



**REGIONAL CONFERENCE ON THE REFORM  
OF THE WATER SUPPLY AND SANITATION  
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**African Development Bank Group's Experience in Water Supply and  
Sanitation Projects**

**Summary of Findings, Lessons Learned and the Way  
Forward**

**OPERATIONS EVALUATION DEPARTMENT**

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Note: Review of Bank Experience on Rural Water Supply Projects has already been presented to the Bank Group Board. The Report on the Study on Bank Group Experience in Urban Water Supply and Sanitation Projects will be presented to the Bank Group Board in the very near future. This summary report is prepared based on the two main reports.

## Executive Summary on AfDB's Experience in Water Supply and Sanitation Projects

### **1. African Development Bank Lending to the Water Sector**

Since its inception, Bank assistance priorities have continually evolved, but the water sector has always been a significant lending area. From 1967-99 the Bank supported 224 water sector projects with UA<sup>1</sup> 2.1 billion, 7.8% of total loans. The main lending goal, promotion of health and socio-economic development, was to be achieved through the provision of basic water supply and sanitation (WSS) infrastructure able to meet projected service demand in rural and urban areas. First generation projects addressed infrastructure provision, whilst second generation projects emphasised rehabilitation works and technical assistance for studies and capacity building in line with the Bank's Water Supply and Sanitation Policy Document issued in 1989. To guide future policy, the Bank reviewed its lending to the sector for projects approved from 1974-90. Assessment was largely by examination of project reports, addressing 28 urban and all 20 rural projects for the five Bank regions.

### **2. Project Relevance, Entry Level Quality and Efficiency of Implementation**

Projects were able to provide basic WSS infrastructure, and so were highly relevant to the governmental and donor development agenda at that time. However, by current standards, projects were not fully relevant as they were rarely undertaken as part of an integrated policy (e.g. most water supply projects did not consider sanitation), and did not meet the basic needs of the urban poor, informal settlements and most rural areas.

The quality of projects at entry (i.e. project planning) was inadequate. Comprehensive sector studies and an integrated water resources management (IWRM) approach were absent, hence, projects were piecemeal, largely driven by immediate needs and at times political expediency. Logical frameworks were not used until 1990, so understanding and assessment of the input-activity-output-impact chain was very limited. Where logical frameworks were used, their value was undermined by a lack of suitable performance indicators and supporting baseline data. The poor quality of feasibility studies and detailed design, exacerbated by an absence of participatory planning, led to high failure rates, particularly for rural water supply projects. In many cases Bank assistance with project development was inadequate due to a limited skill mix (e.g. economists and/or engineers but no environmental or gender specialists).

Poor entry level quality contributed to mixed, often poor, implementation efficiency. Time and cost overruns that were predictable given experience of the sector, but which were not planned for, coupled with inadequate supervision, a lack of donor co-ordination, and unavailability to the borrower of counterpart funding led to projects plagued by delay, many by more than five years. Civil strife and executing agencies that lacked autonomy, skilled manpower and financial viability added to the problem.

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<sup>1</sup> UA 1 = US \$ 1.298 (February 2001)

### **3. Efficacy and Impact of Bank Assistance**

The efficacy of projects is judged on financial, economic and operational performance. Financial and economic returns were lower than forecast as assumed conditions (e.g. political freedom to set tariff levels, growth in service demand, adequate operation and maintenance) were not realised. Operational performance was also weak, with poor service delivery, many illegal connections and substantial leakage. In most projects maintenance was unsatisfactory due to use of inappropriate technology, lack of power and spare parts, non-standardisation on pumps, and an inability to retain qualified technical and managerial staff in the face of uncompetitive remuneration.

The impact of Bank assistance is assessed by reviewing the socio-economic, environmental, gender and private sector participation effects of projects, although not all of these criteria were central to projects at the time of their approval. Overall, impact was mixed. WSS projects did meet basic need in the areas served, reducing deprivation. Water supply projects reduced vulnerability to disease (although difficult to assess due to poor base data), and in rural areas women and children benefited, particularly girls who gained time to attend school. On the other hand, limited sanitation investment, including inadequate wastewater disposal from water supply projects, increased incidence of malaria and other disease, and created adverse environmental impact. The urban poor, informal settlements and rural areas were inadequately catered for.

Cognisant of the above, the Bank has in recent years taken major steps in defining its Vision Statement focusing on cross cutting issues such as poverty, gender, environment, stakeholder/community participation and public/private sector partnership. These issues are now mainstreamed into the Bank's operations in order to bring about broad based and sustainable development in regional member countries (RMCs). In addition, the Bank has streamlined and strengthened its internal processes. Strict application of the logical frameworks is now enforced and more resources are available for supervision with an appropriate skill mix. The new Policy for Integrated Water Resources Management (IWRM) now guides the Bank's intervention in the water supply and sanitation sector. It, among others, fosters demand driven approaches and community participation particularly in rural areas right from the conceptual stage up to the management and operation as well as monitoring and evaluation of the schemes.

### **4. Bank Support for Institutional Development and Capacity Building**

Institutional development and capacity building is critical in the WSS sector. While a comprehensive study on this aspect is currently underway in the Bank, preliminary review indicates that the Bank has encouraged improvements in institutional and financial viability since the 1970's, via conditions on loans to borrowers, and additionally from the late 1980's through the provision of appropriate technical assistance. The technical assistance is directed at organisational restructuring, training and logistical support for Project Implementation Units and addresses areas such as financial control, administration, leadership, commercial and consumer orientation and technical excellence programmes. The review of these institutional interventions reveals several limitations. First, they were piece meal and limited in scope, oriented to projects and not long term programmes of institutional change. Second, they focussed on the public executing agency, and ignored the opportunity to mobilise

limited resources via partnership with other public, private and civil groups. Third, they were poorly supervised, were not effective at retaining trained staff, and some suffered diversion of funds to engineering activities.

The technical assistance did facilitate skill transfer to local staff, and helped create a stock of national experts, even if staff did not always stay with the target organisation. The development of local consulting firms and individuals was encouraged. Project implementation units helped to execute projects and win Bank's support for second generation projects. However, if institutional development is a factor in sustainable development then the technical assistance programme was not effectively implemented to achieve this objective. The main reasons why Bank assistance for institutional development failed were an absence of a strong policy and the inadequacy of the instrument (Technical Assistance) which was usually provided based on supply driven approach. The lack of political commitment to reform is also a major barrier that limits the autonomy of executing agencies and hence their ability to institutionalise a reform process, develop appropriate institutions, implement a participatory approach and so exercise sound financial and operational management to ensure effective service delivery. Current practice is to channel such instrument following on need assessment study and encourage sharing of experience and manpower development through peer to peer and south to south co-operation as well as private sector participation.

## **5. Recent Initiatives in the Water Sector**

The Bank was active in the Africa Water Vision for 2025 process. The Vision document sets targets to be achieved progressively up to the year 2025. Appropriate linkages and guidelines are being developed to relate the Bank's Vision Statement and the IWRM Policy with the African Water Vision for 2025. The Bank is actively supporting the process of IWRM implementation by regional member countries (RMCs). Civil society and the new donor agenda have fostered an improved enabling environment in RMCs, leading to better governance, public sector reform, participatory development and private sector involvement.

## **6. Lessons Learned and the Way Forward**

The evaluation reports<sup>2</sup> detail lessons and recommendations drawn from the water sector review. First, there is a fundamental need to effectively implement the IWRM policy consistent with the Africa Water Vision 2000. Informal settlements, rural areas and the urban poor have the most urgent needs for potable water supply and proper sanitation facilities. Second, donor funding priorities and product lines must be reviewed. RMCs must be assisted in their efforts to decentralise service provision, and reinforce the on going demand responsive approach. More financial and human resources should be made available to support operation and maintenance, including rural village level programmes and community provision of low-end sanitation services. Care needs to be taken in the choice of technology and there is need to create a mechanism that could ensure the timely availability of spare parts and maintenance services.

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<sup>2</sup> Reports prepared by the Operations Evaluation Dept. , AfDB.

Third, the Bank must operate more effectively as a catalyst by promoting public-public and public-private partnerships that mobilise greater resources and improve service delivery. Private sector participation in particular must be accelerated by the Bank and RMCs, a process that can be assisted by 'unbundling' WSS services so as to enable phased entry of the private sector. WSS services tend to be monopolistic, hence, a strong and healthy regulatory framework will be required to prevent excessive prices and poor service delivery from the private sector. Community and civil groups must be empowered to participate in the full range of water management services, and the widespread adoption of community participation/demand responsive approaches promoted. However, the heterogeneous nature and capacity of communities must be recognised until participatory planning is institutionalised. Finally, cost recovery must be achieved so as to guarantee continued service delivery, with prices sensitive to low-income users. Lifeline tariffs, regulation of small private vendors' resale prices, and an incremental introduction of full cost pricing to sensitive communities are required. The Bank's and many of the RMCs' recent initiatives do address most of the key issues in the sector. Their effective implementation is paramount.

