also almost totally eroded its autonomy.

3.2.3 Tariffs: Since consumer meters had still not been installed except for a few commercial consumers, tariffs were designated in flat rates per connection per month. Steep tariff increases had been enforced for different categories of consumers four times in 1990, 1991, 1994 and 1999. For

example, for domestic households, the tariffs had increased from N 5 per month to N 250 per month per connection for high-density area and N 500 for the low-density areas. However, since the base rates were very low, the current rates still did not cover the long-run marginal cost of supply. While periodic tariff increases are necessary to meet increasing operation costs, BSWB lacked management tools to institute norms such as accountability, productivity and quality of services to improve its services and avoid the need to revert to tariff increases that merely mask the utility's inefficiency.

3.2.4 Billing & Collection of Revenues: Although through this project, BSWB had succeeded in increasing the production of the water supply, it was unable to bill and collect its revenues efficiently. BSWB also estimated that there were still large number of unregistered consumers illegally drawing water from BSWB's piped system. The level of receivables at the time of the PPER mission was as follows:

Table 3.1
Receivables of BSWB as on 25 November 1999

No.	Category	Amount (in millions of N)
1	Domestic	29.75
2	Government Institutions (State & Federal)	18.25
3	Commercial	24.56
4	Public Taps and other Local Government Buildings	43.56
TOTAL		116.32

Source: BSWB

3.2.5 At the time of the PPER mission, the outstanding receivables from registered consumers accounted for about 30 months of revenue. The Federal, State and local government offices accounted for more than N 60 million. The payments were delayed and came in driblets. In some cases of large outstanding of private consumers, BSWB had started resorting to disconnection but this could not be extended to Government connections without the approval and support of the Government. Even for private connections, the measure was having only a limited impact because water at public standpipes was free and many such disconnected customers choose to switch over to collection of water from public standpipes rather than pay up. Only a charge for supply at the public standpipes will be able to plug this loophole. In turn, BSWB also owed money to its creditors such as electricity utility.

3.3 Financial & Economic Internal Rate of Return

3.3.1 In the absence of metering at both stages of production and supply of water and the incomplete enumeration of customers, the calculation of benefits would lack credibility. In addition, the financial accounts were fragmented and incomplete. State Government had continued to repay loans for capital investments and provide subventions to BSWB to cover the costs of chemicals and electricity. Even the calculations given in the Appraisal Report (AR) and Project Completion Report (PCR) were largely based on assumptions.

3.3.2 At appraisal, it was difficult to establish the consumption pattern in the absence of metering system and due to the then intermittent supply. The average incremental cost (AIC) of supply was calculated based on projections using the design capacity of the water systems and assuming per capita consumption of 94 litres/day with a 15% added for system losses to arrive at the water demand. At the time of the PCR preparation, the situation did not improve thus limiting the database for the determination of the consumption pattern. Water meters purchased under the Bank project had still not been installed. The PCR affirmed that figures given for water demand were still far from being accurate. Thus, the rates of return provided in the PCR were based on a number of assumptions and not on actual figures. The PCR assumed the level of UfW to be 30% against 15% considered at appraisal. With all these assumptions the PCR converted the estimated AIC to arrive at a retrospective financial rate of return (FIRR) of 10.21% at appraisal, and reestimated it at PCR time to be 8.72%, based on an ambitious assumptions relating to water sold and billed. Any attempt to re-calculate the FIRR in the PPER on a similar set of assumptions would be purely conjectural since the metering for all the customers, barring a few, was still almost totally non-existent, and the estimated UfW was over 40%. The only general conclusion that could be made was that since the BSWB was operating at a loss before and following project commissioning and the Bank's financing accounted for more than 80% of the BSWB's assets, the project's FIRR could only be negative. Against this background, this PPER did not attempt to reestimate the FIRR.

3.3.3 No economic internal rate of return (EIRR) was calculated at appraisal. PCR estimated the EIRR at 12.45 percent. But this, like the FIRR, was based entirely on assumptions and not a single actual figure. For reasons explained in paragraphs 3.3.1 and 3.3.2 above and the lack of base line data to quantify socio-economic benefits, any fresh estimation of EIRR would be unreal and speculative. Therefore, the PPER did not attempt to recalculate the EIRR.

3.4 Institutional Performance

3.4.1 Sector Reforms and Integrated Management and Development of Water Resources: In February 1996, a separate Ministry of Water Resources was carved out of the erstwhile Ministry of Works and Transport to bring under one umbrella the responsibility for both rural and urban drinking water supplies. Still, responsibility for water for irrigation vested in the Ministry of Irrigation and for water for livestock in the Ministry of Agriculture. There was a need for a single agency for an integrated management and development of all water resources for their most efficient use. It was essential to streamline the role and functions of the various ministries.

3.4.2 In Bauchi, the Environmental Protection Agency was entrusted not only with regulating and monitoring environmental standards but also charged with the executive responsibility for sanitation in the town. Entrusting executive functions to a regulatory agency is not a healthy practice and needs to be reviewed.

3.4.3 The PCR recounted the repeated changes in the hierarchical set up and demarcation of areas of responsibility and accountability in the water supply sector in Bauchi and the administrative control of BSWB, since the project was completed. Since February 1996, BSWB was within the administrative control of the State Ministry of Water Resources.

3.4.4 An Edict was issued in October 1998 by the then Executive Head of Bauchi State establishing a Board of Directors to be the governing body for BSWB. The Board of Directors was assigned the responsibility for achieving a sustainable water system development in the State. It was charged with development, control and management of all the urban and semi-urban water systems, including

determination of tariffs for water supply such that revenue for any year would be sufficient to pay all working expenses, repayment of loans, etc. However, until the time of the PPER mission, the Government had not yet nominated the Board of Directors; it had, however, indicated to the PPER mission that it had intention of appointing one very soon,. As per the Edict, on paper the BSWB could be considered to be a fairly autonomous government utility, but without Government commitment it was unlikely to bring about the expected improvement in service delivery or its financial performance. The early appointment of a Board of Directors, operating within the powers delegated in the Edict, is considered essential in achieving the objective of making BSWB autonomous.

