

**FEDERAL REPUBLIC OF NIGERIA**

**Water Supply & Sanitation Interim Strategy Note  
November 2000**

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### **Executive Summary**

- (i) The Nigerian Government has long considered the provision of water supply and sanitation services to be the domain of the federal, state and local governments. However, the public sector has not been successful in meeting more than a small portion of the demand for water and sanitation of residential and commercial users. Services are in critically short supply. For example, out of the 85 million people living in urban and semi-urban areas, less than half have reasonable access to reliable water supply. Many households, often the poorest, end up purchasing water from private vendors much more expensively than from the public supply. Water supply services, where they exist, are unreliable and of low quality and are not sustainable because of difficulties in management, operation and pricing and failure to recover costs. Many water supply systems show extensive deterioration and poor utilization of existing capacities, due to under-maintenance and lack of funds for operation.
- (ii) Additionally, the high cost of imported equipment especially in terms of a depreciating currency, and inadequate cost recovery policies have contributed to large financial deficits in many State Water Authorities (SWAs). This has left most SWAs dependent upon state subventions to finance operations and maintenance of their water systems, to service debt and to finance new investments. The states' own financial constraints have often limited the amount and dependability of recurrent and capital subventions requiring the SWAs to defer maintenance and limit new investment.
- (iii) This Strategy Note, prepared in conjunction with the Federal Ministry of Water Resources (FMWR), presents a joint vision for sector development, and provides a proposed lending strategy for the Bank in the water supply and sanitation sector in four segments, namely, urban, small towns, rural, and water resources management. Because water supply and sanitation are central to improvements in so many aspects of human development, health, education, urban and rural development, development of industry and general economic development, and so central to the Bank's primary mission of poverty reduction, it is proposed that water supply and sanitation should become a primary focus in the Bank's program of assistance to Nigeria.
- (iv) In the urban water and sanitation sub-sector, a fundamental re-orientation is needed in the concept of provision of services. Reforms require a profound change in institutional and regulatory framework based on the concept of water supply as a service industry. In spite of the public monopoly characteristics of water supply, by separating infrastructure investment and ownership from service operation, it is possible to introduce competition with significant efficiency gains. Enabling SWAs to gain more autonomy, followed and/or accompanied by greater commercialization of specific aspects via service, management and/or lease contracts with private firms could increase efficiency as has been demonstrated in neighboring countries of Cote d'Ivoire, Senegal and Guinea. Detailed legal, institutional and financial preparations are necessary for the transition from the current status of Nigeria's water utilities to efficiently managed, adequately regulated systems, and for conversion of existing SWAs to different roles as asset owners or regulators.
- (v) In the small towns water and sanitation sub-sectors, the Bank will support and strengthen the government's policy of decentralizing ownership and management of water supply systems to attract and involve optimal community involvement and support by the private sector, including operation under contract, and regularizing the services of independent providers or franchisers. In small towns, the focus is on community ownership coupled with local private sector contracting for operations. In rural areas, the focus is on increasing the sharing of ownership and management by communities and local governments, with communities taking charge of operations and maintenance as well. Fiscally, both in small towns and rural areas, the focus must be on phasing out of subsidies for maintenance altogether, and restricting such subsidies to partial capital costs to engender greater community ownership.

(vi) With respect to water resources management, because of the increasing problems of water shortage in the north, major pollution problems such as in the Delta area, difficulties due to uneven distribution in the south, and potential issues with international waters, the Government now recognizes the need to manage water resources in an integrated and sustainable manner, and, supported by donors and the Bank, has embarked on the preparation of a National Water Resources Management Strategy (WRMS) involving all stakeholders in order to ensure integrated management and development of its water resources.

(vii) In regard to sanitation, the task is stupendous in scope as the extent of the existing drainage and sewerage network is miniscule in view of overall need. More work is needed to develop sanitation policies and strategies, particularly for urban areas, however a two pronged sanitation strategy should have an immediate priority of on-site sanitation, and community owned and operated public toilets, and focus in the longer term on incrementally developing drainage, sewerage networks and wastewater treatment and disposal facilities.

(viii) Total investment needs depend on coverage and level of service that is sought. For 80% coverage within 20 years, with about 50% of those served in urban areas having household water connections, about \$10 billion each are needed for investment in water and sanitation. This represents \$1 billion per year or 3% to 4% of Nigeria's current GDP. Regardless of the coverage and service level that is sought, clearly huge resources from many sources are required to have a significant impact.

(ix) A suggested Bank program for future support to the sector is provided. It includes:

- An immediate project to support the reform of the urban water sector in moves towards privatization. It is emphasized that reform is a complex process requiring a well defined series of activities, and high transparency. This initial project would also provide for urgent rehabilitation needs and wide sectoral support through the Federal Ministry of Water Resources.
- After individual states have progressed sufficiently and irreversibly with reform, additional Bank lending would provide investment funds for the reformed states.
- Improvements to urban sanitation would be provided initially through urban upgrading projects, of which the first would be approved during FY 2001. These projects would support selected states. In addition, support to develop urban sanitation policies would be provided.
- Separate projects would support water and sanitation developments in Lagos because of the magnitude and complexity of its problems, assuming reforms being supported by IFC are successful.
- Following the recently approved learning and innovation loan for small towns water supply and sanitation, and depending on its outcome, support would also be provided to expand that program.
- Rural water and sanitation would remain with the current FGN/UNICEF program, or be dealt with through integrated rural development projects.

A total new World Bank lending program in the sector of about \$1.2 billion over three years is appropriate, similar to what has existed in the past.

(x) The Bank has had continued and extensive contact with the sector during the recent quiet period in relations between Nigeria and the Bank, including numerous promotional workshops since 1996. A major workshop in February 2000, supported by the Bank and several partners, and attended by the Governors or their representatives from most states, provided a high degree of confidence that the approach proposed in the note will be successful. This gives confidence in the Bank's knowledge of the sector and its relationships with key stakeholders. As a result, there is readiness in the sector to go ahead quickly. There is also good implementation capacity in the sector as a result of state and national projects that have recently reached, or are approaching, completion. For these reasons, establishment of IDA Credits of up to \$1.2 billion over the next three years is quite feasible.

(xi) The Note attempts to provide a program that all donors can buy in to. There is great scope for donors to participate at various levels in the project proposed for Bank support, or to adopt additional states in parallel developments. The FMWR would help to coordinate activities and ensure that policies are consistent.

## I. Introduction

1. The purpose of this Strategy Note is to: (i) respond to the Government's recently adopted national Water Supply and Sanitation Policy (Federal Ministry of Water Resources (FMWR) – January 2000); (ii) identify the most important sector issues and constraints and provide recommendation on how sector performance could be improved; (iii) provide a strategic platform for participation by external support agencies; (iv) provide an input into the Country Assistance Strategy<sup>1</sup>; and (v) define an investment strategy for providing sustainable and efficient water supply and sanitation in Nigeria. The findings of this Strategy Note are based on recent studies on urban and small towns water supply done under ongoing and recently completed projects supported by the World Bank as well as an on-going dialog with the Government. The rural discussion reflects the strategy adopted by the Government in 1992 which remains the basis for investments in the rural water supply and sanitation sub-sector. Preparation of this Note has been the result of a lengthy and productive dialogue between the Bank and Government during the 1990s and numerous workshops of high visibility involving representatives of a broad spectrum of stakeholders from water carriers to ministers and state governors. The spirit of cooperation that reigned in the water supply and sanitation sector during the period was enabled by stability and vision in key positions within the FMWR. This interaction has enabled the Bank to gain a clear picture of the constraints and opportunities in the sector and to work on developing a strategy to begin to address them as discussed in this Note.

### Historical Perspective

Public water supply started in Nigeria early in the twentieth century in a few towns managed at the lowest administrative level. Amongst the early beneficiaries were Lagos, Calabar, Kano, Ibadan, Abeokuta, Ijebu Ode (Ogun State) and Enugu. The schemes were maintained with revenue from water sales with virtually no operational subvention from government. With the creation of regional governments in the early 1950s the financial and technical responsibilities for developing new water schemes were taken over by the regional governments who also assigned supervisory high level manpower to oversee operations and maintenance. The regions were slow to set up independent bodies to develop, operate and manage the water supply. The first water corporation was formed in the western region in 1966 which took over all the assets and liabilities, including the existing staff. The staff of the Water Division of the Ministry of Works were also transferred to the new corporation. The next corporations were formed in the 1970s. Today, all 36 states and the Federal Capital Territory have water boards/corporations or public utilities boards managing their public water supply. Their efforts are supplemented, in many cases, by local governments who supply water to small villages in their areas of jurisdiction. The Federal Government got involved in the management of water resources in 1976 when the Federal Ministry of Water Resources and the 11 River Basin Development Authorities (RBDAs) were created. The purpose of the RBDAs was to provide bulk water, primarily for irrigation.

## II. Country and Sector Background

### *A. Political and Economic Context*

#### Geography and Climate

2. Nigeria has a land area of 924,000 sq. km. Its climate varies between semi-arid in the north to tropical and humid in the south. The average rainfall ranges from about 500 mm/year in the north to over 2,000 mm/year in the south. Most rainfall occurs in well-defined rainy seasons of four to five months (May to September) in the north and six to seven months (April to October) in the south and is typically concentrated in high intensity storms with high rates of runoff. The northern terrain is flat and

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<sup>1</sup> CAS discussions are currently underway and are designed to be highly participatory, with approximately 25 consultations in country already completed. Water issues are included in all such consultations. The Nigeria CAS is expected to be completed and presented to the Board early next fiscal year.

sparsely vegetated with river flows that are generally seasonal. A hilly area crosses the center of the country and the south is flat with tropical forest cover. The main rivers, Niger and Benue, converge in the central region thereafter flowing south as the Niger to discharge into the Atlantic Ocean through an extensive delta area. Their major tributaries are perennial as are other rivers in the south and are frequently exploited for water supply.

### **Population**

3. Nigeria is the most populous country in Africa with an estimated population of 120 million<sup>2</sup> and average density of about 130 persons per sq. km. Population has been growing at an estimated average of 2.9% per annum. The best estimate of the population's distribution is:

**Table 1: Population Distribution**

Type	Community Size	Population (million)	% of Total
Urban	>20,000	45.0	38
Small Towns	5,000 to 20,000	40.0	33
Rural	<5,000	35.0	29

### **Economic Conditions**

4. Nigeria is the largest country in West Africa with a GDP of US\$36 billion. Per capita income is about US\$300, below the level at the time of independence 39 years ago. Nigeria's total debt was estimated at US\$28.8 billion at the end of 1998. This represents a debt/GDP ratio of about 70%. Poverty in Nigeria is more widespread in the northern parts of the country, but more intense and severe in the riverine and remote southern areas. Urban poverty is on the rise and often severe. It is estimated that about 48% of urban dwellers are living in poverty. About 30 million people were defined as extremely poor in 1996 compared to 4 million in 1980. In July 1999 the Government set up a poverty committee to review the existing poverty programs and make recommendations for their restructuring, and the Bank has been formally invited to make submissions to the committee.