## ABBREVIATIONS

ADB	African Development Bank
ADF	African Development Fund
APPR	Annual Portfolio Performance Report
EIRR	Economic Internal Rate of Return
FIRR	Financial Internal Rate of Return
IWRM	Integrated Water Resources Management
M&E	Monitoring and Evaluation
MPDE	Methodology for Design and Evaluation
NGO	Non-Governmental Organization
NTF	Nigeria Trust Fund
O&M	Operation and Maintenance
OPEV	Operations Evaluation Department
PCR	Project Completion Report
PI	Performance Indicators
PPAR	Project Performance Audit Report
PPER	Project Performance Evaluation Report
PSP	Private Sector Participation
RMC	Regional Member Country
UA	Unit of Account
UfW	Unaccounted-for-Water
VLOM	Village Level Operation and Maintenance

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## 1. INTRODUCTION

### 1.1 Evaluation of the Water Supply and Sanitation Sub-Sector

Water Supply and Sanitation has positive impact on poverty reduction and environmental sustainability provided the policies and operating environment such as good governance, public sector reforms, public/private partnership, demand driven participatory development are put in place, supported and sustained. As a part of its routine lesson learning exercise of post evaluation of Bank Group's completed programmes and projects, two separate comprehensive studies of the Group's experience in the Rural and Urban Water Supply & Sanitation Sub-sector were recently prepared. In addition, separate case studies based on short field missions, were also later carried out to evaluate the Capacity Strengthening of Urban Water Supply and Sanitation Entities in Ethiopia, Ghana, Kenya, Morocco, South Africa and Zambia. While the latter evaluation is currently under compilation, the missions' findings have been considered in the preparation of this Synthesis Report. This report synthesizes the findings, lessons and recommendations of all these studies and is expected to serve as a useful and timely feedback for the Operations staff.

### 1.2 Scope of the Report

1.2.1 This report summarizes main findings from the studies and reports of recent evaluation missions to provide the Bank's experience in the sector as assessed based on evaluation benchmarks such as relevance, efficiency, efficacy and impact of Bank assistance both in engineering components (hardware investments) and capacity building/support components (software investments). Some key issues of special relevance to the sector are raised for consideration in future interventions. Finally the lessons and recommendations are highlighted in the form of Matrix shown in Annex 1.

1.2.2 The two Study reports were largely a desk base examination of a selected sample of completed Water Supply and Sanitation Projects financed by the Bank. The sample of projects reviewed comprised 28 urban projects out of a cohort of 208 urban projects and all the 20 rural projects financed by the Bank Group since its inception. PCRs/PPARs/PPERs were available in all the 28 urban projects and in only 3 rural projects. The completed projects were approved between 1974 and 1990 and are from all the 5 regions of the Bank; some of the Rural Water Supply Projects reviewed included on-going projects approved between 1994 and 1997. The total loan amount, at appraisal, of the reviewed projects was UA386 million for the urban projects and UA 157.65 million<sup>1</sup> (excluding one cancelled) for rural projects. The loans were raised from ADB/ADF individually or in blend. 15 of the urban projects covered under the study were funded from ADF and 9 were funded from ADB. In addition 4 projects had ADF/ADB blend of loan funds. Other multilateral and bilateral donors had also provided some financing while governments/utilities availed counterpart funds to cover mainly the local cost portion of the projects' investments. In ADF, the average loan size was UA 7.46 million (ranging from a minimum of about UA 2.56 million to a maximum of UA 15.00 million) while in ADB the average loan size was UA 15.00 million (with minimum and maximum of about UA 5 million and UA 44.95 million respectively). The 4 blended loans had 31 percent of ADF financing and 69 percent from ADB, and averaged UA 32.22 million. Most of the rural projects were financed from the ADF resources.

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<sup>1</sup> UA 1 = US\$1.29779 (rate applicable for February 2001)



Table 1: Number of Projects Reviewed by Region

Sub-sector	Region					Total
	East	West	North	South	Central	
Urban	9	6	3	7	3	28
Rural	3	8	5	3	1 (cancelled)	20 (1 cancelled)
Total	12	14	8	10	4 (1 cancelled)	48(1 cancelled)

1.2.3 A large number of them are first generation projects and hence reflect the policies and practices for preparation and implementation of these projects at that time. In an effort to check the validity of past lessons in the current context, the performance of the Bank Group's current portfolio in the sector was also reviewed through a selective examination of recent supervision reports and Annual Portfolio Performance Reports (APPRs). In addition, appraisal reports of the most recently approved projects in the sector were also examined.

### 1.3 Overall Bank's Portfolio in the Water Sector

1.3.1 Overall Bank Group financing in the Water Supply and Sanitation Projects including studies for the period covering 1967-1999 was a total of UA2,102 million involving a total of 224 loans and representing 7.8 percent of the total Bank lending for the period. The average loan size for the sub-sector was UA 19.5 million for ADB, UA 4.97 million for ADF and UA 6.00 million for the single loan from Nigeria Trust Fund (NTF). During the 1970s, the share of the water supply and sanitation sector was 13.5 percent of the total lending. This declined to 7.3 percent in 1980s and 7.5 percent in the 1990s as shown in Table 2.

Table 2: Bank Group's Lending to Water Supply and Sanitation Sector  
(in million UA)

	1967-69		1970-79		1980-89		1990-99		1967-99	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
ADB	1.80	13.2	106.24	12.8	392.23	5.8	825.83	8.8	1,326.10	7.8
ADF	0.00	0.0	96.95	15.7	410.63	9.7	262.40	5.2	769.98	7.8
NTF	0.00	0.0	0.00	0.0	6.00	6.5	0.00	0.0	6.00	2.4
BANK GROUP	1.80	13.2	203.19	13.5	808.86	7.3	1,088.23	7.5	2,102.08	7.8

Sources: ADB Statistics Division and OPEV.

1.3.2 In mid nineties, the lending, not only for water supply and sanitation, but for all other sectors and sub-sectors was reduced to a trickle because of the non-availability of ADF resources against increasing needs of RMCs particularly sub-Saharan African countries, for concessionary financing. Very few were economically strong to bear interest bearing loans from ADB resources. As a result both ADF and ADB lending operations were at their lowest levels. In fact, ADF lending for this sector during 1993 dropped to only UA 11.58 million and became zero during 1994 and 1995. Total ADB and ADF lending levels for in 1999 had still not reached the 1992 and 1993 levels as shown in Table 3.

**Table 3: Bank Group Lending to Water Supply and Sanitation Sector in 1990s**  
(UA million)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
ADB	140.43	217.16	211.40	106.40	81.10	0.00	0.00	0.00	49.74	19.60
ADF	44.0	34.93	34.91	11.58	0.00	0.00	40.95	41.75	28.58	25.71
Total	184.43	252.09	246.31	117.98	81.10	0.00	40.95	41.75	78.32	45.31

Source: ADB Statistics Division

#### **1.4 Bank Group's Water Supply & Sanitation Sub-Sector Policies**

1.4.1 The water supply and sanitation sector occupies a significant place in the Bank Group's overall lending and assistance policy. Safe drinking water is one of the important basic human needs and is indispensable for sustaining and enhancing life. Currently, about two-thirds of the rural population and a quarter of the urban population still lack access to safe water. The sanitation situation is even more precarious in most of the regional member countries (RMCs).

1.4.2 The Governments of RMCs have long recognized the necessity of providing adequate quantity and quality of potable water and appropriate sanitation particularly towards combating poverty. Significant policy changes and public sector reforms are taking place to creating an enabling environment for the development of the sector. The African Development Bank on its part has since 1989 refocused its assistance by first issuing a Policy Document for the Water Supply and Sanitation Sector and investing more in rehabilitation of the water supply and sanitation systems and in capacity strengthening of the service providers.

1.4.3 The 1989 Policy Document had identified the sectoral goals in water supply and sanitation as provision of adequate water supply and sanitation services to the greatest number of people of the RMCs, taking into account the potentialities of the countries and beneficiaries. The Bank Group sought to get maximum possible coverage of the services within the means available in order to improve public health, enhance the quality of life, promote community organization and contribute to social and economic development.