3.4.5 The project included a component for institutional development for enhancing the financial management capability and viability of BSWB. It was designed to put the Board on cost recovery basis by undertaking a tariff study to adopt an economic tariff structure. A management consultant was selected and contract awarded but the contract work was suspended due to a dispute on issues of payment. In the end, utilisation of loan funds for unapproved components such as the "Accelerated Programme" left no balance and the component was ultimately abandoned. The commercial and accounting capabilities of BSWB remain extremely weak and the Board is facing acute problems in areas such as enumeration of customers, billing and collection of revenue, financial accounting, cost accounting, stock control, budgetary control etc. Thus, the project completely failed in meeting its objective of capacity strengthening in the area of operational, commercial and financial management of the BSWB.

3.4.6 The contract for the supply and commissioning of the treatment plant did not include any component for preparation of operating and maintenance manuals or training of operating staff at the manufacturers' works or at site. According to the General Manager BSWB, even the few initially deployed staff that had become conversant with proper plant operation relocated themselves in Gombi State after its separation from Bauchi State. As a consequence, the newly assigned personnel of the plant are not fully proficient in operations and maintenance.

3.4.7 Systematic use of the training programmes implemented periodically by the Federal Ministry of Water Supply Resources and those organised in house by BSWB have somewhat helped to ease the shortages of trained personnel. These programmes of very short duration of a few days are, however, not a substitute for the full fledged institution building effort that is needed for BSWB.

3.4.8 Luckily for BSWB, Bauchi is one of the few states to be included in 1992 National Water Rehabilitation Project (NWRP) of the World Bank which covers an institutional strengthening component as well, and could easily meet the objectives of the project's abandoned institutional component. The subjects covered include financial management, accounting system, purchasing and supplies, billing and collection, fixed assets evaluation, customer enumeration and mapping, water audit and tariff and operation and maintenance schedules and profiles. Consultants have also been selected after following a bidding process in accordance with the World Bank guidelines. The contract awards cannot, however, be made until a guaranty is available for the release of the State's share of counterpart funds, which amounts to about 40 percent of the value of the contract. The closing date for the World Bank loan is June 2000. Quick release of funds before this date by the State government could still retrieve the situation and enable the much needed institutional strengthening in some vital commercial, financial and operational areas of BSWB's working.

3.4.9 The institutional arrangement for water supply at public standby pipes has yet to be established. Current supply is free of charge. There is no decision whether any charge is to be levied at all from the users. In the absence of a practical and viable arrangement, under the project no new standpipes could be installed by the BSWB. Without a proper responsibility for payment for the cost of water and upkeep of standpipes, BSWB had to even stop supplies at some of the existing standpipes but public uproar aborted the effort. As a result of the inadequate and inefficient supply at the relatively small number of existing public standpipes, the target poor population at the unserved places has to buy their requirement of water from intermediaries, such as private vendors, and thereby ultimately end up paying many times the BSWB rates. The capacity and willingness of the poor to pay thus does not seem to be the real issue. On the other hand, the installation of additional standpipes would be welcome by such groups as BSWB's charge would in any case be much lower than the price they pay to the private vendors. Levy of some minimum affordable charge for sustaining any effective and efficient institutional arrangement should not thus cause any major resistance. There is thus an urgent need to set up a sustainable institutional and regulatory arrangement in order to facilitate extension of the network of public standpipes and thereby allow a much larger number of poor to avail piped supply of potable water at affordable cost. Some of the possible arrangements are appointing suitable NGOs or small independent private operators, who could be made responsible for collection of customer charges, payment to BSWB and most importantly upkeep of the standpipes. The State Government must take an early initiative and action so that the benefits of the project reach the poor as well. In addition, the Bank needs to ensure that the interest of the poor is adequately addressed at design stage of any future interventions by a clear and consultative mapping out of sustainable institutional arrangements.

3.4.10 For some historical reasons, the purchase of chemicals for the plant and reagents for the water-testing laboratory is the responsibility of the State Government and not the BSWB, the plant operator. The arrangement increases lead-time and has, in the past, resulted in delayed supplies of these chemicals leading to incomplete treatment or testing of the water supplied. It is essential that the institutional arrangements provide BSWB with responsibility and control over this activity. This will ensure that the sustainability of the quality of treated water will not be jeopardised.

3.4.11 Sanitation: In the past, integrated water supply and sanitation management and development was lacking. The water supply sub-sector was given a much higher priority compared to the sanitation sub-sector. No drainage or sanitation component to handle additional wastewater generation from additional water supply to households from the project was included in the project. Only a study to determine the extent of sanitation and drainage needs was included but no action had been taken on the Study report also. Very little investment had gone to the vital sanitation sub-sector. With the exception of some private sewerage treatment plants, sanitation facilities in most part of the country had remained to be of traditional type (largely pit latrines in majority of the households and septic tanks systems in low-density, commercial and industrial areas). Provision of town drainage systems had been the responsibility of urban development authorities but expansion of infrastructure in a planned fashion had been constrained by limitation of funds. The Ministry of Works also had some schemes to construct drains in the town. With regard to solid waste management, no clear demarcation of responsibility existed. Regulatory frameworks and monitoring systems for quality control functions of industrial waste disposals and evacuation of waste water were also not clearly spelt out at the federal and the state levels. Any future intervention needs to adequately address quality control aspects in order to ensure that the environmental issues are well treated.

3.4.12 The result had been a lop-sided development of the sector. In recent years, the sanitation problems particularly emanating from poor management of solid waste disposals were becoming acute; and in 1997 the Government enacted the Edict establishing the Bauchi State Environment Protection Agency (BSEPA) for the State. This Agency was made responsible for disposal of solid wastes and also setting up standards for quality control as well as enforcing them. Although it may have served to address the immediate problem, the PPER mission does not consider this arrangement as appropriate as EPA as an agency responsible for regulation and monitoring should not be saddled with the execution responsibility also. Appropriately the responsibility for execution of sanitation and public health schemes should rest with other concerned agencies of the State government, other than EPA.