5. The peaceful transition of power to the recently elected (May 1999) democratic civilian government has awakened the interest of the international community in Nigeria and re-kindled hope among Nigerians. The recent changes raised hope that the new government will be able to address major issues which have paralyzed the country's growth, such as the lack of transparency in public expenditures, a large inefficient parastatal sector, and inefficient infrastructure investments. In the financial sector, the Central Bank has been granted independence to pursue monetary policy. The 2000 budget has increased allocations to state and local governments to enable them to better fund infrastructure services.

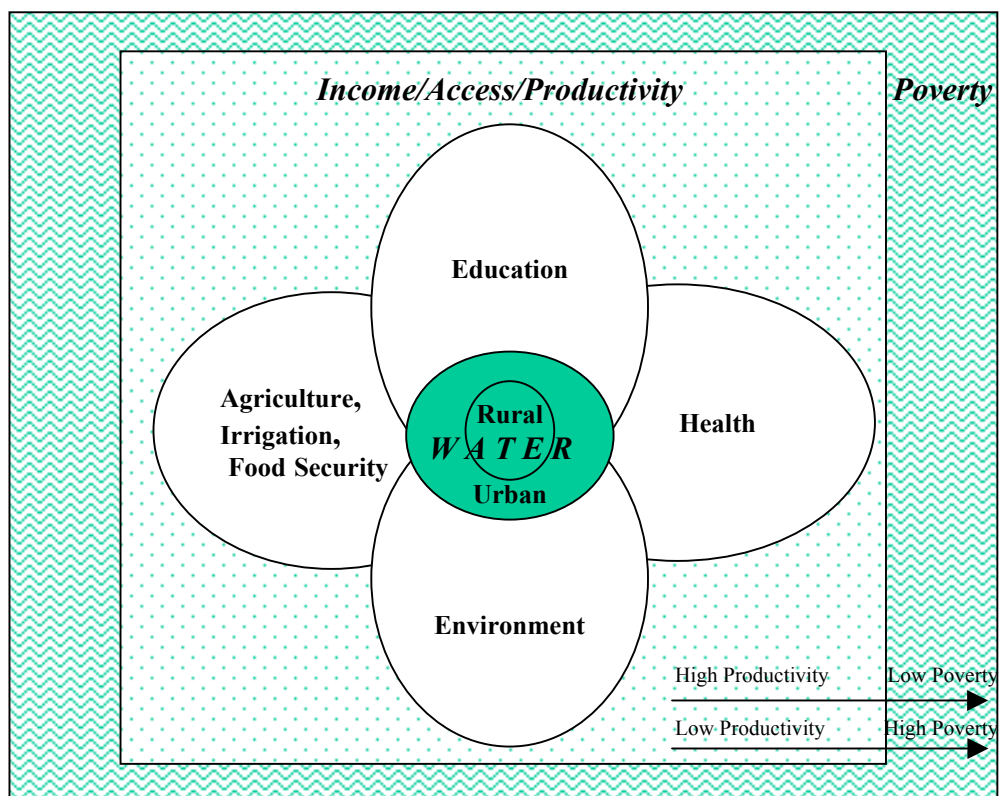
### **The Centrality of Water Supply and Sanitation to Economic Development**

6. Linkages between water supply and sanitation (WSS) and a cluster of key sectors, including health, education, agriculture, environment are intuitively obvious, and documented with varying precision in different developing countries. Some of the data and project experience in Nigeria in these sectors suggest clear linkages between poor WSS standards and decline in indicators in health, education and productivity. Specifically, these include low enrollment in schools, particularly of girls who must spend time collecting water, higher crime against women due to lack of toilet privacy, as well

<sup>2</sup> A census is planned for the year 2001.

as the more obvious impacts of disease, higher infant mortality, high absenteeism in schools and at work, and lower productivity.

7. The diagram below depicts the multi-level impact of WSS on other sectors and finally on the larger paradigm of poverty and productivity. Thus by directly impacting key indicators in the health, education, agriculture/food security, and environment sectors, water supply has a profound impact on quality of life indicators and is a major determinant of productivity and poverty levels. In this sense, WSS is the single sector investment with high (and most diverse) multi-sector returns. This hypothesis is increasingly relevant and accurate in countries like Nigeria where sectors such as agriculture, health and education are vulnerable and thus the need for WSS to be the centerpiece of any lending portfolio is stronger.



8. Malaria is the predominant disease affecting the population of Nigeria. Many other diseases endemic throughout the country are generally associated with unsatisfactory drinking water supplies, poor sanitation conditions and inadequate health education programs. These include diarrhea, dysentery, gastro-enteritis, infectious hepatitis, hookworm, guinea worm, and other parasitic infections. The prevalence of HIV AIDS is currently about 5% and probably increasing. Health implications of water supply deficiencies in Nigeria are enormous. As the percent of people with access to safe water in the country is low and the country is relatively densely populated, the direct health repercussions the situation imposes, especially on children, is often underestimated. Improving water supply infrastructure will help improve the social well-being of the population directly. It has been shown, for example, that better access to potable water can relieve about the same total burden of disease (measured in daily-adjusted life years) as do improvements in public health care.

9. From an economic policy and strategic standpoint it is unlikely that any other sector could have a larger, more substantial, and immediate impact on poverty reduction in Nigeria. If the ultimate and final objective of poverty reduction is to be achieved, the water sector will need to be the driving force



of these changes. Not lessening the importance of any other sectoral investments, the consequences of a substantial increase in water supply investments on widespread water borne mortality and morbidity, is likely to be significant. Unlike literacy rates which usually take longer to become visible and materialize, increasing safe water provision, if done by using the right approach and taking into account affordability and sustainability matters, has proven to impact poverty rapidly and directly in many countries.

10. In addition, water supply is an input in many industries. Studies have proven that the costs of water supply deficiencies in manufacturing in Nigeria are large. As water is usually considered as an infrastructure service which is final consumption product/service targeted to meet the basic needs of households, the costs of water supply deficiencies in public policy is often overlooked, underestimated, or totally unaccounted for. The heavy incidence of water supply failures among small firms has an implication for the growth of firms, industries, and the generation of employment. Since small firms can often not afford their own boreholes and other facilities, the burden of inadequate public water supply affects their development more seriously than those of larger size firms. By providing their own water supply services, firms are substituting internal capital in the form of equipment, machinery, as well as labor in the form of maintenance personnel, for publicly provided infrastructure services which are not forthcoming. From an economic point of view these inefficiencies of water supply facilities affect the productivity of firms and increase their cost of production.

### ***B. Background of Water Sector***

#### **Water Resources**

11. Based on available data, Nigeria has adequate surface and ground water resources to meet current demands for potable water though the temporal and spatial distribution of water has led to scarcity in some locations especially in the north. This disparity has led to rapid depletion of groundwater, especially in the northern towns which have resorted to other sources. As state capitals and larger towns become more and more dependent on surface sources and experience the difficulties associated with treating such water, water shortages are developing in the far north and potential conflicts in the south west, where water transfer between states is necessary. In other locations, particularly in the Delta region and near major cities, conflicts arise due to insufficient control of water pollution, and serious erosion problems.

12. Past Government efforts have been fragmented focussing on water resources development on a sub-sectoral basis but neglecting to manage it strategically as a national resource. The Government recognizes the need to manage water supply in an integrated and sustainable manner, and has embarked on the preparation of a National Water Resources Management Strategy (WRMS) to ensure proper management and development of its water resources. A participatory approach has been adopted giving consideration to the needs of all stakeholders. The WRMS will include considerations of water supply development and rehabilitation, water-shed protection, basin management, water quality monitoring and pollution control, international waters, pricing and environmental protection.

#### **Water Supply and Sanitation Coverage**

13. Rapid population growth has not been accompanied by an increase in the delivery of essential urban services such as water supply, sewerage and sanitation, and collection and disposal of solid wastes. It is estimated that currently only about 50% of the urban and 20% of the semi-urban population have access to reliable water supply of acceptable quality (i.e. something better than a traditional source). Overall effective urban water supply coverage may be as low as 30% of the total population due to poor maintenance and unreliability of supplies. Rural coverage is estimated at 35%.

14. Except for Abuja and limited areas of Lagos, no urban community has a sewerage system, with the result that sewage and sullage either lie stagnant or are disposed through the storm water drainage

system. The proportion of the population with access to safe facilities for disposal of excreta and waste water is lower than for water supply.

### **Institutional Aspects**

15. The three levels of government in Nigeria share responsibility for the delivery of water supply and sanitation services.

16. ***Federal Government Level*** The Federal Ministry of Water Resources (FMWR), initially created in 1976, is responsible for formulating and coordinating national water policies, management of water resources including allocation between states, and approving development projects. The River Basin Development Authorities (RBDA), now 12 in total, were also created in 1976 for planning and developing water resources, irrigation work and the collection of hydrological, hydro-geological and meteorological data. Their main involvement in potable water supply has been the provision of multi-purpose dams and the supply of water in bulk, some to urban water systems. The National Water Resources Institute (NWRI) was legally established in 1985 and is responsible to the FMWR for engineering research functions related to major water resources projects and training sector professionals and technicians. A Utilities Charges Commission was established in 1992 to monitor and regulate utility tariffs, including those of State Water Agencies, however it appears in practice to have not been functional.

17. ***State Government Level*** Responsibility for potable water supply was traditionally entrusted to departments of the state governments (now 36 in number). As the importance of drinking water supply grew during the 1970s, most water departments were gradually transformed into State Water Agencies (SWA) to provide urban, semi-urban and, in some cases, rural water supply. Each SWA has, in general, been established under an edict to develop and manage water supply facilities within its respective state and to meet sound financial objectives. The SWAs are responsible to their state governments, generally through a State Ministry of Water Resources (SMWR) though in some cases under alternative arrangements. In some states, responsibilities for rural water supply remain with or have been transferred back to a state government department; additionally, in several states (22 currently), state rural water and sanitation agencies have been set up largely to implement the FGN/UNICEF RWSS program.

18. ***Local Government Level*** The Local Government Authorities (LGAs), of which there are 774, are responsible for the provision of rural water supplies and sanitation facilities in their areas although only a few have the resources and skills to address the problem. Only few LGAs have rural water supply divisions able to construct small water systems such as open wells and small impoundments of surface water. The Government of Nigeria has agreed to strengthen community participation in rural water developments, and the policy agreed in principle by the Government in 1993 reflects a priority on community ownership and management. The policy needs to be adopted, disseminated and implemented in all government or donor financed programs. Strengthening coordination between the three layers of government is also required.