1.4.4 To focus its resources on the achievement of the policy goals, the Bank Group determined that high priority be accorded to projects that focus on (i) planning and coordination (i.e., establishment of national project priorities followed by sectoral and institutional assessments leading to a preparation of coordinated national and regional sectoral master plans); (ii) social issues (i.e., human resource development initiatives, promotion of community participation and enhanced roles of women and integration of user and hygiene education programs); (iii) institutional, financial and technical issues (i.e., institutional assessment and strengthening, improved and more equitable cost-recovery, improved systems for operation and maintenance, rehabilitation of existing capital facilities, involvement of the private sector and development and utilization of low-cost technologies); and, (iv) environmental issues (i.e., integrated water resource management, wastewater treatment and disposal and solid and toxic waste disposal).

1.4.5 In rural water supply projects, in its 1989 policy document, the Bank sought community participation from the project planning to evaluation stage. The Bank also stressed that it would give its support to rural and semi-urban projects that incorporate applied research on strategies aimed at promoting community participation.

1.4.6 The Bank has recently proposed to its member countries, bilateral and multilateral partners as well as its various stakeholders a new Vision for development in Africa in the form of an action plan for supporting actions and initiatives to promote economic performance and progress. The vision identifies poverty as the primary development challenge facing Africa and renews the Bank's commitment and mission to assist the RMCs to break this vicious scourge. The Bank Vision will now be focusing on three major sectoral schemes, namely: agriculture and rural development, human resources development and the development of the private sector. Even though water supply and sanitation are not separately mentioned in the Vision statement, the sector is expected to receive support in the Vision programmes in the improvement of health and education in the social sector and in poverty reduction (for a detailed discussion of the Bank Vision, see para. 5.1). The Bank's current and future interventions in the water supply and sanitation sector are now guided by its new Policy for Integrated Water Resources Management (IWRM), which among others, fosters demand driven approaches and community participation particularly in rural areas right from the conceptual stage up to the management, operation and monitoring and evaluation stages. The changes are expected to result in improvements to the planning and execution of on going and future projects. The Bank was active in the African Water Vision for 2025 process. The Vision document sets targets to be achieved progressively by the year 2025. The next move is to develop appropriate guidelines creating linkages between the Bank's Vision Statement, the IWRM Policy with the African Water Vision for 2025.

## 2. MAIN FINDINGS

### 2.1 Relevance of Project Components and Objectives

2.1.1 In the **urban projects**, the major components of completed water supply projects were rehabilitation and/or construction of new dams and intake structures in 6 projects, treatment plants with capacity in excess of 600,000 cubic meters per day in 18 projects, over 1,000 km of transmission and distribution pipelines, pumps, storage tanks, public standpipes, house connections and leak control and detection equipment. Surprisingly, provision of house consumption water meters was included in only a couple of projects. The main components in the sanitation projects were items such as sewerage treatment plants of over 14,000 cubic meters per day capacity, pumping stations, about 140 km of main sewers and laterals, 32 km of storm water drains, sea outfalls, about 50 ha of wastewater irrigation etc.

2.1.2 In the **Rural Water Supply Projects**, the major components were for construction of dams, bore holes, installation of hand or mechanical pumps, treatment plants, provision of water quality control equipment, pipeline networks, stand pipes, training of managers and supervisory staff of operational staff etc. Projects also included construction of buildings, studies, prospecting and exploratory drilling.

2.1.3 The sector goal was improvement of the health condition and socio-economic development of the population through the provision of basic infrastructure facilities for water supply and sanitation services. The project objectives were provision of safe pipe water and proper sanitation facilities to meet the growing demand in urban areas and extending coverage in rural areas. Other objectives in the urban projects were to promote autonomy of water supply and sanitation utilities and to strengthen the capabilities of the executing agencies, improve the operations and financial performance of the service providers, reduce the high percentages of unaccounted-for-water (UfW), and extend services to low-income groups. With sanitation projects, the sector objective was to improve public health standards. The project objectives were provision of efficient sewage collection, treatment, and disposal systems.

2.1.4 The sector goal as well as project objectives were highly relevant responding to governments and donors policies and strategies that aim at provision of adequate potable water supply and proper sanitation services to the population at large. Current relevance is even more pronounced in view of the fact that more than half of the population in Africa is still without reliable supply of clean drinking water; and even a higher majority resides in very poor sanitation environment. However, as the projects were seldom undertaken as a part of any integrated sector policy and were generally individual interventions to meet the specific requirement at a place, the *relevance* of project objectives as conceived was generally limited only to the project requirements of the time. Also, past interventions had not adequately factored in full requirements for sanitation, solid waste disposal, and health and hygiene education, particularly for the informal settlements, the urban poor and the rural population.

2.1.5 In the rural water supply projects, the objectives were to meet water supply shortage and provide to people and cattle easy access to drinking water. This was expected to decrease prevalence of water diseases and improve the living conditions of people and cattle and also create atmosphere a conducive for private investment in the rural areas served. Pastoral component was included even though not specifically mentioned in a large number of cases. Some of the projects also included components for strengthening supply, installations and billing capacity of institutions and organizations associated with rural water supply. Project objectives were thus relevant in the light of the prolonged water shortage (particularly in the case of Sahel) and the need to provide water to rural dwellers within a short distance so that time for fetching water was reduced.

## 2.2 Quality at Entry and Efficiency of Implementation

2.2.1 The question of integrated water resources management (IWRM) is not addressed in most of the appraisal reports of the completed projects reviewed. The IWRM policies and their implementation were generally inadequate in the RMCs. Thus, past interventions were made "as the need arose" and largely based on piece meal approach. The financing of future water supply and sanitation sector projects by the Bank should be undertaken only within the framework of the integrated water resources management (IWRM) policies of the RMCs.

2.2.2 At project preparation and appraisal stages, methodology for design and evaluation (MPDE) or the logical framework provides the conceptual basis for the causal relationship between the inputs and achievements of objectives on the one hand, and the expected impacts on the other. However, in the reviewed projects, the appraisal reports did not have logical framework as this was not the requirement of the projects approved for Bank finance in pre-1990 period. Performance Indicators (PI), to measure the performance or the impact such as improvement in health, were also generally lacking. Logical framework became a requirement for all the Water Supply and Sanitation Projects approved in the latter half of 1990. Since then, appraisal reports provided some focus on the policy goals, sector and project objectives and activities, risks and assumptions, etc. However, there are still some inadequacies in its application and not enough indicators are included even in some of the current appraisal reports, largely due to lack of base line data.

2.2.3 A lack of logical framework in the earlier projects or their inadequacy in later projects led to implementation of projects without being able to focus on objectives and clear performance targets making it difficult to evaluate development effectiveness. As a step to achieve high project quality at entrance, the Bank should insist that the MPDE should be the central document for discussion of the project right from its inception stage, around which the project should evolve and be firmed up. There is also need for

assessment or analysis of the quality of the existing data or the data collecting machinery and the manner of its strengthening. The need for a discrete component for the long-term development of M&E capability as an integral part of the Bank projects is stressed.

2.2.4 The studies also reveal that the quality of feasibility studies and detailed designs also influenced the *quality at entry* and *efficiency of implementation* in both urban and rural Water Supply and Sanitation Projects. In the rural Water Supply Projects, the initial operations were to meet emergency needs with neither prior hydrology studies nor prospecting, and implementation failure rates were high. None of the rural projects had a sanitation or rural health component. It was also noted that in the urban projects the balance of advantage lies with the projects that are preceded by detailed designs accompanied by a selection of appropriate technology, standardization of equipment and examination of O&M requirements. On the other hand, in **rural water supply** projects where success is predicated on the behaviour of the beneficiaries, the blueprint approach underemphasizes the social processes, changing of behaviour and habits of people and the risks and uncertainties of changing people. Rural projects thus need to better address the social processes and be more flexible.

2.2.5 The report notes some of the recent initiatives of the Bank such as a more participatory preparation of country strategy papers, strengthening of Bank's capacity to undertake economic sector work, the introduction of a new review process that provides for a systematic review of project preparation and appraisals etc., that are expected to improve quality at entry of future projects.

2.2.6 Factors such as time and cost variations, inadequate Bank supervision, lack of donor co-ordination, and unavailability of Borrower counterpart funds in time also adversely affected the *efficiency of implementation*. Implementation delays continued to plague most of the projects, with many of them overshooting the appraisal estimates by over 5 years. At the time of project preparation and appraisal, realistic implementation schedules need to be prepared with due consideration for historical trends and experience in the sector and country. Recent APPRs note some improvement in the implementation performance of the water supply and sanitation projects in the Bank's current portfolio.