3.5 Socio-Economic Performance

3.5.1 Due to the extension of service coverage of the piped water supply, the vulnerability of the population to the incidences of water borne diseases had been reported to decline in the township in general. However, the provision of consumer connections in high-density areas lagged substantially behind those provided to the better off sections of the social strata. Out of total of about 12,000 connections, there were only about 1221 standpipes. A lack of institutional arrangement for management and supply from public standpipes had curtailed the ability of BSWB to extend the provision of its service to the poor neighbourhoods to meet one of their basic human needs. In addition, a lack of proper sanitation component in the project, particularly in the densely populated poorer areas, had exposed the residents there to additional health hazards through breeding of mosquitoes and seepage of wastewater into shallow wells still in use. Small independent private operators or community groups were also not encouraged to link up with BSWB to cater to the water supply and sanitation needs of the poor neighbourhoods.

3.5.2 Much of the economic benefits were expected from the indirect benefits of the project in spurring the establishment of industries by removing a major constraint of lack of reticulation system. The project through its enhanced water supply and extension of distribution system did remove this negative factor. However, the overall macro-economic factors and environment in the country and the State during the 1990s were not favourable and industry languished. The indirect benefits had thus not been realised.

3.5.3 The expected benefits of the project from improved service coverage compared to the situation at appraisal and the attendant improved health of population were reported to have been achieved reasonably. The State Ministry of Health advised that the incidences of water borne diseases had been reduced in the township in general. The piped supply had also helped save time in fetching water and in reducing the drudgery mainly for women and children. However, all these benefits were qualitative and defied easy quantification in the absence of authentic baseline and current data. Also, no baseline data or indicators were set at appraisal stage to evaluate the socio-economic impact of the project.

3.6 Impact on Women

Gender issues were not considered at appraisal. In the absence of piped connections, women and children are the traditional water haulers from streams, wells and ponds. The time and energy spent increases considerably when water sources are further away. The extension of piped water supply and increase in number of standpipes considerably reduced the drudgery of the women and children. The State Ministry of Women Affairs informed that attendance of children, particularly the girls, improved considerably in areas served by the piped water supply and standpipes. Children are most vulnerable to the gastric diseases and the largest benefit of a perceived reduction in such ailments and

epidemics or infant mortality also most benefited the women, as mothers of children. However, in this case too, no base line data and verifiable indicators provided at appraisal to quantify these benefits.

3.7 Environmental Performance

3.7.1 The environmental degradation due to additional wastewater generation from additional water supply to households was visualised but not addressed except for a proposal to undertake a study to determine the extent of sanitation and drainage needs. The study recommended preliminary measures to improve solid waste collection and drainage services but little had been done in this connection.

3.7.2 The increased wastewater released from the households as a result of increased supply of treated water had no drainage outlet, particularly in the densely populated poor neighbourhood settlements such as Kur, Gwanlaga, etc. The dirty wastewater stagnated in pools and puddles within the colonies and was a fertile breeding ground for mosquitoes and spread of Malaria. In addition, its seepage contaminated the shallow open wells causing a serious health hazard and vulnerability to epidemics for the population not served by piped water supply and using the well water sources. Instances were also reported of the seepage of the wastewater into the low pressure leaking pipes, compromising the quality of piped water quality as well. Apart from the long-term solution of an appropriate sanitation and drainage system, it is essential that in the immediate short term, the condition of the existing storm water drains should be improved by cleaning, stone pitching of side walls and reinstatement of wing walls.

3.7.3 Discharge from habitations on the banks of streams flowing into the dam reservoir was not monitored. It was, however, noted that the creation of the dam had contributed to diseases such as Bilharzia in the habitations along the periphery of the reservoir. It was reported that in one of the schools in a village near the dam, every child was found to be suffering from Bilharzia. The State Government should take urgent mitigative steps for immunization and treatment of affected population.

3.8 Performance of Consultants, Contractors and Suppliers

3.8.1 The supervising consultant had failed to give professional advice to the executing agency relating to the adverse implications of the change in the specifications of the pipes. Project record keeping and reporting to the Bank by the supervision consultant (and the executing agency) were inadequate. The management consultant commenced work but soon abandoned it due to disputes with the State Government.

3.8.2 The contractor performed well in completing the project in time. However, the change of pipe material seemed to have been to suit its supply source without regard to quality and durability. Moreover the training and transfer skills to the staff of the executing agency for efficient operation and maintenance of the system were very limited. Even those trained went to the newly formed Gombi state, following the carving out of that state from the Bauchi state.

3.9 Performance of Borrower and Executing Agency

3.9.1 Even though the BSWB and its Board (whenever there was one) were responsible for the execution of the project, the State Government was in virtual direct control of the project. While this helped in providing counterpart funds on time for the project execution, the Government's decisions (at times made even without the Bank's approval such as the ''Accelerated Programme'') led to cost overrun and scrapping of some important components of the project.

3.9.2 The Executing Agency was institutionally weak. Staff turnover particularly at the senior management level contributed to this state of affairs. For example, BSWB had six general managers during the execution of the project. The frequent change of general managers also contributed to establishment of direct links of communication between the supervision consultant and the State Governor at the time, which often led to bypassing of the executing agency. BSWB remained weak since it had no autonomy and did not get the benefit of the technical assistance that was tailored for its institutional capacity building.

3.10 Bank Performance

3.10.1 The Bank's supervision of the project implementation was inadequate. The Bank's periodical presence at site would have helped resolve issues such as the one relating to the Management Consultant's contract. Also, the Bank should not have allowed changes in specifications of the pipes and diversion of project funds for the "Accelerated Programme", which resulted in the reduction in length of distribution lines and non-implementation of the technical assistance component.