### **National Water Supply and Sanitation Policy**

19. A National Water Supply and Sanitation Policy has recently been adopted (January 2000). This has many very positive points, but some weaknesses and inconsistencies. In particular, this policy makes the supply of adequate water supply and sanitation a right of all Nigerians, and gives responsibility to the three tiers of government, the private sector and the beneficiary. It recognizes water as an economic good and the need to run water supplies as businesses, identifies the need for reform and for private sector participation, recognizes the special needs of women and the poor, and the need to link improved sanitation with water supply. At the same time, it promotes unachievable targets for coverage, and recommends free water for the poor. There are inconsistencies in stated targets for

level of service, and sanitation policy is insufficiently developed; there are conflicts, for example, with other government actions regarding sanitation in other ministries. Some of these points are elaborated in Annex 1. The Government has requested that the Bank help resolve the issues and support implementation of the policy.

### **III. Current Status and Challenges**

20. This section provides an overview of the status of water supply and sanitation in the major subsectors of urban; small towns; and rural, as well as providing the current status of activities related to water resources management.

#### ***A. Urban Water Supply and Sanitation***

##### **The Large Urban Water Utility Problem**

21. The operational efficiency of the SWAs is unacceptably low as indicated by the monitoring indicators compiled under the National Water Rehabilitation Project (NWRP) which are attached as Annex 4. Many of the states have been unable to provide statistics because of lack of reliable management information systems, and for those responding, non-revenue or unaccounted for water (UfW) is very high, up to 63% reported for 1998. It is conceivable that UfW could be higher given the absence of metering of production and distribution. Additionally, the data reveal that insufficient financial resources, unmotivated staff, and a highly politicized tariff setting regime on the institutional side while, on the physical side, aging pipes, frequent breaks, unreliable and unstable supply of electrical energy or fuel, and treatment chemicals, and treatment works in poor condition, are common to most systems. Preventive maintenance is not a common practice and limited funds have led to under-investment in new and expanded capacity while preventing the periodic replacement of the aging components of existing facilities. Thus SWAs are currently unable to meet the existing demand for safe water within their respective cities and states. This puts increasing pressure on women's work, health and well being and children's education, given that the principal burden of fetching water continues to be borne by women and girls.

22. The problems of large utilities are compounded by the inclusion of peri-urban areas surrounding the cities which come under the jurisdiction of the main utility. The menu of service choices available to residents of such peri-urban areas is drastically reduced even compared to the sporadic services offered to main city residents. Often such peri-urban areas remain a low priority in terms of investments due to a relatively higher number of illegal and/or squatter settlements on public land. Most are served by public standpipes on the system of the main utility, or by wells or boreholes. Some utilities have established kiosks for sale of water to consumers or water carriers in these peri-urban areas. In many cases, water carriers deliver water to the consumers who pay much more than the utility charges for their water, since they must pay both the utility charge for the water and the cost of labor of the carrier.

23. The National Water Rehabilitation Project (NWRP) has attempted to address many of the difficulties of the urban water utilities. About \$300 million has been utilized in rehabilitation of physical assets (about a quarter of that estimated in 1988 to be necessary), and in institutional development of the SWAs. The project completed a manpower audit and established a national training program, developed standardized edicts for SWAs, developed manuals for many SWA functions, and provided technical assistance to many SWAs to improve their commercial, financial and technical operations. It was also instrumental in establishing a network and dialog amongst the personnel of the SWAs, integrating the support given at federal level, and promoting the ideas of reform needed in the sector. It has had a major impact in terms of capacity building, however many of the structural problems described in this Note, remain, leading inevitably to the clear conclusion that major structural

reform is needed in the way of doing business in the sector. More detailed assessment of the situation with urban water supplies in Nigeria is given in Annex 2.

### **Urban Sanitation**

24. Nigeria lacks a comprehensive strategy on sanitation as a whole, including excreta disposal, solid waste disposal, wastewater disposal, drainage and treatment of wastewater. The new Water Supply and Sanitation Strategy document links sanitation development to water supply under the Ministry of Water Resources, however sanitation units from the Ministries of Health and Works and Housing have recently been transferred to the Ministry of Environment. Currently, individual solutions are adopted at the household level e.g. pit latrines, septic tanks and storage. There is very little sewerage in urban Nigeria. Regarding solid waste, while there is some level of public and private solid waste collection, the frequency of collection is poor. The storm water drainage system is frequently a disposal point for solid waste. Moreover, disposal, when waste is collected, is by dumping rather than sanitary landfill and is a major cause of water pollution either through the stormwater drainage system or seepage into the groundwater. Wastewater disposal pollutes the surface water. Being in an embryonic stage, the sanitation sub-sector requires better-formulated policies and a massive injection of well-formulated investments, designed specifically for African conditions, combined with institutional reforms. The Bank has been the only donor in the sub-sector with three projects to address this situation, but these efforts need to be multiplied significantly.

### **Government's Response**

25. The Government's response to date to the urban water supply and sanitation problem has been through state water supply investment projects and the NWRP, with successful implementation of physical investments, but with mixed results in terms of institutional development. However, through the NWRP, the Government has more recently had a significant impact in terms of institution and capacity building as previously described. The Government has also developed its own sector policy paper and is taking a lead in promoting sector reform and private sector participation. Support has been provided by the Bank and African Development Bank (six projects each), and smaller amounts by a few bilateral donors. Estimated investment needs are indicated in section E.

26. Key issues in the urban water supply sector include the realism of the coverage targets indicated in the National Water Supply and Sanitation Policy, issues of payment, metering and levels of service compared to affordability, inadequacy of finance, service to peri-urban areas, legal considerations related to private sector operations, the capacity of the international operators to manage, and of local technicians to run systems, and capacity of external support agencies to support thirty seven different agencies through a reform process. In the sanitation sector, similar issues pertain; in addition, there are the questions of agency responsibility for sanitation, poorly developed sanitation policies, and the huge pollution problem caused by urban development and the disposal of human waste and waste water.

## ***B. Small Towns<sup>3</sup> Water Supply and Sanitation***

### **The Small Towns Water & Sanitation Problem**

27. A survey of access to water and sanitation in 37 small towns (one per state) done in 1997 by FMWR in preparation of their national Small Towns Water Supply and Sanitation Program (STWSSP), reveals that no more than 5% of the population had access to water from protected boreholes while 13% used water from communal wells. The small towns have been largely ignored by the SWAs, and the gap is filled by private, informal arrangements such as tankers, privately-owned wells, and hand-carried water containers where residents of these small towns end up paying unit rates for water which are 10 to 20 times higher than those with access to public sector services<sup>4</sup>.

#### **Sample of Water Use Patterns by Available Water Sources**

❖ Spring/stream.....	32%
❖ Hand dug well (w/apron).....	30%
❖ Hand dug well (w/out/apron).....	27%
❖ Rain.....	20%
❖ River.....	16%
❖ Pipe borne.....	14%
❖ Borehole.....	14%
❖ Vendors.....	6%

Source: Small Towns Water Supply and Sanitation Program development studies.

28. Responsibility for small water supply and sanitation is spread over all three tiers of government – federal, state, and local with overlapping and uncoordinated roles and functions. Each of these agencies employs its own implementation strategies and, in most cases, services have been introduced with little or no community participation. No single policy has been enforced to coordinate and lend focus to the various efforts and inputs, although the FMWR-STWSSP (Small Towns Water Supply and Sanitation Program) is now addressing this issue (refer under “Government’s Response”, below).

### **Management of Water Facilities**

29. Many of the issues discussed in relation to urban utilities also apply to small towns. Maintenance responsibilities for those facilities that have been provided by the government rest with inadequately trained or motivated crews employed by the SWAs and located in zonal or state headquarters. Their effectiveness is also constrained by the decline in the value of the Naira and high inflation, which have increased the cost of spare parts and vehicles necessary to transport maintenance teams. Further, the financing of operations and maintenance suffers from low water tariffs and collection rates. As a result, about 80% of all government owned water systems in small towns are non-operational. The private sector is not involved in maintenance of government provided systems either through private technicians or through supply of spare parts. However, some privately provided systems have been known to exist for many years. The FMWR-STWSSP attempts to transfer ownership and management of water supply and sanitation in small towns (potentially up to 100,000 people) to the communities as well as to encourage and support private ownership and management.

<sup>3</sup> Small towns are defined throughout this document as having a population of less than 20,000 inhabitants. For reference, approximate population distribution by type of area is provided in Table 1 above. The STWSSP uses a different definition of small towns based on the proposed management model to be utilized for their operation.

<sup>4</sup> For example, charges in small towns in Akwa Ibom and Imo States range from 1,000 to 2,500 Naira/m<sup>3</sup>, compared to about 41 Naira/m<sup>3</sup> charged by the water utility in Lagos city.

### **Status of Sanitation Facilities**

30. The 1997 survey also indicated that about 15% of the population did not have access to safe excreta disposal facilities and that about 75 % use pit latrines. The situation throughout the country is thought to be worse than this, with many facilities not operational or not well maintained. About 60 % of the people were shown to discharge their waste water directly to the environment with no consideration of aesthetic or health consequences. Although water quantities are comparatively low since water is mostly hand-carried, drainage in many areas is poor, and good breeding conditions for mosquitoes are created. Most residents have no organized way of dealing with their solid waste.

#### **Sample of Sanitation Patterns in Selected Small Towns**

##### **Existence of Latrines**

- Private Latrines**.....56%
- Public Latrines**.....11%

*Affordability (59%), ease of construction (23%), easy maintenance (21%), and no alternatives (16%) are the main reasons for choosing excreta disposal methods. Cost (88%) is the principal factor for lack of private latrines in households. The average age of private latrines is 6 years; per household, an average of 10 people share one latrine.*

##### **Disposal Facility in Household**

- Traditional Pit Latrine**.....54%
- Open field**.....39%
- VIP Pit Latrine**.....3%
- Flush Toilet**.....2%
- River**.....1%
- Other**.....1%

Source: Small Towns Water Supply and Sanitation Program development studies.

### **Government's Response**

31. The STWSSP has been launched recently by the government, aimed at increasing coverage of water supply and sanitation in small towns, which currently have an estimated 35 million inhabitants. The government's stated program strategy rests on demand-based delivery of water supply and sanitation, community ownership and management of water and sanitation systems, streamlined institutional support, and increased private sector participation, with the private sector providing management, financial or technical operational services under contract to the community (as described in the program's implementation manual). The Learning and Innovation Loan (LIL) recently approved by the Bank, will support this program to serve as a learning tool and to provide practical demonstration that water supply systems and sanitation facilities can be made both viable and sustainable. The European Union is considering financing an additional small project which will extend the learning available during the current pilot phase. The Government also has a school water supply and sanitation program in all areas. Investment needs are indicated in Section E.