2.2.7 Cost overruns and under-runs were noted as a feature in majority of the Study projects. It is important that at project preparation and appraisal, the design and definition of the project as well as cost estimation and provision for price and physical contingencies, is critically examined.

2.2.8 The Bank supervision in a large number of projects was noted to be inadequate. In several cases it was also observed that the missions lacked appropriate speciality mix. In recognition of the importance of supervision in the enhancement of implementation efficiency and its past inadequacy, the Bank has now put greater emphasis on it and some of the more recent supervisions, it was noted, were better planned and executed. The allocation of resources for Bank supervision has also been increased but the report notes that these were spent thinly and it is doubtful if the quality of supervision had uniformly improved. There is continuing need for more frequent, closer and effective supervision with an even greater emphasis in the smaller and weaker economies and in countries with unsettled political and economic conditions. It is also pointed out that a reassessment should be made of the risks confronting the project and the determination of the likelihood of the projects meeting their development objectives should take into account the likely impact of such revised assessments. The report also notes the importance of largely neglected desk supervision in the Bank that could effectively supplement field supervision.

2.2.9 The report identifies the delay in timely provision of counter-part funds as a countrywide continuing problem not limited to individual projects or sectors. It is recommended that as a part of their annual programming exercise, the Country Programming missions should address the problem by having macro-level discussions with the nodal ministries of planning and finance. The report also notes the continuing need for effective donor coordination to avoid adverse fall out on the implementation of the projects.

### 2.3 Efficacy of Bank Assistance

2.3.1 *Efficacy* of Bank operations in the sub-sector is judged on the basis of the financial and economic and operational performance of the projects and their outcomes or success ratings. FIRRs and EIRRs of the **urban** water supply and sanitation sub-sector projects were adversely affected by cost and time overruns in the projects, lack of institutional autonomy, political and institutional constraints in revision of tariffs, high UfW, inadequate operation and maintenance (O&M) and service delivery, non-provision of consumer meters and illegal connections, and slower than anticipated growth in demand. A notable feature was also that the rate of return in post-completion reports in almost all cases was lower than the appraisal estimate, wherever such rates were available at both stages. The report stresses the need for care and rigour in the estimation of EIRR and FIRR and risk and sensitivity analyses at appraisal.

2.3.2 For most **rural water supply** projects, the economic and financial rates of return were not calculated. Evaluation of rural projects on the basis of the same criteria as urban projects is not meaningful as a larger proportion of benefits is qualitative. Maximization of economic and financial benefits is dependent upon the choice of appropriate technology, meeting of highest demand level, participation of beneficiaries in project management, training and extension.

2.3.3 Operation and maintenance were found to be satisfactory in only a few projects and were largely inadequate in most projects. Weak operational and maintenance performance was caused by use of inappropriate technology, lack of spare parts, timely unavailability of funds for purchase of fuel and spare parts, problems of erratic power supply, etc. In addition, arising from a general shortage of qualified and trained staff and the inability of the public utilities to retain them in the absence of competitive compensation packages, there was a general lack of management and technical capability leading to lack of accountability and inefficiency of the O&M apparatus. O&M consequently suffered in almost all the sub-Saharan countries. Weak O&M directly contributed to high levels of intermittent operation, erratic or declining levels of production and poor customer service. Bank-funded water supply and sanitation projects also performed poorly in achieving target reductions in UfW. In rural water supply projects, the problems of lack of standardization of pump models and lack of ready availability of spare parts and trained local technicians that often affected the upkeep and maintenance of water pumps were even more acute than in the urban setting.

2.3.4 The PCR/PPERs assessed the performance and outcomes of 45% of the **urban** projects to be satisfactory. More than half of the projects were rated in the lower band of performance of 'partly satisfactory' or 'unsatisfactory' categories. In the **rural water supply** projects, only three projects were evaluated and these were all rated as satisfactory. A caveat, however, needs to be added. Any judgments on the basis of these numbers are neither entirely credible nor comparable because the pre-1993 PPER ratings did not accurately reflect the development impact and the assessments of overall performance in the PCRs was more subjective.

2.3.5 A variety of factors affected project performance. Success in meeting the goals and objectives of the projects, being in line with sector policy and having borrower commitment, deep institutional reforms, adequate attention to operation & maintenance (O&M), progressive tariff structures with elements of cross-subsidization for the poorer segments of consumers etc. were some of the factors which contributed to economically sustainable and financially viable performance of the projects. On the other hand, projects with partially satisfactory or unsatisfactory outcome generally had lacked these ingredients. Some also suffered from poor and inappropriate designs and changes in project scope resulting in time and cost overruns. A few had suffered from civil strife.

2.3.6 Prospective project performance is now regularly assessed in individual project supervision reports prepared by the operational departments of the Bank. Based on these reports, the percentage of problematic projects in so far as the likelihood of achievement of development objectives is concerned was reported to be only 15 percent in the FY97 APPR and an even lower 10 percent in the FY98 APPR. On the other hand, a significant deterioration in the performance of projects was noted in a number of Study projects between the time of preparation of PCRs and PPERs, invariably caused by weak institutions, operational and maintenance inadequacies etc. In addition, there is also a continuing "disconnect" between project performance assessment in Annual Portfolio Performance Reports (APPRs) and the ultimate OPEV results. Therefore, doubts remain about the actual performance of the current portfolio on the basis of supervision reports. Conclusions on the basis of these prospective assessments may therefore be premature. This indicates that even if projects were implemented successfully, their actual performance and sustainability could not be guaranteed under weak institutions, inadequate O&M etc.

## 2.4 Impact of Bank Assistance

2.4.1 *Impact of Bank assistance* is measured by an assessment of the socio-economic, environmental, gender, and private sector participation effects. Crosscutting issues such as poverty alleviation, women, environment and private sector participation were not central topics at the time of preparation and approval of the Study projects. The post-completion reports i.e., the PCRs and PPERs have nevertheless noted some of the impacts in these areas. Recent appraisal reports are generally factoring in the crosscutting issues.

2.4.2 The water supply and sanitation projects in both **urban and rural** areas helped in reducing the deprivation of the basic needs such as water and sanitation of the population in the areas served by them. The resulting improvement in living conditions of inhabitants of the target areas, particularly in the rural areas and the poor urban settlements, helped reduce the "human poverty". The water supply projects by extending service coverage of the piped and safe drinking water supply had reduced the vulnerability of the population served and particularly the poor to the incidence of water borne diseases. This could be expected to result in reduced medical expenses bills even though concrete quantitative assessment was not feasible because of lack of baseline health data.

2.4.3 On the other hand, the absence or inadequate provision of components for drainage of wastewater generated by water supply projects resulted in increased incidence of some diseases, such as malaria particularly in intensely populated poor settlements. In addition, the low service coverage for the informal settlements of the urban as well as the peri-urban areas and the inefficient service delivery and poor performance of a large number of utilities in sustaining the benefits severely limited the socio-economic benefits enumerated above and the expected impact. The overall water supply and sanitation

coverage in most countries was still low at unacceptable levels and near total coverage even in medium term will require determined and sustained efforts of the RMCs and the donor community.

2.4.4 The reports note that collection of relevant baseline health data and its monitoring at all steps of the project cycle needs to be included in the project matrix as a part of a monitoring and evaluation (M&E) component. The reports also note a general lack of inclusion of health, hygiene and sanitation education as integral components of even the most recent water supply and sanitation projects to maximize their health benefits by improved personal and community sanitary behaviour. The need for inclusion of such components uniformly in all future sub-sector projects as also for obtaining active participation of project beneficiaries, especially women, is stressed.

2.4.5 In their areas of coverage, the projects had generally contributed toward the betterment of the **urban and rural** environment. On the other hand, there was environmental degradation in several cases because of additional wastewater generation and a general lack and inadequacy of systems to handle collection, transport and disposal of human excreta and solid waste. The need for a thorough evaluation of the environmental impact of centralized sewerage facilities, including a risk analysis, in the event of the plant malfunctioning or partial or total non-operation that jeopardizes treatment to approved standards, is highlighted. The reports also stress the need for the establishment of independent environmental regulatory agencies in RMCs to make performance results more credible.

2.4.6 The extension of piped water supply and increase in number of boreholes and standpipes in most of the water supply projects considerably reduced the drudgery of the women and children. In some projects there was evidence that the school attendance of children, particularly the girls, the traditional water haulers, improved considerably in areas served by the piped water supply and standpipes. The reports note that there is need for active participation of project beneficiaries, especially women in design and implementation of health and hygiene education programmes.