3.10.2 The PPER mission was advised that the Bank had sent copies of PCR to the Federal Government but not to the State Government and BSWB. Even the Federal Government had not passed on the report to the latter two authorities. The Bank also has no institutionalised system for a follow up implementation of recommendations in the PCR. PCRs and PPERs are an important part of the project cycle for lesson learning, feedback and remedial action and are critical for the sustainability of the project facilities. The Bank should consider a system in which copies of these important documents besides being sent to the Governments of the RMCs could simultaneously be sent direct to major parties including the executing agencies for priority consideration of recommendations and action as appropriate without loss of time. There is also a need for a follow up mechanism in the Bank to ensure that the recommendations in these reports are pursued.

IV. PROJECT SUSTAINABILITY

4.1.1 Population growth in Bauchi was lower than projections at appraisal and in 1999 was about 300,000 compared with 390,000 projected for the year 2000. The capacity of water source and the treatment plant are adequate for the present and medium-term demand of potable water in Bauchi, and the plant is technically viable. However, sustainability of the project hinges on a number of issues noted hereafter. Operation of the pumping plant often suffered from lack of spares arising from a lack of proper systems of assessment of requirement and lead times, timely ordering and systematic storage of spares. Reduction in the length of replacements for the old distribution network of pipes by 40 km and premature rusting because of change in specification have both lead to rampant water leakages. Prolonged non-utilisation of stand-by generators had rendered the operational readiness of the sets for emergency operations extremely doubtful. There was inadequate maintenance of the Gubi dam endangering its economic life. As a result, only about 50 percent of Bauchi's lower than expected population had access to potable water, limiting the current consumption rate to about 80 litres/capita/day compared with the appraisal estimate of 106 litres/capita/day.

4.1.2 Although progress had been made to increase water tariffs, the current rates did not cover the long-run marginal cost of supply. The commercial and accounting capabilities of BSWB remained extremely weak. Most of the consumer meters procured as a part of the project had not been installed and rational recovery of charges for water supplied was impossible. Receivables from registered consumers accounted for about 30 months of revenue and UfW was very high. As a result, billed water supply and revenue were low. BSWB's finances were fully stretched and its cash flow position was not at all comfortable. Based on qualitative assessment, both the FIRR and EIRR were unsatisfactory.

4.1.3 The overall enabling environment was weak. The absence of a Board of Directors, operating within the powers delegated in the Edict, was jeopardising the autonomy of BSWB. Because of abandonment of the technical assistance component for upgrading BSWB's institutional capability, the commercial and accounting capabilities of BSWB remained extremely weak. Operational staff of BSWB was also not adequately trained in plant running and upkeep and was not fully proficient in operations and maintenance. The institutional arrangement for water supply at public standby pipes had still to be established. There was also no decision whether any charge was to be levied at all from the users.

4.1.4 All the above limitations were having long-term adverse impact on the sustainability of the project and the performance of the BSWB. As a prerequisite, the State Government needed to provide the requisite funds for operation and maintenance of the deteriorating systems. It also needed to provide full commitment to giving adequate autonomy and enabling environment for BSWB and for facilitating the participation of private sector, in order to improve the viability of BSWB. BSWB on its part needs to carry out all its functions effectively to bring about operational, financial and managerial efficiencies and long term sustainability in its activities.

V. PERFORMANCE RATINGS

5.1 Implementation Performance

Rating by component indicators of implementation performance of adherence to time and cost estimates, compliance with loan conditions and covenants, adequacy of supervision and reporting, and operations is shown in Annex 3. Overall, the implementation performance is rated as **unsatisfactory**, with a rating average of 1.6.

5.2 Bank Performance Rating

Bank support through the project cycle was inadequate. Based on a rating of individual component indicators in Annex 4, the overall rating is 1.33 and the Bank performance is judged as **unsatisfactory.**

5.3 Project Outcome

Performance in relation to achievement of development objectives is assessed in Annex 5. Rating for each of the individual indicator i.e., relevance and achievement of objectives, institutional development and sustainability is judged as unsatisfactory. The overall assessment of Project Outcome rated at 1.45 marks is also judged as **unsatisfactory.**

6. CONCLUSION, FEEDBACK AND RECOMMENDATIONS

6.1. Conclusion

6.1.1 The project was relevant when conceived since it responded to the Government's sector policy of providing potable water supply in order to improve the health of the population and enhance the economic development of the country. The project helped expand the treated water supply system and eased the water supply shortages in Bauchi Township. However, the sector issues such as institutional arrangements for integrated management and development of water resources and institutional autonomy for BSWB were not adequately addressed. The BSWB's lack of familiarity with Bank's procurement and reporting procedures and inadequate Bank supervision contributed to delays and adoption of sub-optimal solutions.

6.1.2 Implementation of plant construction was satisfactory. The supply of safe potable water was augmented by 45,000m^3/ day. However, its contribution to the overall goal of promoting good health in Bauchi was only partially achieved. Because of a change in specifications of transmission and distribution pipes without adequate safeguards, the pipelines have prematurely rusted and it is now necessary to have extensive replacement of pipelines to avoid large-scale losses and to prevent contamination of treated water. Introduction of the "Accelerated Program" also delayed the main project and forced reduction in replacement of distribution mains by 40 km and dropping of vital component of institutional development. Both had deleterious consequence for revenues and sustainability of the project.

6.1.3 A measure of autonomy in areas of management and finance had been proposed for BSWB through the State Government's Edict issued in 1998. However, in practical terms there was no impact as no Board of Directors had been appointed and the utility in effect continued to be managed by the State Government. The objectives of institutional development were not achieved.

6.1.4 Registered connections had increased from about 3,000 consumers to about 12,000, compared with 30,000 estimated at appraisal. Due mainly to funding shortfall, it had not been possible to extend the potable water supply to the entire target population. In addition, inadequate maintenance had rendered full capacity operation doubtful. It was estimated that, all in all, only about 50 percent of Bauchi's population of about 300,000 had access to potable water. After excluding an estimated 40 percent distribution loss due to leakage, the consumption of safe potable water was estimated at about 80 litres/capita/day, compared with a target of 106 litres.