32. Key issues for small towns are less than for urban, in that most have been identified and are being addressed and explored under the small towns program. With the large extent of service delivery to small towns by independent providers, their evaluation, rationalization, legalization, regulation and promotion becomes a significant issue. Also the conflict between the established demand responsive approach to small town development and political desires (or desires by donors) to spend large amounts of funds quickly, will become an issue needing to be addressed.

### ***C. Rural Water Supply and Sanitation***

#### **The Rural Water Supply Problem**

33. It is currently estimated that about 35% of the rural population have access to safe and reliable water supply and adequate sanitation facilities.

34. Nigeria has a policy of requiring community ownership and operation of rural water supply and sanitation. Small amounts of funding have been provided by donors and large amounts by the federal government. Uncoordinated, conflicting programs have been adopted by various national agencies, not in line with the stated policy. Many communities have been served by multiple programs, many served by none, and a majority of facilities that have been provided are not operational. Federal government with the collaboration of international agencies, especially UNICEF, is helping states to build capacity of state, local and community levels before moving the responsibility for rural water supply to the LGAs in accordance with the national policy. Sanitation is to be made part of rural water supply so as to promote health and hygiene education in order that inadequate excreta and waste water disposal do not increase health hazards.

#### **Government's Response**

35. Experience throughout the world has shown that the most successful rural water supply programs are those that rely heavily on community responsibility, initiative and self help. They are based on the principles that individual communities must (i) choose the level of service that they are willing and able to pay for and make their own rules as to the use of water; (ii) take full responsibility for all aspects of maintenance and operation of their water supply systems; and (iii) pay the full price for maintenance and operation of their systems and a part of the capital investment. These principles have now been incorporated into the government's recently adopted National Water Supply and Sanitation Policy. Support in policy development has been provided by the Bank and UNDP, and UNICEF and the United Kingdom have both provided support in project implementation. Investment needs are discussed in Section E.

36. Key issues relate to the review and possible updating of policies, and adherence to policies by both donors and government, both wishing to make a quick positive impact, but ignoring the lessons of the past.

### ***D. Water Resources Management***

37. Previous and current government programs have been centered on water resources development, while its management was not given adequate attention. Decree 101 was issued in 1993 empowering the FMWR to oversee management of the nation's water resources. The water resources challenges currently facing Nigeria include degrading watersheds and water courses in a situation of rapid population growth and diminishing funds, competing uses, pollution, poor land use, lack of: coordination, regulation, asset management, data collection and its use. A water resources master plan for the country was prepared with Japanese support in 1994. The FMWR, with the support of the World Bank and DFID, is now developing a water resources management strategy for Nigeria. The purpose of the WRMS is to launch a process of: defining an effective framework of water resource management policies, strategies, institutional structures and investment at the international, national, state and local levels; and building capacity within the public and private sectors for cross-sectoral water resource management at the federal, state and local levels. The process is designed to ensure wide participation of the civil society as stakeholders.

38. River Basin Development Authorities exist and are responsible for water resources development within the basin and for proposals for conservation and utilization of water resources for

multiple uses. They have been established as development authorities more so than management authorities, and in the absence of development funds in recent years have not had significant impact. Many projects implemented by the authorities remain unproductive due to the lack of necessary infrastructure – dams remain full due to lack of irrigation channels.

39. Key issues include the functions and relationship of sector institutions, regulation, lack of hydrological data, use and maintenance of assets, environmental pollution by industry (oil in the delta) and cities (Lagos), and use of international waters.

### ***E. Investment Needs***

40. Investment needs can only be estimated in the broadest of terms. However, deriving per-capita cost estimates from several recent studies provides useful information; estimated cost of new facilities under these studies covers a huge range from about \$30 to \$600 per person, averaging about \$180. Costs will depend largely on the level of service sought, particularly in urban areas and small towns. Taking a target of 80% coverage within twenty years, allowing for almost a doubling of population within that time, assuming simple motorized systems for small towns and boreholes with handpumps in rural areas, and 50% service by house connection in urban areas and 50% by public standpipes, would require almost \$10 billion investment for water supply, and an additional similar amount for simple sanitation and wastewater disposal facilities. Total investment to achieve this coverage would thus be about 3% to 4% of Nigeria's GDP. Operating costs are additional to these amounts. Order-of-magnitude costs for water and sanitation over 20 years for the three categories of settlement would be as indicated in Table 2 below; note though that actual costs per year would vary considerably from the averages shown, since development would begin slowly and build up as the investment framework becomes better established:

**Table 2: Order of Cost Estimates for the Water Supply and Sanitation Sector**

		Water Supply	Sanitation/Waste Water
	Rehabilitation	\$0.8B (av. \$20M/yr)	\$0.2B (av. 10M/yr)
Urban	New facilities	\$6.0B (av. \$300M/yr)	\$5.4B (av. 270M/yr)
	Operation & Maintenance	\$100M rising to \$430M/yr	\$65M rising to \$500M/yr
	Rehabilitation	\$0.1B (av. \$5M/yr)	-
Small Towns	New facilities	\$1.4B (av. \$70M/yr)	\$1.8B (av. \$90M/yr)
	Operation & Maintenance	\$1.5M rising to \$6.2M/yr	\$45M rising to \$380M/yr
	Rehabilitation	\$0.1B (av. \$5M/yr)	-
Rural	New facilities	\$0.4B (av. \$20M/yr)	\$1.3B (av. \$65M/yr)
	Operation & Maintenance	\$1.5M rising to \$5.3M/yr	\$45M rising to \$320M/yr
	Rehabilitation	\$30M/yr	\$10M/yr
Total	New facilities	\$390M/yr	\$425m/yr
	Operation & Maintenance	\$103M rising to \$442M/yr	\$155M rising to \$1200M/yr



## IV. Sector Vision and Proposed Bank Lending Strategy

### A. Shared Government–World Bank Vision for Water & Sanitation Reform

41. The preceding assessment depicts a sector in crisis. Improving water and sanitation must be an essential part of Nigeria’s economic and social development strategy. Many sector and government officials share the belief that the principal problem to overcome is the lack of financial resources. While there is no doubt that insufficient financial resources are a key constraint, it is by no means the only one. Raising funds and efficiently and effectively utilizing them requires fundamental reform of present sector practices, including institutional reform and new approaches to incorporate the private sector more systematically. Two main areas of need that will have to be urgently satisfied are: (a) a decaying infrastructure and insufficient investment; and (b) improved management and operational effectiveness in provision of services. This will not occur without major reform of the sector.

42. Given the complexity of the issues involved, it is evident that no panacea exists for successful reform of the water and sanitation sector in Nigeria. Additionally, strategies that may be effective for the larger urban water utilities will be unlikely to work in smaller urban and rural areas, or for the full range of sanitation services required. An overview of goals, strategies and key benefits to be derived from reforming each subset of the sector is outlined in Table 3 below (continued next page). The development and formulation of this overall strategy has been guided and supported by a strong dialogue<sup>5</sup> between the Bank and the Federal and State governments as well as by studies<sup>6</sup> commissioned as part of the ongoing dialog and for project-specific purposes<sup>7</sup>; at the most recent workshop on sector development, held in February 2000, at least 22 state governors indicated broad support for the proposed reforms and a need for Bank assistance to help move through the reforms prior to embarking on any significant investment programs. This interaction has enabled the Bank to gain a clear picture of needs in the sector and to help to develop this strategy for beginning to address them.

**Table 3: Overview of Sector Strategy for Water and Sanitation in Nigeria**

<b>A. FEDERAL LEVEL</b>	<b>WATER</b>	<b>SANITATION</b>
<b>GOAL</b>	<b><i>IMPROVED SECTOR COVERAGE AND OPERATIONAL EFFICIENCY</i></b>	<b><i>IMPROVED SECTOR COVERAGE THROUGH LOW COST FACILITIES</i></b>
<b>STRATEGY</b>	<ul style="list-style-type: none"> <li>◆ <i>Policy development and capacity building</i></li> <li>◆ <i>Strengthening of the weaker states</i></li> <li>◆ <i>Promotion of PSP</i></li> <li>◆ <i>Ensuring adequate regulation</i></li> <li>◆ <i>Ensuring compliance with sector policies</i></li> <li>◆ <i>Donor coordination</i></li> </ul>	<ul style="list-style-type: none"> <li>◆ <i>Elaboration of sector policies</i></li> <li>◆ <i>Hygiene education and health promotion</i></li> </ul>

<sup>5</sup> Including first suggestions of PSP in the water sector at workshops in 1996 and 1997, a major participatory seminar supported by the World Bank Institute (WBI) and attended by senior Federal and State government officials, donors, and a wide spectrum of stakeholders including the Nigerian Water Supply Association (NWSA), held in June 1998, a workshop for sector managers supported by the Bank and NWSA in September 1999, and a workshop for state governors and decision makers, supported by the Bank, WBI and WUP, in February 2000.

<sup>6</sup> Some of the studies commissioned by the World Bank include Nigeria Water Private Sector Participation Options Study, and Kaduna State Water Board Water Vendor Study, in 1998 and a similar study in Katsina on vendors and subsidies in 1997/98, among others, have also informed the Bank’s dialog with the Government as well as this strategy.

<sup>7</sup> The initial effort and initiative came from the government which formulated a Water Sector Strategy, attached as Annex 2A, for the Bank and various donor groups. Upon review, discussion and consultation within the Bank and with the government, the Bank provided comments on the government’s strategy, attached as Annex 2B, to provide guidance on future discussions in the sector.