2.4.7 The **rural** water projects financed by the Bank had a generally positive socio-economic impact in the project area. The minimum specific consumption stood at 20 liters per capita per day and 40 liters per capita per day for animals; the minimum consumption of 50 liters per capita per day was not reached since it was not an objective. It is interesting to note that human water consumption was lower than for livestock. For some countries (Mali, Botswana), rural water projects had a significant pastoral component. Nomadic livestock farmers are increasingly attracted to water points. Water projects bring improved income, hygiene and literacy of nomads.

2.4.8 Since rural water projects have had no sanitation component, their impact in improving community health conditions was reduced. Diarrheal diseases and malaria are among the major causes of morbidity and mortality in RMCs, especially in the sub-Saharan Africa.

### 3. INSTITUTIONAL DEVELOPMENT AND CAPACITY BUILDING

#### 3.1 Bank Policy

Institutional development and capacity building plays a very significant role in the achievement of policy goals and project objectives in the water supply and sanitation sector. According to the Bank's Operations Manual, institutional analysis is an important part of project preparation and feasibility study but in practice study of institutional aspects was only superficial. The Bank Group's assistance in institutional development in the Water Supply and Sanitation sub-sector in urban projects fell into 3



distinct activities i.e. human resources development, organizational strengthening and overall development of sector institutions.

### 3.2 Relevance

3.2.1 The efforts to strengthen performance in key areas such as reduction of UfW, improvement in standards of O&M, strengthening of administrative efficiency and financial controls and institutional autonomy were all relevant for developing organizational independence, leadership management and administration, commercial and consumer orientation, technical and operational capability and excellence, staff development and retention etc. They, however, lacked overall long-term capacity building analysis or plans and were generally “bits and pieces” programmes. The components had immediate relevance for the particular needs of the utility but a general lack of overall manpower development or staff training policies limited the long-term relevance or sustainability of such efforts.

3.2.2 An important area of neglect in Bank projects was the overall development of sector institutions. There was inadequate conceptualization and analysis i.e., purpose of institutional change, nature of institutional processes that govern the dynamics of the sector, absence of stakeholder analysis, development of strategies etc. Similarly, an important area, which was largely neglected in the Bank’s water supply and sanitation projects, was the development of institutions and management models for supply of water and sanitation to rural communities and poor urban neighbourhoods. In Malawi, the institutions developed under World Bank projects were fairly successful, especially from the point of view of institution building, providing a model for a national approach to managing water in cities and larger towns. However, generally, the focus on the “public utility/executing agency” tended to exclude the roles and capabilities of a wide array of institutions such as semi-public and private service providers; community based organizations, civil societies, extension workers etc. It is only in its current vision that the Bank encourages private sector participation and partnership, which are emerging as the most appropriate solutions for the poor urban and rural communities. However, adequate resources for the benefits of these groups need to be channeled in order to meet the hard and soft investment requirements. The Bank also needs to support private sector participation and partnership, which are emerging as the most appropriate solutions for the poor urban and rural communities.

### 3.3 Impact

3.3.1 The major impact of the Bank’s efforts in the **urban** projects was in imparting individual staff training. Staff of entities also acquired know-how by working with external contractors and consultants. It was, however, noted that a large proportion of these activities was implementation oriented and did not last beyond the implementation phase. In some RMCs, the reform process, achieved through structural adjustment programs of the ADB and World Bank, helped introduction of decentralization policy and encouraged private sector participation. However, the overall impact of the Bank’s water supply and sewerage projects and studies on institutional development in the sub-sector, in spite of some few positive examples, was considered minimal and unsustainable.

3.3.2 In the **rural water sector**, the Bank Group funded very few projects with institutional building components. Countries on their own or largely with support from the World Bank and some bilateral donors have carried out institutional reforms in the water and sanitation sector in Africa. Some of the impacts in some countries are the preparation of Water codes and training of rural supervisors and extension workers in the sector. In some cases, community participation and a sense of ownership in

the beneficiaries was facilitated by the establishment of Water Point Committees and Village Associations. Social structures and links within the communities were strengthened by the formation of village associations to manage water points. However, the progress in the RMCs is generally difficult, slow and uneven. The sustainability of projects correlates strongly with substantial institutional development, particularly the development of local institutions and the survival of community-level water organizations is not routine. The World Bank in its Lessons of Evaluation from Rural Water Supply projects<sup>1</sup> has also noted that institutional development in rural water supply projects is difficult. Given these challenges, careful preparation is needed. Involving the support organization in the earliest planning efforts, and conducting pilot activities on a small scale prior to a large-scale investment, can allow NGOs and communities to get involved effectively and implement integrated schemes (water supply, sanitation and health education as well as small scale economic activities) that could ensure the sustainability of projects.

3.3.3 The major identifiable causes why the Bank's efforts for institutional development in RMCs failed to achieve the desired results and impact, were the absence of political commitment, a practical plan and inadequate Bank follow up. Lack of long-term sector strategies and inadequate mobilization of financial and staff resources also jeopardized sustainability.

3.3.4 Capacity building will be a primary concern of the sector in the foreseeable future but institutional change is a slow process. Lasting institutional reforms require a much longer time frame than the implementation cycle of a single project and, to be successful, need to be undertaken on the basis of a detailed study of the sector and a long term master plan, strategy and commitment beyond the boundaries of individual projects. The dynamics of the processes have to be studied and the management of change has to be strategized. In addition, concerted and innovative efforts are required to obtain RMC's long-term political commitment and mobilize requisite resources. Technical assistance programmes of capacity building and strengthening for the water supply and sanitation entities should also draw on the experiences of the civil societies such as NGOs, local professionals, community organizations etc.

3.3.5 Non-availability of institutional experts within the Bank has also generally been one of the constraining factors. There is need for enhancing Bank's own capability for comprehensive institutional analysis.

#### 4. SUSTAINABILITY

4.1 Sustainability is a function of many aspects such as technical, operational, financial, socio-economic, institutional and environmental performance of the projects. In the **urban** water supply and sanitation sub-sector, inappropriate technology, inadequate and indifferent O&M, high UfW, lack of adequate institutional autonomy and financial constraints arising from inability to fix tariffs at adequate levels have been identified as some of the major factors that have contributed to erosion of sustainability of many of these projects. A lack of an integrated approach in the provision of water supply and sanitation services also hindered the enhancement of uninterrupted service delivery.

4.2 In addition, sustainability of **rural projects** requires, as critical elements, beneficiary ownership, partnership and participation. There is also need for addressing the problems of shortage of trained technicians, uneven technical standards and poor coordination mechanism between the various stakeholders. Village Level Operation and Maintenance (VLOM) concept was developed to localize

<sup>1</sup> Rural Water Projects – Lessons from OED Evaluations, OED Working Paper Series No. 3, March 2000.

the operation and repair activities. In rural water supply, rural communities assisted by potential private operators could also assist in effective and timely maintenance and sustainability.

4.3 Financial constraints too have a considerable impact on the sustainability of the assets and the benefits in rural water supply projects. Inadequate financial resources raised from beneficiaries are not able to meet even the recurring costs. Sustainability requires that all beneficiaries – even poor people – make some financial contribution, at least to maintenance. There is need to develop community financing mechanisms to recover costs

## 5. KEY ISSUES

### 5.1 Bank Vision

A number of *key issues* have been identified. The *Bank's Vision* statement is unclear whether the urban water supply and sanitation sector is its focus area or not. In order to enhance Bank's ability to make an impact on vital areas of concern such as poverty alleviation it is essential that a more explicit Bank Vision and RMC mission statement for the sub-sector is provided. Also, as the Bank's presence in the RMCs in the water supply and sanitation sector has been sporadic and long-spaced Bank's presence as a resource entity is not felt and its ability to promote any significant reforms or improvement in the sector is greatly constrained. A choice has to be made between extensive and thin spreading out of available resources on the one hand and an intensive and effective agenda of operation in some selected utilities on the other. The Bank should also leverage its catalytic role more effectively to bring in larger resources through private sector participation.

### 5.2 Sanitation

5.2.1 The report further notes that development of infrastructure for *sanitation* has received little attention and is generally weak throughout Africa. There is a lack of a single 'home', and appropriate policies and programmes for it. The report notes the near absence of Bank support for systems to handle human excreta and solid and industrial waste and its adverse environmental impact, and the need to address these aspects in Bank's future interventions in the sub-sector. The report recommends that the Bank should strongly encourage and promote reuse of wastewater by incorporating irrigation components in the sewerage schemes, wherever feasible and useful, based on agro-economic studies.