6.1.5 Procurement and installation of 30,000 water meters in Bauchi was a part of the project. The meters were purchased but their installation had just started at the time of the PPER mission and was targeted only to major consumers. Premature corrosion of transmission main and the distribution pipes and the reduction in the replacement of old distribution pipes by 40 km had resulted in a substantial increase in UfW. There was also deterioration in the quality of water for some of the consumers. Control over UfW had not been possible without installation of leak detection equipment.

6.1.6 The provision of consumer connections in high-density area laggged substantially behind those provided to the better off sections of the social strata. Out of total of about 12,000 connections, there were only about 1221 standpipes. No additional standpipes were provided under the project as the question of responsibility for management of standpipes and payment for the water supplied there had not been resolved. It was the perception of State Ministry of Health that the poorer and higher density sections of population continued to remain vulnerable to water related health and sanitation risks.

6.1.7 Project sustainability was gravely endangered by a number of operational, financial, institutional and social issues, discussed earlier in the report. Some of these arose from a reduction in the scope of the project, while lack of an enabling environment greatly had contributed to BSWB's non-viability. The project was, therefore, not able to attain its development objectives and its overall outcome is rated as unsatisfactory.

6.1.8 With the future growth in population, urbanisation and possible rehabilitation of the industrial estates in Bauchi, there is likely to be high pressure on BSWB to improve its service delivery. It is heavily dependent on the State Government subsidy even to meet 50% of the demand. Without creating the enabling environment for BSWB to function on an autonomous and commercial basis, the subsidy burden is likely to increase and State Government's expectations of eliminating its subsidy burden and the utility becoming self-sufficient will remain unrealistic.

6.2 Feedback /Lessons

A number of lessons and recommendations are contained in the PCR. These covering project preparation, appraisal, and supervision are primarily for the Bank and are still valid. In addition, this PPER notes the following:

- A single agency for IMDWR could facilitate the management and development of water resources in an optimal and sustainable manner;
- Entrusting an independent environmental regulatory authority (such as the BSEPA) with the executive responsibility has the potential of undermining its independence as a regulator;
- Establishment of a fairly autonomous government utility without government commitment to providing an enabling environment is not likely to bring about the expected improvement in service delivery or financial viability of the utility;
- Lack of proper institutional arrangement and modalities for collection of charges for water supply at public stand posts could prevent the benefits of the water supply system from reaching the poor;
- A reduction in project scope and changes in components without studying their full implications can often have grave consequences on the sustainability and development impact of the project.

6.3 Recommendations

For The State Government

The State Government may consider the following recommendations for obtaining the maximum development impact of the project and other investments in the Water Supply and Sanitation sector in the Bauchi State.

1. Provide funds to BSWB on a priority basis for (paras. 3.1 & 4.1.4):

    - Counterpart financing of the technical assistance for institutional strengthening in critical areas such as commercial, accounting & operational capability, control and reduction of UfW etc., under the World Bank's NWRP.
    - Reviving the two year turn-around maintenance contract;
    - Maintenance and repairs of Gubi dam and the access road;
    - Repair of the output meters of the treatment plant; and
    - Upgrading and replacement of the chlorine dosing system and damaged distribution lines.

2. Consolidate the integrated water resources management and development functions in the State Ministry of Water Resources (para. 3.4.1);

3. Assign the responsibility for execution of sanitation and public health schemes to appropriate State government agencies other than BSEPA (para.3.4.2);

4. Assign the responsibility for regular testing of quality of water supplied to consumers to an independent agency such as BSEPA (para. 3.1.5);

5. Limit the functions of BSEPA to regulation and monitoring of environmental and health standards (paras. 3.1.5 & 3.4.12);

6. Undertake a comprehensive integrated study to determine appropriate sanitation schemes for the Bauchi township, in order to complement the water supply infrastructure (para. 3.7.2);

7. Immediately appoint the Board of Directors for BSWB and fully enforce the provisions of the 1998 Edict, including areas such as institutional autonomy and tariffs and cost recovery so that State subventions could be avoided in the long-run (para 3.4.4);

8. Immediately provide an improvised drainage system in densely populated neighbourhoods for evacuation of waste water in order to avoid health hazards until the comprehensive study recommendations are considered for implementation (para. 3.7.2);

9. Consider levying of a minimum affordable charge for supply of water at the public standpipes and assigning responsibility for their management, so that the benefits of the project reach the poor as well. Some of the possible institutional arrangements that could be considered are appointing any suitable NGO, or any organisation of the neighbourhood communities or even a private contractor, who could be made responsible for collection of customer charges, payment to BSWB and upkeep of the standpipes (para. 3.4.9);

10. Ensure that chemicals for the treatment plant and the Water Quality Laboratory are supplied in adequate quantity and quality, on timely basis. Eventually, the responsibility for procurement of chemicals should be transferred to the plant operator i.e., BSWB (para. 3.4.10);

11. Direct State and parastatal organisations as well as local government offices to clear, without further delay, their outstanding bills of BSWB and effect timely payment in future (para. 3.2.5);

12. Monitor the impact of the dam reservoir on the health of the inhabitants of the villages around the dam, and take effective mitigative steps and ensure that any further settlements are avoided (para. 3.7.3);

For Bauchi State Water Board

Implementation of a number of important recommendations noted below will help improve BSWB's operational efficiency and the long-term sustainability of the project (para. 4.1.4):

1. Effectively implement the institutional development and unaccounted-for-water components of the World Bank's NRWP to upgrade its commercial, accounting and operational capabilities as soon as counterpart funds are guaranteed by the State;

2. Efficiently undertake all the required maintenance and repair works as soon as requisite funds are made available by the State;

3. Undertake on a priority basis, schemes to extend the reticulation system for provision of additional stand pipes for the benefit of inhabitants of the poor neighbourhoods;

4. Undertake an aggressive scheme for enumeration of unregistered consumers;

5. Accelerate the process of installation of house water meters;

6. Vigorously pursue the collection of outstanding bills from all consumers;

7. Maintain full operational and maintenance records for the treatment plant and the transmission and distribution system;

8. Improve cost recovery through productivity and cost control measures towards meeting the full operation and maintenance cost in line with the Edict requirements so that State subventions could be avoided in the long-run.