<b>B. STATE AND LOCAL LEVEL</b>	<b>WATER</b>			<b>SANITATION</b>
<p style="text-align: center;"><b>URBAN</b></p> <p><b>GOAL</b></p> <p><b>STRATEGY</b></p>	<p><b>INCREASED EFFICIENCY THROUGH COMMERCIALIZATION &amp; INCREMENTAL PSP LEADING TO INCREASED INVESTMENT AND COVERAGE</b></p>			<p><b>IMPROVE BASIC SERVICES THROUGH URBAN UPGRADING PROGRAM</b></p>
	<p><i>Level I</i> SWA Autonomy, Commercialization, Service Contracts, Rehabilitation and UfW contracts</p>	<p><i>Level II</i> Service &amp; Management Contracts</p>	<p><i>Level III</i> Lease, Concession, BOO, BOT</p>	<ul style="list-style-type: none"> <li>◆ Urban upgrading including adequate excreta disposal</li> <li>◆ Sanitation programs through the water utility</li> <li>◆ Storm water drainage</li> <li>◆ Improved solid waste management</li> <li>◆ Incremental development of wastewater disposal facilities</li> </ul>
<b>SMALL TOWNS</b>				
<p><b>GOAL</b></p> <p><b>STRATEGY</b></p>	<p><b>SUSTAINABILITY THROUGH COMMUNITY OWNERSHIP, AND INCREASED COVERAGE</b></p>			<p><b>BASIC SERVICES DELIVERED THROUGH LOW COST SANITATION WITH WATER SUPPLY DEVELOPMENT</b></p>
	<ul style="list-style-type: none"> <li>◆ Community participation with local PSP promotes demand based delivery of W&amp;S services</li> <li>◆ Community ownership and management of W&amp;S systems</li> <li>◆ Operation and management contracted to local private sector (service contracts)</li> <li>◆ Level of service and cost sharing determined by community</li> <li>◆ Community contribution to capital costs (partial subsidies restricted to capital costs)</li> <li>◆ Promotion, monitoring of and coordination with private, informal providers, with minimal but necessary regulation</li> </ul>			<ul style="list-style-type: none"> <li>◆ On-site sanitation</li> <li>◆ Drainage facilities for sullage and wastewater</li> <li>◆ Basic network for storm water drainage</li> <li>◆ Communally owned and operated public toilets in selected areas</li> </ul>
<b>RURAL</b>				
<p><b>GOAL</b></p> <p><b>STRATEGY</b></p>	<p><b>IMPROVED W&amp;S COVERAGE AND SERVICES THROUGH COMMUNITY OWNERSHIP</b></p>			<p><b>BASIC SERVICES DELIVERED THROUGH LOW COST SANITATION WITH WATER SUPPLY DEVELOPMENT</b></p>
	<ul style="list-style-type: none"> <li>◆ Community owned and operated low cost W&amp;S systems</li> <li>◆ Community managed and maintained W&amp;S systems</li> <li>◆ Community contribution to capital costs (partial subsidies restricted to capital costs)</li> <li>◆ Local manufacture of handpumps to ensure spare parts availability</li> </ul>			<ul style="list-style-type: none"> <li>◆ On-site excreta disposal</li> <li>◆ Drainage facilities for sullage and wastewater</li> </ul>

<sup>8</sup> In this context, the term “small town” is not a classification based on population, rather it refers to a specific management model which is less than full utility management, but more than simply community-managed.

### ***B. PSP Strategies as Principal Thrust for the Urban Water Supply Market***

43. The wide usage of the acronym PSP throughout this Note reflects a broader definition, inclusive of subtler distinctions, rather than any preference toward full privatization. The ultimate shared goal – of the government and the Bank – is to meet the demand for water and sanitation in urban areas efficiently and cost effectively. The shortest route to the achievement of this goal is structural reform of the utilities which are service providers addressing the shortcomings which currently beset them. Thus the thrust of the reform for large urban utilities is to steer the development of SWAs along the path of PSP. However, PSP is not viewed as a rigid model, rather as a wide range of options which, at a minimum, seek to introduce commercial criteria in pricing, service delivery and/or allocation of resources. In part, this includes public sector reform, as many of the existing SWAs will likely be prepared only to undertake limited commercialization while retaining the state owned nature of the overall entity

#### **PSP Experience to Date in Nigeria's Water Sector**

There is some private sector participation (PSP) experience to date in water supply in Nigeria. The use of private services has resulted from necessity rather than deliberate policy, and experience so far has fallen short of achieving the level of competition and efficiency possible. Additionally, water quality is a major issue. PSP experience in the water sector includes: (a) private wells/boreholes – in several states, household wells are common and industries use their own wells or boreholes; (b) water vending – vendors are present in virtually every Nigerian town – in many cases, private investors have provided boreholes and pumps, vending kiosks, and even some individual connections; (c) leasing-in of equipment – the private sector has leased out computer equipment to the SWAs for billing and collection and the results have been satisfactory, for example, in Lagos and Kaduna; and (d) ad hoc contracting out of auto and equipment repairs – SWAs have used the services of a few private enterprises for vehicle repairs which the SWAs cannot do. Arguably, leasing of computer equipment and contracting out for auto repairs may not constitute PSP in any meaningful way; however, these tend to be some of the classic areas for outsourcing.

#### **Suitability of Large Urban Water for PSP**

44. Urban water supply has many characteristics of a natural monopoly. It has relatively large economies of scale, lumpiness of investment, large sunk costs and large interconnected network. In spite of the public monopoly characteristics of water supply, the operation and maintenance of services can be separated from its ownership in order to introduce competition into water supply with significant efficiency gains. By separating infrastructure investment and ownership from service operation, SWAs can achieve competition among private bidders seeking contracts for water supply operation. Incentive systems to encourage better performance can be incorporated into the contracts. Regulation and benchmarking can add a further dimension to concepts of competition by enabling comparison of similar utilities and enforcing the outcome of such comparison.

#### **Profiles of SWA Reform Initiatives Towards PSP**

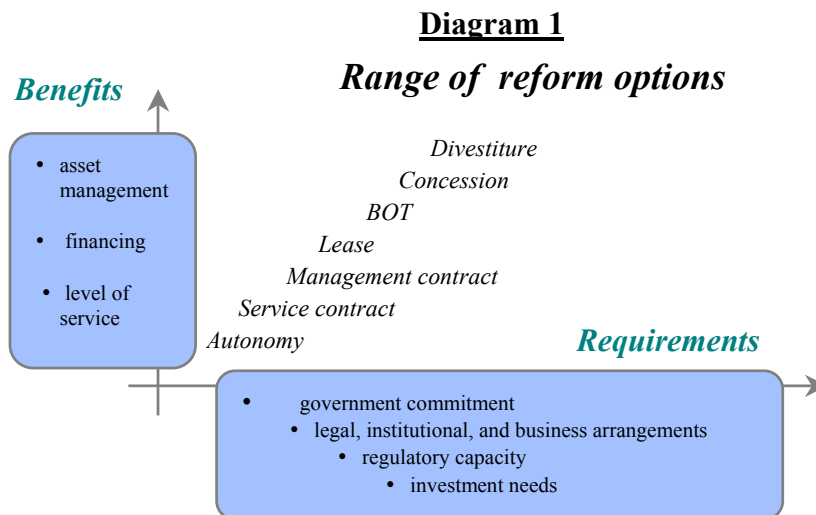
As an example of the current PSP activity, Lagos State is the furthest committed to privatization of its water utility, Lagos State Water Corporation (LSWC). Initial studies for reform (towards PSP) and improvements of infrastructure and operations were initiated under the recently completed Lagos State Water Supply Project and now funded out of the NWRP. The recently elected State Governor is committed to privatization of the LSWC, and has appointed advisers (IFC) to proceed toward the transaction. Of the other states, a number of studies on the options for PSP have been carried out (e.g. under NWRP and Multi-State Water), including an overall study<sup>9</sup> on potential for PSP involvement in the sector. Kaduna State, for example, is well advanced through initial studies towards reform and improvement of infrastructure. Now Kaduna is taking the next steps towards a lease transaction, and searching for funding (including an application for PPIAF). Other states are beginning to plan for similar work.

<sup>9</sup> Nigeria Water – Private Sector Participation Options Study, Halcrow Management Sciences Limited (June 1998), see supra note 6.

45. One critical element of the reform is the establishment of autonomy and accountability in water operations. Eliminating government intervention in day-to-day operation gives SWAs and private water operating firms greater autonomy. However, SWAs and operating firms are still accountable for the results of their operation and management with incentives and penalties based on their performance. Another important element is the setting up of institutional and regulatory frameworks that are enabling to the private sector, and encourage, even nurture, the private sector to be active in the Nigerian water supply.

### **Incremental Approach to PSP: One Size Does Not Fit All**

46. A key aspect of the proposed Strategy is to avoid the cookie cutter approach to PSP. The one-size-fits-all notion which prescribes leases, BOTs, concessions and/or divestiture universally, is based on a lack of information, analysis, and understanding of the essentially incremental nature of institutional change to achieve greater commercialization. Rather, the approach here is to develop in consultation with selected SWAs and the federal government<sup>10</sup>, a method for selection of PSP options which reflects specific key determinants affecting PSP outcomes.



47. The key benefits sought from PSP are operational and management improvements leading to increased levels of service, increased viability of the whole water operation and an appropriate level of financing. Diagram 1 above illustrates the range and nature of potential PSP options. As more risk and responsibility are taken by the private sector, and it takes on a greater proportion of financing, so the types of available PSP options will change (moving upwards, and to the right on the diagram). The extent of the PSP requirement depends on the specific needs of the particular SWA. The needs fall into two broad categories: (i) need for investment e.g. infrastructure condition, rehabilitation/expansion, operational improvements, equipment/training/staffing, etc; and (ii) need for management and operational improvements e.g. management and institutional change, financial and commercial management, asset management, and O&M. The exact choice of both PSP option and level of investor support will depend on the needs of the SWA, its current stage of development, and the level of support available for reform.

<sup>10</sup> The move to reform and PSP has gathered momentum, particularly over the past two years enhanced by the thrust of capacity building and technical assistance elements of ongoing World Bank urban water schemes. This has been linked to a sensitization and educational effort at the federal level, involving World Bank support for workshops related to reform and PSP, most recently following the election of the new democratic government in 1999. These include a workshop for administrators and managers in September 1999, and one in February 2000 aimed at the new State Governors and Federal Ministers.

### **Appropriate Regulation to Support the Reform**

48. One of the most important pre-requisites to successful PSP is the existence of a legislative and regulatory framework to protect the potentially conflicting interests and rights of consumers, governments, operators and the environment. This is key to attracting serious private operators to the sector as it provides clarity to their roles and responsibilities. Some critical choices will need to be made to ensure that the most suitable regulatory model is in place. This is further discussed in Annex 3.

### **Realignment of Institutional Responsibilities**

49. Implementing the reform requires realignment of water institutions. Except under concession or BOO/T, the state would own the water supply systems but would contract out operation and maintenance to the contractor. The reorganization would involve the restructured SWAs to be responsible for investment and contract management, a private contracting firm (management or lease), and an independent regulatory authority responsible for tariff approval or determination. The restructured SWA should have full autonomy except for (a) approval/decision of tariff rates, and (b) in most cases, approval of its investment plans by the State Government except in cases when the SWA uses its own resources.

50. **Federal Responsibility** At the federal level, support will be required to assist and promote the necessary sector reform, and also to help maintain and develop the existing national initiatives for capacity building in the sector.

51. **State Responsibility** The state government would continue to have prime responsibility for the sector; to initiate reform in the state; to establish broad policy for water supply; approve financing of new investments and rehabilitation plans at the beginning of the new arrangements; allocate state resources to cover existing debt services and consumer subsidies, if any; adopt measures to deal with staff redundancies that result from the PSP arrangement; and transform its SWA into a new state enterprise. The state government may in certain instances wish to be in the role of an asset holding company. Additionally, state governments may step in temporarily to an interim arrangement when an independent tariff regulator is yet to be established to approve/determine water tariffs.

52. **Tariff Regulator** An independent tariff regulator should be established at state or regional level to determine proper tariff rates, since the SWA is a state monopoly. The tariff regulator's independence in the long term from the state government is essential for several reasons: to avoid political interventions in tariff determination; to determine tariff rates objectively based on written guidelines; to secure technical expertise in rate setting; and to provide confidence to the private sector and consumers. The regulator would protect the interests of the consumer, the contracting firm and the water enterprise. Guidelines would govern such issues as cost recovery, financial sustainability, cost efficiency, structure of tariff, cross subsidies and affordability, and would interface with the Utilities Charges Commission at the federal level.