5.2.2 Experience of the Bank, the World Bank and others suggests that the old supply-driven agenda followed by governments and donors for provision of sanitation services cannot meet the challenges created by rapid urbanization, population growth, industrial development and environmental degradation. Adoption of demand-based approach is now called for (see para. 56 below). Urban sanitation programmes need to be unbundled into more manageable components within a strategic macro framework. Experience in developing countries also suggests that community based institutions or NGOs or private service providers are best suited to provide the low-end sanitation services such as community public toilets and baths. The Bank should promote such small-scale providers in order to accelerate the provision of the low-end sanitation services.

### 5.3 Reaching Water Supply and Sanitation to Urban and Rural Poor

5.3.1 Problem of reaching *water supply and sanitation to large population of poor* in the rural communities and the informal and illegal urban settlements continues to be the biggest challenge facing

the RMCs and the donor community. Millions of poor suffer the worst form of “human poverty” because of deprivation or the denial of the basic needs such as water and sanitation. The inhabitants live in squalour and disease. There are also no easy or immediate solutions for relocation of the very large populations of urban poor living in such informal settlements and provision to them of minimum basic needs such as clean water and sanitation becomes inescapable.

5.3.2 Several options have been tried in the region for the low-income communities, who are unable to derive full benefits of piped water and sewerage by unaffordable connection charges and payment on a monthly basis but results were mixed. Some of the countries were able to increase the access to water for the low income communities by creating kiosks for maintaining, operating and collecting user charges. Utilities awarded the kiosks operating contracts to either private operators or NGOs or consumer committees.

5.3.3 Partnerships between utilities and independent private sector providers working on a small and micro scale in the form of non-profit, community interest NGO groups, or of profit making companies or individuals seem to be emerging as the most viable and sustainable options for the upkeep of the standpipes and boreholes and for collection of customer charges and payment to the utility. There is, however, need to simultaneously evolve a mechanism for regulation of resale price by independent providers and control on quality of water. It is important that the institutional arrangement for water supply at public standpipes and water points is studied in its totality at the stage of preparation of the feasibility study and preparation of the project.

5.3.4 Design of rural projects has to be based on beneficiary ownership, partnership and participation. Inclusion of health and hygiene components is also very essential. Village Level Operation and Maintenance (VLOM) concept needs to be encouraged and supported to localize the operation and repair activities, to alleviate the problems of shortage of trained technicians and uneven technical standards and to address the question of poor coordination mechanism between the various stakeholders. In rural water supply, rural communities assisted by potential private operators could also assist in effective and timely maintenance and sustainability.

#### 5.4 Pricing

5.4.1 Experience of many developing countries in Africa and elsewhere suggests that the *price* does not seem to be perceived as a limiting factor by the population of urban or peri-urban poor neighbourhoods. Nevertheless, in the light of the high water bill of the urban poor householder, there is a case to bring down the bill for lifeline consumption by cross-subsidization measures such as lower utility rates for supplies to independent providers and a regulation of their selling price to poor. The report notes that the Bank Group policy of recovering, from internally generated funds, the complete cost of operation, maintenance, and asset replacement as well as a portion of capital expansion is sound and should be fully implemented.

5.4.2 The Bank policy recognizes that full cost recovery is difficult to attain for rural water supply projects. The World Bank has also noted in one of its recent studies that while commitment to financially sustainable rural water supply would be the ultimate ideal, it will be essential that the goal be approached incrementally. The study found that even the minimal costs associated with current community based and demand responsive projects are too high for some subsets of the rural community. The Bank Group supports a policy that rural water supply projects should collect payments from beneficiaries at least equal to the cost of operation and maintenance. In addition, the Bank group

expects member countries to incorporate in their sectoral plan a provision for moving toward partial financing of capital costs from beneficiary contributions. Charging a realistic price has often proven difficult for political or moral reasons. In countries and areas where water has traditionally been supplied free, introduction of pricing will need to be treated with sensitivity.

5.4.3 Experiences with community level financing mechanisms involving social capital, access to credit, and cost sharing have also provided effective alternatives to assisting the poor gain access to potable water and adequate sanitation facilities in peri-urban and rural areas.

## 5.5 Appropriate Technology and Asset Maintenance

5.5.1 Selection of *appropriate technology* and standardization of equipment are important considerations in the particular setting of the existing levels of limited technical sophistication in Africa. There was no evidence that technology selected for projects was critically evaluated or its suitability assessed on the basis of long-term least-cost solutions. Any existing technologies and indigenous practices that are successful should be evaluated at the earliest stage. Preserving and building upon those technologies may provide effective alternatives or supplements to imported technologies. As O&M implications of the technology choice have substantial implications for the operational phase and sustainability of the project, the selection of appropriate technology should be an important criterion in the appraisal of each Bank-project.

5.5.2 In rural projects, VLOM seeks to avoid high cost, long response time, unreliable service and operational difficulties in the repair of hand-pumps generally encountered in a central maintenance system. VLOM was also a key conceptual leap in user participation in decisions concerning services in their management. Selection of pumps is done in such a way that the village caretaker can carry out replacement of wearing parts, with only a minimum of training and with only a few basic tools. Non-wearing parts should be able to resist abuse, vandalism, climatic conditions and the attention of animals. Because of the narrow market, uneconomic lot sizes and high cost, local manufacture of pumps has not proven cost-effective. Until large volume manufacture by consolidation of regional demand is feasible, dependence on imported pumps and other equipment cannot be avoided but, in its turn, it creates the problems of lack of timely availability of spare parts.

5.5.3 Poor and indifferent *operation and maintenance (O&M)* has been a major and common cause of premature deterioration of assets and erosion of project benefits and sustainability. Experience of completed projects suggests that reduction of UfW is unlikely to be achieved through passive approaches or routine maintenance and repair work. Specific identification of sources of adequate financial and human resources for O&M should form essential integral and priority components of future Bank-financed projects.

## 5.6 Community Partnership and Participation

5.6.1 The top-down hierarchical structure usually encountered in many countries and a lack of *community partnership and participation* in activities intended for their benefit has seriously compromised the project performance and sustainability. A new balance needs to be struck between the responsibility of the public authorities and those of the households and communities. It is also recognized that communities are likely to take responsibility of service maintenance, including the collection of levies for this purpose, only if they feel a strong sense of need for the service. Modern civil society organizations such as consumer groups, cooperatives, professional associations and other

similar institutions, should be empowered and supported to play important roles in terms of setting development goals, objectives and standards, participation in programme and project implementation, undertaking technology adaptation and research etc. and in overall water resources management.

5.6.2 Centralized top-down approaches followed in the past were not successful in development of water resources in the poor peri-urban and rural areas. In contrast, a demand responsive approach, which has increasingly been tried in recent years for the poor peri-urban and rural areas, attempts effective participation of the beneficiaries throughout the project cycle. It focuses on what users want, what they are willing to pay, and what they are able to sustain. Community members are expected to participate in the design process, in particular, to choose collectively the type and the level of service they are willing to pay. In addition, communities are required to contribute cash or labor to construction (linking their contribution to the level of service selected) and to take care of service O&M.

5.6.3 It is, however, important to appreciate that no two project settings- whether urban or rural- are similar. It also needs to be recognized that communities are almost always heterogeneous groups and capacity building within them is difficult to define and implement. There is also only a limited understanding and predictability of dynamics of community behaviour in the context of managing all aspects of water supply and sanitation systems on their own. Therefore, the design of the participatory model for the community and development of appropriate institutions has to be tailor designed for each project and sub-project environment. Community participation models consequently need to be flexible and innovative, have to address the social processes and need to be refined continuously during project implementation and supported until institutionalized. The programmes have also to be developed keeping in view the community aspirations of levels and standards of service. The whole exercise needs sensitivity and skills.

5.6.4 Today, notwithstanding the complexities and concerns, community participation and demand responsive approach is becoming a part of the new strategy introduced in various African countries. It is now being taken up, particularly for peri-urban and rural water supply and sanitation projects. The Bank needs to promote its large-scale adoption, in the projects assisted by it.

## 5.7 Private Sector Participation

5.7.1 *Private sector participation* in the water supply and sanitation sector can facilitate tapping of new sources of funding for investments in the **urban** projects of the sector to expand the services and to improve the sector's financial, administrative and operating efficiency to best practice standards. It also generally helps to end or reduce subsidies and prevent further drain on government treasuries. The Bank and the RMCs have to accelerate and deepen the process of PSP. The mode best suited for each country and each utility has to be identified based on the circumstances of each case. In addition, activities in the sub-sector first need to be unbundled to enable phased entry of private sector in the sector. Donors including the Bank need to operate more effectively as a catalyst by promoting public/public and public/private partnerships that mobilise greater resources and improve service delivery.