9. Undertake studies for upgrading and replacing the chlorine dosing system and distribution lines and implement the recommendations thereof; in the meanwhile consider providing Cathodic Protection for the steel pipes to prevent further rusting;

10. Relocate the Bauchi's old treatment plant and make it operable (para 3.1.2);

For the Bank

The Bank may consider the following major recommendations for improving the quality at entrance and implementation of the Bank assisted projects.

1. Sector issues such as institutional arrangements for integrated management and development of water resources and institutional autonomy for the executing agencies need to be adequately addressed at project preparation and appraisal (para 3.4.1);

2. Changes in project scope and component specifications should be allowed only after carefully studying the implications on the sustainability of the project (para. 3.9.1);

3. Ensure that project design includes effective arrangements for monitoring of the water quality by an authority independent of the plant operator (para 3.4.11);

4. In order to reach the benefits of a water supply system to the poor, it is essential that the Bank includes at project design an effective institutional arrangement for water supply at public stand pipes and the modalities of recovery of charges (para. 3.4.9);

5. Future Bank financing needs to include a well structured component for control and reduction in UfW in order to optimise the investment in the sector (para. 3.1.7);

6. The Bank needs to consider a system in which copies of PCRs and PPERs besides being sent to the Borrower of the RMCs could also be directly sent to major parties including the executing agencies and co-financiers for priority consideration of the recommendations and follow-up actions contained thereof. There is also a need for a follow up mechanism in the Bank to ensure effective implementation of the recommendations in these reports (para.3.9.2).

6.4 Follow-up Action

The Bank should follow-up with the Bauchi State Government and BSWB for early action on the specific recommendations made for them in sections 6.3 above. A matrix for the follow-up action in the Bank is shown in Annex 6.

BAUCHI TOWNSHIP WATER SUPPLY PROJECT

RETROSPECTIVE LOGICAL FRAMEWORK

COUNTRY : Nigeria
PROJECT : Bauchi Township Water Supply Project
DATE OF IPPER : May 2000
EVALUATION TEAM : G. YIRGA-HALL and V.R. MEHTA (Consultant)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	CRITICAL ASSUMPTIONS
GOALS 1.1 To promote good health and development through provision of sustainable safe water supply and sanitation services.	1.1a Service level by population served; 1.1b Quality of service as determined from the type of services (piped water, stand posts, etc. and laboratory test results 1.1c Statistics for incidence of water related diseases in Bauchi for each year since 1987 and incidences of outbreaks of epidemics.	National reports on water and sanitation coverage Statistics of the Ministry of Health regarding incidence and trends of water borne diseases or epidemics; results of Governmental or NGO surveys; direct site visits and interviews with Health clinics, NGOs, Beneficiaries. BSWB's reports.	
OBJECTIVES 2.1To alleviate the shortage of potable water required for domestic, social and economic uses by augmenting the Water treatment plant and rehabilitating the reticulation systems. 2.2 To strengthen the institutional capacity of BSWB in accounting and personnel management, computerization and operations and train its staff.	**At Appraisal** 2.1a Treatment Plant capacity to increase by 45,500m³/day; 2.1b demand level to increase from 35 liters/capita/day at least 106 liters/capita/day by the year 2000; No other verifiable indicators were given No verifiable indicators were provided	BSWB's operational and commercial statistics. Supervision Reports Project Completion Report.	**At Appraisal** Federal and State Governments' commitment to the social objective of provision of basic needs, better health and adequate provision of potable water. State Governments' political will and commitment to granting of autonomy to the water utility.

2.3 To establish and achieve best environmental standards & practices.	No verifiable indicators were provided		National macro economic environment for industrial investment remains favourable Timely availability of operating budget. **At Project Completion and Post-Evaluation** Inadequate enabling environment for the BSWB to operate on commercial lines Inadequate institutional reforms and capacity building efforts
OUTPUTS 3.1a A 45,000-cm/ day water treatment plant with ancillary facilities including a testing laboratory constructed and made operational. 3.1b A pumping station with four 800cm/ hour capacity pumps with a separate building constructed and made operational 3.1c A 6,000 KV/ 2,100 KVA standby power station with a separate building and ancillaries constructed and made operational. 3.1d A 13.6km of ductile iron (DI) pumping mains installed and made operational. 3.1e A 64.96km of trunk distribution lines (200 to 700 mm diameter) supplied, laid and put into use. 3.1f Secondary distribution network of 145 km A.C. pipes (between 100 and 300 mm diameter) for new as well as replacement of sub-standard lines supplied, installed and put into use.	**At Appraisal** 3.1 launching of bids, Bank approval of procurement process, contract awards; disbursement requests etc.	Contract documents, Progress reports, acceptance reports, and completion reports. Bank Supervision mission reports.	Timely selection of consultants and contractors. Consultants and contractors selected have adequate expertise, capacity and financial resources. Effective monitoring, quality control and supervision by consultants and Bank. The State Government and the Bank release funds on timely basis BSWB functions as an effective and efficient utility

			At Project Completion and Post-Evaluation
3.2a 30,000 house connections effected. 3.2b 30,000 consumer- meters and leak detection equipment supplied and put into use. 3.2c 10,000 consumer meters for other urban areas of the state purchased and installed.	3.2 Materials & facilities acceptance reports.		Dispute of State Government with Management consultants led to ultimately scrap of the technical assistance component of the project Ineffective and inefficient BSWB mainly resulting from lack of autonomy
3.3 Vehicles, heavy equipment and communication equipment etc., for operational assistance purchased and put into use.	3.3 Purchase Invoice and acceptance reports	Operation and financial accounting manuals, asset registers.	
3.4 A total of 115 man months of training in General accounting, management accounting, asset management and inventory control, commercial operations, organization and personnel and computerization (both hardware and software) provided and trained staff effectively assigned.	3.4Technical assistants recruited. Contracts signed.	Manpower reports. Progress reports, supervision missions reports, completion report.	
3.5a Design and supervisory consultant services procured and effectively used. 3.5b A study report on the impact of the project on the sanitation effectively produced and recommendations implemented.	3.5 Contract for Study. Production of the Study Report **At Project Completion and Post-Evaluation** Reduction in scope of the distribution system (item 3.1 of the Outputs). Scrapping of the technical assistance component (item 3.4 of the Outputs). Non implementation of the sanitation study report (item 3.5b of the Outputs)	Contract documents Study report.	