53. **Consumer Relations** Giving consumers a role in the decision-making process could generate greater political acceptance of raising tariff rates and support for PSP. Women's and other community groups may prove to be useful focal points for consumer representation and information.

### **Funding and Cost Recovery Issues**

54. Because of the huge discrepancy between the large investments needed to satisfy demand and the amount of resources that can realistically be mobilized, bringing water services to fully satisfactory levels for the entire population will take a determined effort for many years. The recovery and future development of the sector will have to proceed in phases and priorities have to be set. Two important considerations for future sector development strategy must be to ensure that: (i) available resources are

spent as cost effectively as possible; and (ii) resources are devoted to the highest priority among investment alternatives. In other words, the more money that can be mobilized and the better it is spent and recovered, the faster improvements will come and the sooner adequate service will be achieved. This is the central thought driving the proposed World Bank program of support (Section G); initial support needs to go first to those states which are sufficiently well developed to make rapid progress, while others are brought gradually (but urgently) up to the same level. The only realistic source of recurrent financing in the future will be higher payments by government, commercial and domestic consumers who currently pay only a small fraction of the costs of the services they receive. Affordability and willingness-to-pay considerations will be important factors in mobilizing resources from domestic consumers.

55. The Bank's strategy will be to support eventual removal of government subventions through an adequate tariff and revenue collection policy. The States have a generally poor record of implementing a viable tariff policy. As this is a key issue, the Bank strategy will be to link any support in the urban water sector to a demonstrated commitment by the State to establish and implement a sound tariff policy, with sufficiently high level of charges, capable of providing long term financial viability.

56. The tariff ideally is set to cover costs of the SWAs without subventions – O&M, debt service and part of the investment costs. The manner of dealing with existing high levels of debt service, or of grants or subvention by the State or Federal Government for this, or for major capital works would be as appropriate to the individual situation. The Bank will promote development of the commercial functions to ensure that commercial and financial viability of the individual SWAs can be attained.

### **Procedures in Implementing Reform**

57. The steps to be taken in implementing reforms involving the introduction of the private sector are well established through international experience of what has worked and what has failed. Proper and thorough preparation is essential, including first determining the appropriate and acceptable model for PSP, including business framework and regulatory regime, and investment program. Expert assistance is needed for these steps. Adequate public consultation and awareness raising is essential. When these preliminary steps are complete, requiring six to eighteen months, the necessary transaction with the private sector can be prepared and entered into. Again, thorough preparation of bidding and draft contract documents and consultation with prospective bidders is a necessity, and a transparent bidding process yields not only lowest prices but helps to ensure a viable contract will result.

### ***C. Urban Sanitation***

58. A sanitation strategy has not been well developed for Nigeria and a substantial amount needs to be done. A number of federal ministries have an interest in sanitation, together with several authorities at state and local level, though the new Water Supply and Sanitation Policy adopted by the government puts responsibility with Ministry of Water Resources. Initially the responsibilities and strategy need to be clarified and further developed. There is a clear need to link the provision of adequate wastewater disposal facilities to the provision of water supply for reasons of health impact and pollution control. Provision of excreta disposal facilities should desirably be linked to water supply because of the symbiotic impacts of the two services on health and well being. Sanitation strategy should also address cost recovery issues since typically people will only be prepared to pay for sanitation to the extent that it provides for their own comfort and convenience, whereas many of the impacts of poor human, waste water and solid waste disposal are external.

59. In considering strategic directions for dealing with excreta and waste water, consideration should be given to: services based on demand; promoting demand through hygiene education, and public awareness and motivational programs; user financing of part of the total cost of basic service; use of PSP (artisans, small scale entrepreneurs as septic tank emptiers, fecal sludge treatment operators) for

service provision; use of sanitation surcharge on water bills to finance social marketing; capacity building; some forms of subsidies to construction; and increased role of more efficient water utilities to manage the development of sanitation programs. Both on-site sanitation and sewerage will be necessary and should be used according to local circumstances (density, hydrogeological, water consumption, soil characteristics, willingness to pay, etc.). Utilities (under private management or not) have shown elsewhere that they can play a decisive role in improving sanitation.

#### ***D. Small Towns Water Supply & Sanitation***

60. The government's stated program strategy for small towns (population as many as 100,000) rests on demand-based delivery of water supply and sanitation, community ownership and management of water and sanitation systems, streamlined institutional support, and increased PSP under service contracts. The approach, in the context of Nigeria's small towns, is new, and experience with it, both within and outside the country, limited. A learning phase involving build-up and testing of institutional capacity, community management and the interest of the local private sector is being tested by a recently approved LIL with additional support from EU before the approach is implemented nationwide. Associated with the program, the extent to which independent providers operate in small towns will be clarified, and the means to encourage, improve and expand their services will be ascertained. Independent providers are thought to be a significant resource that can be readily utilized with minor changes to current laws.

61. Sanitation planning and improvements will be addressed as part of the pilot activities. Key areas of focus will be excreta and sullage disposal as well as drainage, hygiene education, training of individual artisans and small enterprises, construction and promotion of improved facilities.

#### ***E. Rural Water Supply & Sanitation***

62. The government's program of encouraging shared ownership and management of rural water systems jointly by local governments and resident communities needs to be implemented at the rural level. The focus in rural areas will be to move the ownership and management of water systems significantly into the community with increasingly less control by, and dependence on, the local governments. This will require training and technical assistance, with a view to involving women more fully both in the maintenance of the systems as well as in basic financial management. The thrust of the strategy is to phase out partial subsidies for O&M costs and to restrict subsidies to capital costs only. In addition, local manufacture of hand-pumps will be promoted to help ensure the availability of spare parts.

63. The sanitation strategy for rural areas is evolving, as results of the pilot referred to above are expected to provide guidance on the scope and scale of future initiatives. At a minimum, on site excreta disposal and drainage facilities for wastewater will be a priority.

#### ***F. Water Resources Management***

64. The Government is developing a Water Resources Management Strategy (WRMS) which will provide a sound basis for developing a comprehensive framework for managing the water resources of the country in a sustainable manner. This framework will consider water and the environment in a broad, multi-sectoral, integrative perspective. The overall goal of the WRMS process is to enable equitable access and sustainable development of water resources by all sectors in order to promote sustainable long-term social and economic development.

### ***G. Suggestions for a World Bank Supported Program***

65. **General:** Depending on agreements reached with the government, Bank support could be focussed on the following areas:

- policy development at federal level
- promotional and support activities at federal level
- reform activities at state level
- infrastructure investment at state and community levels

It is proposed that an initial Bank project provide finance to the Federal Ministry of Water Resources (FMWR) for the first two items, policy development and support activities, and also, either through the Ministry or directly to selected states, for the third item, sector reform. Whether support is provided directly to the state, or through the Ministry, will depend on the level of development of the state water agency, generally in line with Table 4 below, with the less developed SWAs receiving continued support through the Ministry until defined benchmark levels or triggers are reached, and more developed (Level III) states receiving direct support for reform. Investment funds would be provided through subsequent projects, contingent on an adequate level of performance having been reached. These matters are further discussed below.

66. **Federal Level Support:** Several areas of policy need further development and rationalization, and the Bank could support the government in this effort. Particularly (refer Annex 1), policies in relation to tariffs and service to the poor, service to peri-urban areas, small independent providers and franchising, sanitation, regulation of water supply and sanitation services, and water resources management, need further consideration. Rural water supply policies and the experience of implementation needs review. Bank partners, the Water and Sanitation Program (WSP) and Water Utilities Partnership (WUP), both based in Abidjan and supported by donor and Bank funding, will assist in relation to independent providers and sanitation policy (WSP), and peri-urban water supply (WUP). It is also proposed that an application for PPIAF funding be made to support the development policies and capacity related to regulation.

67. In addition to policy development assistance is needed at the federal level to help with:

- development and implementation of water resources management strategy;
- establishment of regulatory bodies
- promotion to the states of best international practices in water supply and sanitation;
- ensuring that the complexities of reform are fully understood;
- monitoring and evaluation of sector development and planning of improvement;
- performance benchmarking of the state water agencies;
- feasibility and investment studies;
- hygiene education;
- manpower training; and
- donor coordination.

As participation by the private sector increases, some aspects of these items will be more and more taken by the private sector operators, however there will remain a large task at central level for the foreseeable future. Manpower development will remain an important central function though the NWRI training center may in time be privatized as its main clients become private operators.

68. It is proposed that financing be provided through the Ministry to support initial reforms of those state water agencies (good Level I and Level II, less-urban states) which might not qualify for direct assistance to help them move to a lease or concession contract. This would be in the form of Technical



Assistance or preparation of Management Contracts, provided the state meets defined criteria demonstrating their commitment to continued development. A project for FY2001, the Urban Water Sector Reform Project, would provide Federal Level Support as indicated above, and in addition provide direct support to selected states as indicated below.

69. **State Level Support:** At the individual state level, it is proposed that the Bank support the reform of individual states, and that following reform or demonstration of a sufficiently high level of performance, investment funds be offered to help satisfy the huge unmet demand that now exists in most states. The Bank would clearly prefer to work directly with those states (Level III) which have the most attractive solution to their problems and those with the best probability of initial success with their proposed reform strategy. This implies those states that are currently performing comparatively well, have a high level of political commitment, and are prepared to move at least to a lease or performance based management contract arrangement for their operations; options for improving the weaker states could also be tested.

70. Initially, finance would be required to undertake studies to confirm the appropriate PSP model, investment planning and environmental studies, financial modeling, establishment of regulatory arrangements, and transaction preparation, bidding and award. Some SWAs may need “lifeline financing” to keep them operational during the transition and help make the reform effective. This would be supported under the state component of the proposed FY2001 Urban Water Sector Reform Project mentioned above.

**Table 4: Suggested Method for SWA Performance Evaluation**

The best available performance indicators for the SWAs are shown in Annex 4, together with comparative figures from several other water utilities in the region. The states should use these figures for their own benchmarking exercise to gain a reasonable indication of how well they are performing. In considering the sort of reform that might be appropriate, a lesser group of indicators such as in the table below, (one significant broad indicator in each of the political, institutional, technical and financial areas), would be appropriate. Use of the points system of the table to classify states could provide a first indication of possible reform option that might be supported by major financiers of the sector. It is proposed that this system of scoring remain flexible rather than remaining static, and that it evolve as experience is gained and the most progressive states graduate.