5.7.2 The report also notes that induction of PSP needs to be accompanied by establishment of effective and strong regulatory framework for the healthy development and operation of privately owned utilities and to prevent excessive prices and poor service, because utilities in water supply and sanitation sub-sector tend to be natural monopolies.

5.7.3 In the **rural and peri-urban** projects, there are no viable operating indicators, as a result of which large-scale private operators have not shown much inclination in the sub-sector and only small-scale PSP like the kiosk operators have shown interest. The main responsibility has to be shouldered by the community and NGOs but services of small private operators and vendors can and should be harnessed for sale of water and maintenance of boreholes and other water points.

## **6. CONCLUSION, LESSONS AND RECOMMENDATIONS**

### **6.1 Conclusion**

6.1.1 Since its inception, the Bank Group has provided assistance exceeding UA 2 billion to the water supply and sanitation sub-sector in its regional member countries. It has had its impact, but only in patches. A majority of the population in Africa still does not have access to safe water or sanitation. The problem of providing full access within a reasonable time is daunting and yet cannot be ignored. Deprivation of these basic needs is the worst form of human poverty.

6.1.2 A few *key issues for enhancement of development effectiveness and impact* of Bank investments in the water supply and sanitation sub-sector have been examined in greater detail. These include the need for a clear cut Bank and RMC vision for water supply and sanitation sub-sector; greater attention to sanitation components; provision of water supply and sanitation for urban and rural poor; inclusion of health and hygiene components in the design of projects; economic as well as lifeline pricing for water; selection of appropriate technology; improvement in O&M and control of UfW; community participation and a cautious demand responsive approach; and greater private sector participation are some of the important issues that have received more focused attention.

### **6.2 Lessons and Recommendations**

6.2.1 A number of lessons and recommendations have been noted in the urban and rural water supply and sanitation studies and the capacity building case studies. The Bank needs to make a determined effort by addressing the various issues on a priority basis to enable time-bound provision of safe water and sanitation to all and particularly the poor in Africa. Informal settlements, rural areas and the urban poor have the most urgent needs for potable water supply and proper sanitation facilities. Donor funding priorities and product lines must be reviewed. RMCs must be assisted in their efforts to decentralise service provision and switch from a supply driven to a demand responsive approach. More financial and human resources should be made available to support operation and maintenance, including rural village level programmes and community provision of low-end sanitation services. Efforts must be made to ensure that technology is appropriate, standardised and that there are effective public/private mechanisms to ensure the timely availability of spare parts and maintenance services.

6.2.2 The Bank needs to operate more effectively as a catalyst by promoting public/public and public/private partnerships that mobilise greater resources and improve service delivery. Private sector participation needs to be enhanced by the Bank and RMCs, a process that can be assisted by 'unbundling' WSS services so as to enable phased entry of the private sector. WSS services tend to be monopolistic, hence, a strong and healthy regulatory framework will be required to prevent excessive prices and poor service delivery from the private sector. Community and civil groups must be empowered to participate in the full range of water management services, and the widespread adoption of community participation/demand responsive approaches promoted. However, the heterogeneous

nature and capacity of communities must be recognised until participatory planning is institutionalised. Finally, cost recovery, with prices sensitive to low income users, must be achieved so as to guarantee continued service delivery. Lifeline tariffs, regulation of small private vendor resale prices, and an incremental introduction of full cost pricing to sensitive communities are required. Integrated approach to enhance economic activities in rural areas, need to be encouraged to make water supply and sanitation schemes more viable and sustainable.

6.2.3 The Bank's recent initiatives do address most of the key issues and, hence their effective implementation is paramount. Summary of the important lessons and recommendations contained therein are presented in the Matrix shown in Annex 1.



Lessons and Recommendations

S.No.	Findings/ Lessons	Recommendations	Responsibility
1	Weakness in project quality at entry was caused by a lack of quality and relevance of logical frameworks, weaknesses in quality of feasibility studies and detailed designs and a lack of IWRM policies and institutions.	<p>Efforts made by the Bank to enforce quality and relevance of logical frameworks have to be intensified</p> <p>The new process for a systematic review of project preparation and appraisals to enhance quality feasibility studies and project designs have to be applied with value added objectivity.</p> <p>It is important that the Bank considers future financing of water supply and sanitation sub-sector projects within the framework of the RMCs' IWRM policies while at the same time permitting flexibility for projects addressing to the urban poor and rural communities. A twin-track approach need to be followed in this respect</p>	Bank-OCOD(Central Projects Department and OCDs (Operations Departments))
2	Efficiency of implementation was seriously compromised by delays in implementation period and variation in project costs, inadequacies of Bank's desk and field supervision, delays in provision of counterpart funds and ineffective donor coordination.	<p>It is important that at project preparation and appraisal, the design and definition of the project as well as cost estimation and provision for price and physical contingencies, is critically examined.</p> <p>There is continuing need for more frequent, closer and effective supervision with an even greater emphasis in the smaller and weaker economies and in countries with unsettled political and economic conditions</p> <p>There is need for a reassessment during supervision of the risks confronting the project and the determination of the likelihood of the projects meeting their development objectives should take into account the likely impact of such revised assessments.</p> <p>Effective desk reviews should be implemented regularly.</p> <p>Adoption of taking out counterpart funds for the year from central government allocation to states/regions and putting in a separate fund exclusively for the project could be systematically considered for ensuring adequate allocation of counterpart funds for projects.</p>	Borrower/Bank (OCDs)
3	Reduced estimates of ex-post rates of return and a decline when compared with appraisal estimates were noted in a large number of completed projects.	<p>Estimation of internal rates of return has to be carried out with great care and rigour.</p> <p>All risk factors need to be carefully identified and analyzed at appraisal. Similarly, sensitivity and risk analyses for the likely range of variations in critical factors are also important.</p>	Borrower/Bank (OCDs)  -DO-

	Quantitative evaluation of rural projects on the basis of the same criteria as urban projects is not meaningful since a larger proportion of benefits is qualitative.	Appropriate methodologies need to be applied in capturing the qualitative evaluation of rural projects, maximization of economic and financial benefits is dependent upon the choice of appropriate technology, meeting of highest demand level, participation of beneficiaries in project management, training and extension.	-DO-
4	Weak O&M directly contributed to high levels of intermittent operation, erratic or declining levels of production, high levels of UfW, and poor customer service.  Poor and indifferent O&M, leading to high level of UfW has been a common cause of premature deterioration of assets and erosion of project benefits and sustainability	Analysis and identification of sources of adequate financial and human resources for O&M should form an integral part and an essential component of any new project.  Specific UfW programs and active long-term leakage monitoring and control as well as political will to get rid of illegal connections and corruption are required if significant reductions in UfW are to be achieved.	Borrower/Bank (OCDs)  - DO-
5	Improvements in water supply alone are not sufficient to achieve the full health gains and complementary improvements in other areas are equally important.  Health benefits of water supply and sanitation projects could be maximized through improved personal and community sanitary behavior.	It is important that projects for urban low income and rural communities have components of hygiene education programmes for improved personal and community sanitary behavior (by active participation of project beneficiaries, especially women) well integrated in their scope to maximize their health benefits.	Borrower/Bank (OCDs)
6	Environmental assessments were mostly subjective as many of the social benefits of water supply and sanitation projects are difficult to quantify in the absence of adequate performance measurement criteria.	Identification and development of environmental criteria is essential to make judgments in future more objective.  The establishment of independent environmental regulatory agencies in RMCs is essential to make performance results more credible.  Uniform and rigorous application of Bank's environmental guidelines is essential.	Borrower/Bank (OESU, OCDs)
7	The institutional development components had immediate relevance for the particular needs of the utility but a general lack of overall manpower development or staff training policies limited the long-term relevance or sustainability of such efforts.  Institutional weakness in the overall impact of the Bank's water supply and sewerage projects and studies on institutional development in the sub-sector, in spite of some few positive examples, was considered minimal and unsustainable.	Piecemeal interventions do not have any lasting impact and for lasting improvement, comprehensive institutional analysis and the institutional developmental efforts should be taken up within a framework of long-term institutional master plan, for the sector as well as the utilities.  The dynamics of the institutional processes and change have to be studied and the management of change has to be strategized.	Borrower/Bank (OCDs)