<table>
<tr>
<td>Activities/ Inputs
4.1a Fulfilment of conditions of effectiveness
4.1b Establishment of PIU.
4.1c Procurement of consultancy services.
4.1d Preparation of bid documents.
4.1e Invitation of tenders.
4.1f Evaluation of bids.
4.1g Selection of contractor.
4.1h Mobilisation.

4.2a Construction of
➢ Two upward flow clarifiers
➢ Six gravity filters
➢ A chemical dosing station and a chemical supply store
➢ Chlorine room with gas chlorinator
➢ Clear water reservoir
➢ Operating and laboratory buildings with control panels & equipments
➢ A high-lift pumping station comprising building, four pumps and surge protection equipment etc.
➢ A power station comprising building, 2 600V/2100 KVA generators and transformers
➢ 13.6 km 700 mm dia. Pumping main, and
➢ 65.960 km of 700-200 mm dia. Distribution mains

4.3 Procurement of vehicles and equipment

4.4 Technical Assistance for institutional strengthening

4.5 Design and Engineering Services and Sanitation study</td>
<td>Financial Plan (in UA Million)

At Appraisal
<table><tr><td></td><td>Forex</td><td>Local</td><td>Total</td></tr><tr><td>ADB</td><td>44.94</td><td></td><td>44.94</td></tr><tr><td>Gov't</td><td>5.73</td><td></td><td>5.73</td></tr><tr><td>Total</td><td>44.94</td><td>5.73</td><td>50.67</td></tr></table>
At Project Completion and Post-Evaluation
<table><tr><td></td><td>Forex</td><td>Local</td><td>Total</td></tr><tr><td>ADB</td><td>44.94</td><td></td><td>44.94</td></tr><tr><td>Gov't</td><td>0.85</td><td>3.50</td><td>3.80</td></tr><tr><td>Total</td><td>45.80</td><td>3.50</td><td>49.30 *</td></tr></table>
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* There is still an outstanding payment of UA0.358 million to consultants and contractors for services already rendered</td>
<td>Periodic progress reports.
Disbursement Reports.
Supervision and monitoring reports of the executing agency/ consultants and the Bank.</td>
<td>Conditions of effectiveness of loan are fulfilled in time.

All procurement actions are on schedule.

Timely recruitment of competent consultants and contractors.</td>
</tr>
</table>

BAUCHI TOWNSHIP WATER SUPPLY PROJECT

PERFORMANCE EVALUATION RATING

IMPLEMENTATION PERFORMANCE RATING

Component Indicators	Score (1 to 4)	Remarks
1. Adherence to time.	2	10 months delay in project.
2. Adherence to cost schedule	2	Had it not been for the deletion of some critical components, cost variation would have been large.
3. Compliance with Covenants	2	Conditions of effectiveness met but all the three covenants were not adequately fulfilled.
4.Adequacy of Monitoring & Evaluation and Reporting.	1	Regular quarterly reports were not submitted. The Bauchi State government took actions without approval and even without informing the Bank.
5. Satisfactory Operations	1	Operations and maintenance of plant and water supply system were not satisfactory
Overall Assessment of Implementation performance.	1.6	Unsatisfactory.

BANK PERFORMANCE RATING

Component Indicators	Score (1 to 4)	Remarks
1. At identification	N.A.	Project was identified and presented by the Government.
2. At preparation of project	1	Bank input in project preparation was minimal.
3. At appraisal	2	Bank's technical assistance and conditions were appropriate but EA was not familiarized with Bank's procurement guidelines and requirements.
4. At supervision	1	Inadequate- total supervision of only 2.9 man-days for the entire implementation period.
Overall assessment of Bank's Implementation Performance.	1.33	Unsatisfactory.

BAUCHI TOWNSHIP WATER SUPPLY PROJECT

PROJECT OUTCOME

No.	COMPONENT INDICATORS	SCORE (1 TO 4)	REMARKS
1.	**Relevance and Achievements of Objectives.**	**1.57**	**Unsatisfactory**
i.	Macroeconomic Policy	2	The project goal of improving the health of the people was relevant to the overall macro economic policy but the achievement was only partial, as the benefits did not fully reach the poor.
ii.	Sector Policy	2	Integrated approach not adopted. Example, lack of a sanitation component eroded the achievement of sector policy objectives fully.
iii.	Physical (including Production)	2	Some original components such as 40 km of replacement of distribution lines and the technical assistance for institutional development were not implemented.
iv.	Financial	1	Sub-optimal revenue collection- revenues are not able to even cover O&M costs.
v.	Poverty Alleviation & Social and Gender.	2	Women have benefited from the project but service coverage to urban poor is inadequate.
vi.	Environmental	1	Negative impacts of lack of proper sanitation and drainage affects some areas and diseases such as Bilharzia spawned by the Gubi dam reservoir.
vii.	Private Sector Development	1	Privatization of the government utility or private sector participation in operation or maintenance was not visualized. The expected industrial estate development did not materialise due to lack of enabling environment
2.	**Institutional Development**	**1.25**	**Unsatisfactory**
i.	Institutional Framework (incl. Restructuring)	1	A fairly autonomous BSWB has been provided for (mandated in an Edict of the State Government) but not put in practice.
ii.	Financial and MIS (including Audit systems)	1	The institutional development component (TA) was not implemented.
iii.	Transfer of Technology	1	Very little has been achieved.
iv.	Staffing by qualified persons and Training	2	A few top-level officials are qualified staff.