Political will to reform		Availability of current audit report		Level of unaccounted-for water		Annual revenue collected from consumers	
Level	Points		Points	Level	Points	Level	Points
Strong	20	Yes	10	> 50%	0	< 50% of O&M costs	0
Medium	10	No	0	35% to 50%	2	> 50% of O&M costs	2
Weak	0			20% to 35%	5	>100% of O&M costs	5
				< 20%	10	>100% of O&M costs and depreciation	10

<i>Total Points Scores</i>	<i>Possible highest level of support to be considered by financiers</i>
45 or more (Level III)	Immediate investment project.
32 or more (Level III)	Preparation of lease + lifeline investment during preparation, with investment after lease signed.
24 or more (Level II)	Preparation of management contract, with possible investment after contract signed
20 or more (Level I)	Technical assistance through the federal Ministry of Water Resources

Note: For states having less than about 500,000 urban population, other considerations may apply.

71. Preparation of investment projects would proceed in parallel with the PSP transformation process, but it is proposed that the availability of Bank investment financing (apart from lifeline financing) should await the award of operational contracts. This is reflected in the proposed Bank lending program as an Urban Water Supply Reform Investment Project in FY 2003. It is envisaged that further similar projects would follow, including those financed by other donors.

72. **Support to Lagos State:** The case of Lagos is sufficiently different, and the problems so overwhelming, that separate attention is warranted. As regards water supply, Lagos has already contracted with IFC as Transaction Advisers to help the state enter into a contract for a PSP arrangement for operation (and perhaps partial financing) of its water supplies, and such an arrangement could be in place as early as September 2001. The need for large additional investment in Lagos water supply (perhaps as much as \$2 billion over 20 years) has been regularly demonstrated, particularly for service to the poorer areas of Lagos. In parallel with the IFC task of introducing PSP as a means of improving efficiency of operation and attracting some private sector investment, additional financing is needed, and it is proposed that a lending project be prepared so that the full benefits of improvements in operations can be obtained. Determining the scope of the project will require close collaboration with the IFC during the transaction phase. Bank approval of the project, the proposed Second Lagos Water Supply Project for FY 2002, would be conditional on satisfactory and irreversible achievement in the PSP reform of Lagos Water Supply.

73. **Sanitation:** Sanitation in urban areas has received inadequate attention in the past, and it is proposed that it be better coordinated with water supply developments. Sanitation policies would be further developed under the first Urban Water Sector Reform Project (FY01) described above. Those states participating in Bank financed investment projects would be expected to at least prepare comprehensive sanitation plans in parallel with the water supply investments. Significant sanitation investment would be required prior to any second phase water supply investment program. Sanitation investments, where they involve on-site excreta disposal, drainage of sullage water, and improvement of solid waste management, are proposed initially, until sanitation policies are better developed, to be dealt with through the Bank's program of urban upgrading. Where sewerage or other forms of wastewater management are to be undertaken, it is proposed that PSP contracts for water supply also include the requirement to operate and collect user fees for sewerage. For the present, it is proposed that the Bank's support to improvement of urban sanitation focus on urban upgrading (together with associated city-wide services) as under the proposed Community Based Urban Upgrading Projects (FY 2001 and 2003), except in the case of Lagos. For Lagos, preparations are well advanced, urban upgrading has already been piloted, and the lack of infrastructure is so critical that early support is warranted for both urban upgrading and additional sanitation and pollution control investments (proposed Lagos Urban Upgrading and Sanitation Project – FY 2002).

74. **Small Towns Water & Sanitation:** With respect to small towns water and sanitation, the Bank has supported the government in developing the Small Towns Water Supply and Sanitation Program which involves community ownership and management, with support under contract by the local private sector. Communities will contribute to the capital cost, and the government will subsidize the capital cost of facilities, up to stated ceilings. In parallel, the extent (thought to be large) to which small independent providers are in action in small towns will be determined, and their operations legalized, regularized and minimally regulated, to provide a sufficient level of service. Means to encourage this through small scale enterprise support, will be explored. The Bank has recently approved a Learning and Innovation Loan (LIL) to help finance a pilot project to confirm assumptions made in the program design and will help to analyze its results. The European Union is likely to support an extension of the pilot project to cover a wider range of conditions than can be covered under the Bank financed pilot, for added learning. After necessary modifications, the Bank should consider

financing part of the country wide program, and would invite other donors to participate as well. This is suggested as a FY 2003 project (APL), depending on the outcome of the pilot.

75. **Rural Water Supply & Sanitation:** The Bank assisted the government in preparation of the Rural Water Supply and Sanitation Policy through the Bank/UNDP Water and Sanitation Program in 1992. UNICEF has been the major support agency in implementing the policy. It is proposed initially that the support be provided for a review of experience under current policies and to incorporate recent international learning, under federal policy development component of the first Bank supported project. It is also proposed that Bank assistance to rural water supply and sanitation be provided through the FGN/UNICEF program and through integrated rural development projects which include demand-driven, community-owned, water supply and sanitation facilities in line with established policies. The major challenge will be to ensure that current policies, which reflect best international practice, are incorporated into the design and implementation of integrated projects.

76. **Water Resources Management Strategy:** The Bank has been assisting in development of a Water Resources Management Strategy (WRMS). The immediate objectives of the WRMS are to initiate a continuing process to review and analyze key issues constraining water resource management and development, and build capacity, awareness and consensus. Lack of finance has hindered development of the strategy. However, the main activities are now to proceed during the next one to two years, with DFID and Bank finance. It is proposed that the Bank continue to support the government by providing best international experience and assisting with dissemination to stakeholders, including fora, meetings and workshops. For convenience, Bank support could be incorporated into the policy support component of the proposed Water Sector Reform Project.

77. **Proposed Bank Lending Program:** The proposed program of support to the sector, as described above, with notional amounts, would thus be as shown in Table 5.

**Table 5: Proposed Bank Lending Program**

Project	Year (Bank FY)	Amounts in US\$ million
Community Based Urban Upgrading Project	2001	60.0
Urban Water Sector Reform Project	2001	90.0
Second Lagos Water Supply Project	2002	300.0
Lagos Urban Upgrading and Sanitation Project	2002	150.0
Urban Water Sector Reform Investment Project <sup>11</sup>	2003	300.0
Second Community Based Urban Upgrading Project	2003	150.0
Small Towns Water Supply & Sanitation Project	2003	150.0

78. **Implementing the Lending Program** Given the fact that there has been little new donor activity in this sector over the past several years, there is a high level of demand for Bank and donor support in the water and sanitation sector. We propose the establishment of IDA credits (supplemented by cofinancing) to support projects valued at about US\$600 million over the first two years of a new lending program, based on the strategy and selection procedures outlined. This would satisfy initial needs and be of sufficient value to have an impact. It would be within the proven capacity of the recipient institutions to absorb, and could go ahead quickly due to the substantive dialog that the Bank has maintained with the sector, particularly during the last five years, the considerable sectoral knowledge that has been gained, and the capacity that has developed. The success of this initial investment would help to develop further approaches.

#### *H. Donor Support*

79. Support from the external support agencies in the form of international expertise and financial assistance will be crucial for the government in its efforts to reform the sector. Opportunities exist for participation by all donors in the Government's development program, either in conjunction with, or separately from the proposed Bank program. Preparation of an Adaptable Program Loan (APL) for urban water reform and investment would necessitate full agreement by donors to coordinate their activities. Opportunities for smaller contributions exist in various areas of technical assistance, or there are opportunities for larger amounts of financing to support the investment programs described.

80. In requesting and using donor aid, the Government should ensure that such aid is well coordinated and enhances rather than detracts from the Government's reform path. It is important that the FMWR ensure that the rules of each development program are not thrown overboard in the simple interests of

<sup>11</sup> Potentially could be combined with the FY01 Urban Water Sector Reform Project as an APL.

spending donor money. Donor aid should be a vehicle for sector reform and be made available only to those who demonstrate the willingness to undergo the changes necessary to improve sector efficiency and sustainability. Coordination of all donor inputs by the FMWR is strongly recommended.

## **Comments on the Government's National Water Supply and Sanitation Policy – January 2000**

In January 2000, the Government of Nigeria adopted a National Water Supply and Sanitation Policy. The strategy advocated in this Note is generally consistent with the Government's policy document, and would lead to implementation of many aspects of the policy. Some areas where further reconciliation are needed are outlined below:

- (i) Coverage under the Government's policy would increase from about 40% now to 60% in 2003; 80% in 2007; and 100% in 2011. These targets are very ambitious and have serious financial implications. The extent to which coverage increases will depend on the total cash flow of the sector, including revenues, and will depend on the extent to which subsidies are provided. Interim targets are fine in principle, but flexibility in meeting them is needed. The 50% coverage stated in the Policy's discussions of financing (no target date) is perhaps a good initial target. The consumption levels are also high, and lower initial targets would be appropriate. Thirty liters per person per day (30 l/c/d) as a "guaranteed minimum" is a large amount of water to carry each day; 20 to 25 l/c/d would be an appropriate minimum standpipe supply. There are inconsistencies within the Policy, namely 60 versus 90 l/c/d for semi-urban water supplies; and basic needs being defined as 60 l/c/d which is higher than the 30 l/c/d to be provided in rural areas.
- (ii) For sanitation, intended coverage appears to be the same as for water supply, perhaps an even more ambitious target. Consumption standards are given for water, but stated to apply also to sanitation which requires a different form of definition for the standard of service to be provided. Sanitation policy is not well developed at this stage.
- (iii) There are a number of statements about tariff policies and free access for the poor for basic human needs. Some are inconsistent, and the general thrust is not fully compatible with this Note, which shows that the poor can and do pay, often excessively. A tariff policy is promoted which will guarantee free supply of basic human needs, this being achieved by Government subsidy or cross subsidy. Basic human needs are defined as 60 l/c/d, so achieving it could require full government finance of provision of water up to that level, clearly not intended, and demonstrated not to be feasible. The policy also makes encouraging statements about water being recognized as an economic good, subsidies being targeted, and water supply agencies operating on a commercial basis. Subsidies under community ownership of rural and small towns systems need different concepts than under utility management of water supply systems. Clarification of policy regarding tariffs and subsidies is needed, and this Note adopts what is considered viable.
- (iv) The Policy is for regulation to take place at the federal level. Regulation needs to cover several features, resource, environment, quality, and price, the most difficult being the last. This Note recommends regulation at different levels, including state or regional level for tariffs. The Policy does not differentiate sufficiently between regulation of tariffs and other factors, under conditions such as under traditional water supply operation, under state authorities and under community ownership or private ownership or operation.
- (v) Urban, semi-urban and rural communities are defined in terms of population, greater than 20,000, between 5,000 and 20,000, and less than 5,000, respectively. This Note also uses the term "small towns" to refer to communities where water supply systems are owned by the community, and operated by the community with private sector assistance under contract, as necessary. Small towns under this definition could span from complex systems in rural areas to simple systems in urban areas.