	<p>Reforms for achieving institutional autonomy in some projects failed to achieve the desired results and impact, in the absence of political commitment, a practical road map, adequate financial and staff resources and an inadequate Bank follow up.</p> <p>Capacity building will be a primary concern of the sector in the foreseeable future but institutional change is a slow process and lasting institutional reforms require a much longer time frame than the implementation cycle of a single project.</p> <p>In the past in the absence of institutional experts hindered comprehensive institutional analysis or long term strengthening of the sector and utility institutions.</p>	<p>Concerted and innovative efforts are required to obtain RMC's long-term political commitment and mobilize requisite resources for institutional development and capacity building.</p> <p>Technical assistance programmes of capacity building and strengthening for the water supply and sanitation entities should also draw on the experiences of the civil societies such as NGOs, local professionals, community organizations etc.</p> <p>There is need for enhancing Bank's own capability for comprehensive institutional analysis.</p>	
8	An important area that was largely neglected in the Bank's water supply and sanitation projects was the development of institutions and management models for supply of water and sanitation to rural communities and poor urban neighbourhoods.	Private sector participation and partnership, which are emerging as the most appropriate solutions for the poor urban and rural communities, need to be supported by the Bank.	Bank (OCDs, OPSD)
9	The sustainability of rural water supply projects correlates strongly with substantial institutional development, particularly the development of local institutions and tends to be difficult. Implementers usually come up against excessive complexity of the institutional framework, low organizational capacity at the village level, and weaknesses in the NGO sector.	Given these challenges, careful preparation is needed. Involving the support organization in the earliest planning efforts, and conducting pilot activities on a small scale prior to a large-scale investment, can allow NGOs to grow enough in staff and experience to be successful.	Borrower/Bank (OCDs)
10	The Bank's focus on water supply and sanitation sub-sector in its Vision statement is not explicit or clear.	To avoid doubts in the minds of operational departments of the Bank, a clear statement of Bank policy outlining the place and importance of water supply and sanitation within the Vision framework is important for priority channeling of assistance in this sector.	Bank(OCOD)
11	In the past, Bank's sporadic and long-spaced presence in individual RMCs in the water supply and sanitation sector hampered its ability to make any impact in promoting any significant long-term reforms and improvements.	The Bank's country strategies have to factor in longer-term partnership with some selected utilities to achieve significant improvement in the quality and scale of operations and their sustainability.	Bank(OCOD,OCDs)

12	The projects rarely included a sanitation component to address the problem of degradation of the urban environment caused by additional wastewater from households generated by the Bank's water supply projects.	The Bank's guidelines for preparation and appraisal of water supply and sanitation projects require that benefits of developing low-cost methods of wastewater disposal as well as rehabilitating and/or extending existing facilities should be estimated. This requirement needs to be restated and stressed.	- DO-
13	Old supply-driven agenda followed by governments and donors for provision of sanitation services cannot meet the challenges created by rapid urbanization, population growth, industrial development and environmental degradation.	Adoption of demand-based approach is now called for Urban sanitation.  Programmes need to be unbundled into more manageable components within a strategic macro framework.	Borrower/ Bank (OCDs)
14	In developing countries community based institutions or NGOs or private service providers are best suited to provide the low-end sanitation services such as community public toilets and baths.	The Bank should promote such small-scale providers in order to accelerate the provision of the low-end sanitation services.	Bank (OCDs)
15	Partnerships between utilities and independent private sector providers working on a small and micro scale seem to be emerging as the most viable and sustainable options for water supply to urban poor.  Low-cost approach to water supplies for poor rural communities by provision of individual pumps for small clusters of village communities is essential.	It is important that the institutional arrangement for water supply at public standpipes, boreholes and water points is studied in its totality at the stage of preparation of the feasibility study and preparation of the project.  The institutional arrangement must address the need to evolve a mechanism for regulation of resale price by independent providers and control on quality of water.  Design of rural projects has to be based on beneficiary ownership, partnership and participation. Inclusion of health and hygiene components is also very essential.  Village Level Operation and Maintenance (VLOM) concept needs to be encouraged and supported.  In rural water supply, rural communities assisted by potential private operators could also assist in effective and timely maintenance and sustainability.	Borrower/Bank (OCDs)

16	Experience of many developing countries in Africa and elsewhere suggests that the price does not seem to be perceived as a limiting factor by the population of urban or peri-urban poor neighbourhoods.	The Bank Group policy of recovering, from internally generated funds, the complete cost of operation, maintenance, and asset replacement as well as a portion of capital expansion for urban areas is sound and should be fully implemented. Nevertheless, in the light of the high water bill of the urban poor householder, there is a case to bring down the bill for lifeline consumption by cross-subsidization measures such as lower utility rates for supplies to independent providers and a regulation of their selling price to poor.	Borrower/Bank (OCDs)
17	According to a World Bank study, even though rural water projects have made great strides in getting rural villagers to cover more of their systems' operating costs, nowhere in the world did the study find a majority of beneficiary communities ready to cover the costs of a major overhaul or the complete replacement of their systems' most expensive components.	While commitment to financially sustainable rural water supply would be the ultimate ideal, it will be essential that the goal be approached incrementally.  Experiences with community level financing mechanisms involving social capital, access to credit, and cost sharing have provided effective alternative strategies to assist the poor gain access to potable water and adequate sanitation facilities.	Borrower/Bank (OCDs)
18	Inappropriate technology was selected in a number of water supply and sanitation projects leading to premature deterioration, or difficult and expensive maintenance of assets.	Preserving and building upon existing technologies and indigenous practices that are successful may provide effective alternatives or supplements to imported technologies.	Borrower/Bank (OCDs)
19	Selection of appropriate technology and standardization of equipment are important considerations in the particular setting of the existing levels of limited technical sophistication in Africa.	Selection of appropriate technology should be an important criterion in the appraisal of each Bank-project. In rural projects, suitability for VLOM should be the criterion for selection of pumps.	Borrower/Bank (OCDs)
20	The top-down hierarchical structure usually encountered in many countries and a lack of engagement of communities in activities intended for their benefit was seriously compromising the project results  It is also recognized that communities are likely to take responsibility of service maintenance, including the collection of levies for this purpose, only if they feel a strong sense of need for the service.	Modern civil society organizations such as consumer groups, cooperatives, professional associations and other similar institutions should be empowered and supported to play important roles in terms of setting development goals, objectives and standards, participation in programme and project implementation, undertaking technology adaptation and research etc. and in overall water resources management.	Borrower/Bank (OCDs)

21	Notwithstanding the complexities and concerns, community participation and demand responsive approach is becoming a part of the new strategy introduced in various African countries. It is now being taken up, particularly for peri-urban and rural water supply and sanitation projects.	<p>The design of the participatory model for the community and development of appropriate institutions should be tailor designed for each project and sub-project environment, further refined during implementation and supported until it is institutionalized.</p> <p>The programmes have to be developed keeping in view the community aspirations of levels and standards of service.</p> <p>The Bank needs to promote large-scale adoption of demand responsive approach in the projects assisted by it.</p>	Borrower/Bank (OCDs)
22	Private sector participation in the water supply and sanitation sector can provide substantial supplementary financing to expand the services and to improve the sector's financial, administrative and operating efficiency to best practice standards. However, WSS services tend to be monopolistic calling for strong and healthy regulatory framework to prevent excessive prices and poor service delivery from the private sector	<p>The Bank and the RMCs have to accelerate, broaden and deepen the process of PSP.</p> <p>The mode best suited for each country and each utility has to be identified based on the circumstances of each case.</p> <p>In the urban projects, activities in the sub-sector first need to be unbundled to enable phased entry of private sector in the sector.</p> <p>There is need to support governments to create a strong and healthy regulatory framework</p>	Borrower/Bank (OCDs, OPSD)
23	<p>In rural projects, it is difficult to relate pricing of services to cost and private investors find it uneconomical to set up small and scattered systems.</p> <p>Only small-scale PSP like the kiosk operators have shown interest.</p>	The main responsibility has to be shouldered by the community and NGOs but services of small private operators and vendors should be harnessed for sale of water and maintenance of boreholes and other water points.	Borrower/Bank (OCDs, OPSD)
24	Investment requirement of the sector is substantial and could not be adequately met through the traditional sources only	The Bank must operate more effectively as a catalyst by promoting public/public and public/private partnerships that mobilize greater resources and improve service delivery	Bank (OCDs, OPSD)
25	Water supply and sanitation projects could not be sustainable particularly in rural areas if an integrated approach is not pursued to enable the communities to generate economic activities that could contribute to increased local wealth	It is necessary to foster holistic development. The improvement of water supply and sanitation should be seen within broader context of poverty reduction. Projects should not be implemented in isolation of other development possibilities and constraints	Borrower/Bank (OCDs, OPSD)
26	Clear statement for the sector outlining the place and importance of water supply and sanitation within the Bank's Vision framework is important to guide future interventions	The Bank's vision statement need to adequately respond to the sector's importance for poverty reduction and the requirements of the African Water Vision 2025	Bank (OCOD)