3.	**Sustainability**	**1.63**	**Unsatisfactory**
i.	Continued Borrower commitment	2	State government's support for BSWB in general or in regard to specific issues such as autonomy, timely release of funds, payment of bills etc. has been very low. There is willingness to improve this situation
ii.	Policy Environment	2	There is positive indications that this will improve in future
iii.	Institutional Framework	2	A framework of a fairly autonomous BSWB has been put in place but has yet to be implemented in practice.
iv.	Technical Viability and Staffing	2	Plant is technically viable. Technical viability of distribution pipes was compromised by use of steel pipes. Capability of technical staff is weak. O&M facilitation is not yet adequate
v.	Financial Viability including cost recovery mechanisms	1	Sub-optimal revenue collection- revenues are not able to even cover operational and maintenance costs. It would take quite some time to turnaround the utility to a viable institution provided the enabling environment is put right
vi.	Economic Viability	1	This is hinged to its financial viability and Government's commitment to put the enabling environment in the right direction
vii.	Environmental Viability	2	It would be a long-term objective provided the integrated approach advocated currently is implemented.
viii.	O&M facilitation	1	This is dependent on the financial viability of the utility and hence a long term realization
4.	**Economic Internal Rate of Return**	**1**	**Inadequate base line data to calculate the EIRR. Unsatisfactory based on Qualitative assessment**
	Overall Assessment of Outcome	**1.36**	**Unsatisfactory**

BAUCHI TOWNSHIP WATER SUPPLY PROJECT

RECOMMENDATIONS AND FOLLOW-UP ACTION MATRIX

MAIN FINDINGS AND CONCLUSIONS	RECOMMENDATION	FOLLOW-UP ACTIONS	RESPONSIBILITY
Formulation and Project Rationale			
1.1Project objective was in line with sector goal but lack integrated approach. Project prepared without detailed engineering design leading to changes and modifications and cost overrun	1.1 Project formulation needs to be based on integrated approach and detailed engineering designs to take account of the investment requirements in both water supply and sanitation infrastructure	1.1a Ensure that future studies adopt integrated approach 1.1b Undertake studies to determine options for addressing the sanitation problems of the township	Borrower/Bank (OCDN) State Government
1.2 Sector issues and institutional arrangements not fully dealt with at the time of project formulation	1.2 Sector issues such as institutional arrangements for integrated management and development of water resources and institutional autonomy for the executing agencies should be adequately addressed at project preparation and appraisal	1.2 Streamline the duties and responsibilities of the various parties involved in the water supply and sanitation sector including that of the Environment Protection Agency	State Government
Project Implementation 2.1 Changes in project scope and component specifications not carefully studied impacting negatively impact on service delivery	2.1 Implications of any changes and modifications need to be carefully reviewed prior to approval	2.1 Changes and modifications have to be clearly indicated in issues papers and BORs with full justifications and the risks involved	Bank (OCDN)

2.2 The technical Assistance Component was not implemented due to conflict between the Management Consultant and the State Government which led to reverting the funds to meet cost overrun in the engineering component	2.2 Technical Assistance Component need to be included in project finance based on a need assessment study that clearly shows the risks involved to avoid adhoc inclusion or exclusion of such component at the time of appraisal and implementation of projects.	2.2 Ensure that need assessment for technical assistance component is included in project feasibility studies up-front or in self-contained capacity building studies to avoid adhoc determination of such need	Borrower/Bank (OCDN)
2.3 Bank supervision missions were inadequate and lacked the required skill mix	2.3 There is need to assess the magnitude of all issues in determining the frequency and skill mix of supervision missions	2.3 Issues Paper needs to indicated the skill mix required having considered the magnitude of all issues	Bank (OCDN)
<u>Compliance with Loan Conditions</u> 3.1 Conditions to loan effectiveness were fulfilled on time while other conditions are partially fulfilled	3.1 There is need to ensure that conditions are fulfilled on time	3.1 Issues Paper needs to cover the status of fulfillment of all conditions to facilitate timely follow-up	Bank (OCDN)
<u>Performance Evaluation and Project Outcome</u> 4.1 There is imbalance in sector investment (no investment went into the sanitation sub-sector and inadequate investment went into the transmission, distribution and stand posts or house connections thereby limiting service delivery	4.1 Future interventions need to see to it that there is balanced investment in the sector in order to enhance the development impact of the investments	4.1 Feasibility studies need to be carefully examined to see to it that an integrated approach are adopted in determining the least cost and balanced investment options for the development of the sector	Borrower/Bank (OCDN)
4.2 The BSWB is financially weak and lacks autonomy	4.2 BSWB needs to be accorded autonomy to run its mandates on commercial lines and achieve financial viability	4.2 The provisions of the 1998 Edict needs to be implemented fully	State Government

Sustainability			
5.1 Poor enabling environment to effectively turnaround the BSWB into a viable utility thus affecting the long-term sustainability of the project and the services of BSWB	5.1a The long-term sustainability of BSWB could only be achieved if it is allowed to exercise its mandates in line with the 1998 Edict that covers provisions on institutional autonomy, cost recovery and tariff setting	5.1 -do-	State Government
	5.1b There is need to proved adequate funds for undertaking urgent repair works and meeting major O&M costs such as chemicals and electricity	5.1b Release funds on a priority basis to meet urgent repair works	State Government
5.2 Lack of investment to improve and expand the water supply and sanitation infrastructure	5.2 Adequate investment in a balanced way is required to improve the sector's infrastructure	5.2 Financing from multilateral financial institutions, bilateral sources and the private sector need to be sought and coordinated. Dialogue needs to be reinforced to lay out the options for private sector participation	Borrower/Bank (OCDN)
5.3 Lack of counter part funding to implement the institutional development and UfW components of the World Bank funded NRWP	5.3 There is an urgent need to release funding to implement the institutional development component of the on-going World Bank funded project	5.3 The required counter part fund should be released as a matter of priority	State Government