The functions of state and local governments under this “small town” approach is clearly different than under a conventional approach, and needs to be reviewed as experience is developed under the small towns water supply and sanitation program, the principles of which have been adopted under this Note.

(vi) Cost sharing proportions differ from those agreed for the small towns program, which we would recommend and have adopted under this Note. Community contributions of 5%, described as “token”, have been found to be insufficient to establish community ownership and foster sustainability. A minimum contribution of 10% is recommended, and higher if communities adopt a level of service higher than basic. The rationale for 30% federal, and 10% local government contribution to urban services is not given in the Policy. The circumstances under which the federal contribution would be provided are not given, but apparently the intention is to subsidize peri-urban areas. Cost sharing would need to be variable under options of private sector participation, or with independent providers.

(vii) Independent providers are not identified as major players in the sector, though their major contributions are recognized. This Note accepts their continuing participation, and encourages its expansion.

(viii) The Policy has state and federal government responsibility for providing basic facilities in peri-urban areas (unplanned urban slums where many of the urban poor reside). A suggested arrangement is for provision of water by the state, but with potential for federal subsidy of capital costs, and management of water points by the communities under similar arrangements to those adopted for the small towns program.

## Urban Water Sector – Assessment of Current Status

### Institutional Assessment

1. The typical SWA has a Board of Directors and a General Manager controlled by the respective ministry, mostly the State Ministry of Water Resources (SMWR). The General Manager is appointed by the respective state governor. There is significant turnover of staff at this level resulting in managerial instability. Senior staff are frequently transferred from the SWA to state government departments and vice versa. The pay scales are similar to the civil service and much lower than the private sector, often leading to loss of competent and motivated professional staff, particularly in finance and accounting.
2. Despite the fact that the edicts establishing the various SWAs provide that they operate as autonomous entities, in practice they operate more like government departments closely integrated into the civil service. All of the SWAs depend on subvention from their state governments to cover a significant portion of their recurrent costs. As a result, most state governments see no obligation to pay for water used, causing high wastage and perpetuating a vicious cycle. Based on data submitted by 25 SWAs, government recurrent subvention exceeded revenues from water sales in 1992, 1993 and 1996. For new construction works, all SWAs depend on state government funds and/or funds from external lending agencies, which are channeled through the federal and state government system.
3. In terms of their organizational structure, most SWAs have a decentralized structure down to district zonal offices, which is a positive development. A results-driven atmosphere rarely exists among the SWAs. They do not have an incentive mechanism rewarding achievements, and observations applying to a stagnant and inefficient public monopoly seem to fit most SWAs. The agencies are usually overstaffed, and as remuneration is low<sup>12</sup> and at times supported by a rent seeking environment, staff and management are generally perceived to be benefiting from this stagnant state of affairs. The staff to customer ratio in SWAs is approximately 70, compared to the average best practice of 3.5 in efficient utilities.
4. There is poor definition and assignment of responsibilities for regulation and effective control of the various aspects of the water and sanitation business. This is lacking in all areas, but is particularly notable in the areas of pricing, level of service and water quality.

### Commercial Assessment

5. Regardless of improved attitudes resulting from NWRP, most SWAs are still not sufficiently commercially oriented. As many SWAs do not have reliable Management Information Systems (MIS), the commercial-oriented operation is limited to basic procedures of billing and collection based on incomplete and at times inaccurate customer data which further constrain the income of the SWAs. Moreover, the SWAs are still charging their average domestic customers a flat monthly rate, usually low and designed to serve the poor. However, most of the poor are not connected to the urban water supply network and, thus, do not enjoy the benefits of the flat-rate policy. The issue of illegal connections varies from state to state and is impossible to measure precisely by nature of its definition. It is aggravated by the fact that most Nigerian water supply connections are not metered. In summary, the SWAs do not have a firm grasp on the commercial side of the business – volume produced, volume sold, amount lost through usage by “free-riders” and uncollected accounts.

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<sup>12</sup> A survey done by the WUP in 1998 showed that the average annual salary in Kaduna was only 3% of the average annual salary of its neighboring counterparts in Senegal and Cote d'Ivoire.



6. With respect to revenue generation, the SWAs are handicapped by (i) very low tariffs ranging from about US\$0.02 to about US\$0.41/m<sup>3</sup> compared to US\$0.65 and US\$0.80 in Cote d'Ivoire and Senegal where tariffs cover full costs; (ii) under-billing because of inaccurate customer databases and flat-rate billing; (iii) very low revenue collection rate (in some less than 10% of billed amounts, due to poor standards of service); (iv) significant level of arrears, particularly from government agencies and similar high users; and (v) high and steadily increasing operating costs. Under the current situation, tariff increases are handled through a prolonged bureaucratic process (rather than a predetermined financial formula) which is authorized by the state executive council. This setup negatively influences the SWAs' managerial sense of operational responsibility, and the possibility of measuring accountability and reaching financial self-sufficiency is limited. Studies have shown that consumers are willing to pay much higher prices for reliable water supply than what is being charged by the SWAs. A recent survey (1997) done in Lagos shows street vendors sell water for around ₦ 100 to 200 per m<sup>3</sup>, private water tankers sell for ₦ 500 to 800 per m<sup>3</sup> while the Lagos State Water Corporation charges residents, in theory, about ₦ 41 per m<sup>3</sup>. A similar study done in Kaduna and Katsina in 1998 shows that vendors charge as much as 20 times the unit rate of the respective SWAs.<sup>13</sup> The poorest families pay more per month than some of the richest who can afford a connection to their compound or house. The amount, for a very limited volume of supply from private water vendors, can be four to ten times that of one month's continuous tap supply from the utility.

### **Financial Assessment**

7. Based on information compiled under the ongoing NWRP on operational and financial performance of the SWAs, their financial situation is critical, largely due to the policy environment and incentives which do not enable efficiency and independence in financial management and operations. The result is inadequate record-keeping and financial management, inefficient procedures for billing and collection and inadequate revenue generation as previously discussed. Except for a very few states (less than 5), the practice of preparing final accounts and having them audited within a reasonable timeframe (i.e. less than six months after the close of the financial year) is not standard. Assistance provided by ongoing Bank-supported projects has led to basic improvements in some as a result of (i) a detailed assessment of the financial management capacity of all the SWAs, (ii) preparation of standard manuals of procedures for billing and accrual accounting, and (iii) training programs and numerous workshops. The new procedures have not taken root in most of the SWAs, however, because of the lack of appropriate institutional incentives. There are many SWAs that still use basic cash accounting procedures.

8. Added to this is the rapid deterioration of the Naira exchange rate during the late 1980s and 1990s which has had a very adverse effect on SWAs with debt denominated in foreign currency and on the cost of imports such as chemicals and spare parts, as well as higher depreciation allowances. At the same time, the tariff remained depressed with infrequent revisions compounded by a poor pricing mechanism – that is a low flat rate or very low volumetric tariffs applied to the majority of domestic consumers regardless of the amount of consumption, inducing greater consumption than necessary which in turn generates additional operating costs.

### **Operational Capacity Assessment**

9. Most SWAs are currently trying to produce as much water as they can, in a very constrained operating environment and with a production capacity insufficient to supply the existing needs. Even the design capacity of water systems often cannot be attained because of the deteriorated state of

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<sup>13</sup> The Katsina study (Water Vendors and Their Customers Survey, October 1997), reveals, inter alia, that the price per liter sold by water point operators is 21 times that of the water board. This situation exists because of the insufficient production and unreliable supply of public water. It is useful to note that the method of distribution of water by vendors may compromise hygienic standards as there is no regulation for quality.

facilities and erratic public power supply. While, as a result of NWRP, there have been improvements in maintenance practices, maintenance is still frequently under-performed as a consequence of financial constraints, low motivation, and a low technical capacity. Preventive maintenance which could reduce breakdowns substantially, is not performed on a regular basis, but rather practiced on a “repair as necessary” level. Leak detection equipment exists in only a few states. States which have external assistance such as in-house consultants, with an objective of building capacity, usually delegate a fair share of operational tasks to these consultants.

10. Many of the SWAs that are able to operate at reasonable capacities are constrained by power unreliability and low voltage. The low reliability of the National Electrical Power Authority (NEPA) has a major effect on the operations of most SWAs due to their heavy reliance on power for the production and delivery of water. Low voltage frequently causes damage to electrical equipment. The regular power outages require provision of high levels of standby power generation at high cost both in capital terms (up to 30% of the capital cost of production facilities) and in the cost of diesel fuel.

11. In an attempt to contain operating costs, the SWAs have reduced their hours of operation to match available revenue further impacting on the level of service provided and the willingness of consumers to pay. But they also cut back on their operations and maintenance expenses to the point where, in many SWAs, virtually no maintenance is being carried out, leading to rapid deterioration of the systems and the need for costly and premature asset replacement. Being unable to cover their operating costs, and unable to secure regular revisions of the tariff, all of the SWAs receive financial assistance from the state governments, at levels and amounts which are both inadequate and unpredictable. While the SWAs have done what they can to continue to operate their systems under severe financial conditions, the situation clearly is not sustainable.

12. Water quality, in general, is monitored in an ad hoc fashion, and there is no incentive for the SWAs to follow standard quality guidelines in a consistent manner. Many of the SWAs indicate some level of water quality testing, but the information is generally not used for management to ensure that safe water is delivered.

13. Operational capacity building and training have taken place as components of previous Bank funded projects. Additionally, under the ongoing NWRP, it was identified that about 40,000 people work within the formal water supply sector and a national training scheme was established at the National Water Resources Institute (NWRI) in Kaduna. An Outreach Division was established which has been effective in providing practical skills-based training on an on-demand basis for all levels of personnel of the SWAs. This scheme is in its infancy, but is clearly a promising approach to development of skilled capacity within the sector.

#### **The Case of Lagos**

LSWC covers only 35% of the population of metropolitan Lagos estimated at about 12 million people. More than 60% of the water produced is unaccounted for and lost through leaks, illegal connections and excess usage due to flat rate tariff. The remaining 65% of the population rely largely on private sources, including wells and boreholes and vendors (some of whom obtain water illegally from the LSWC system), and to a lesser extent on surface waters (streams and rivers) for their daily water needs. LSWC estimates that there are about 100,000 customers connected to its system, of whom only 4,000 are charged on the basis of metered consumption while the remaining 96% are charged on the basis of flat rates. The reported revenue collection is less than 30% of billed amount. Lagos has no central sewerage system which is in operating condition. About 30% of households in Lagos use pit latrines while 53% use flush or pour-flush toilets. However, their function has been greatly affected by unreliable and inadequate water supply. Less than 12% have a working water-borne sanitation system and only very few use public toilets. All wastewater ends up in the storm water drainage system, which in turn is impacted by an inadequate solid waste collection system. Flush toilets typically drain into vaults which are regularly emptied and discharged either into the storm water drainage system or to the Lagos lagoon.

## Annex 3

## Private Sector Participation in Urban Water Supplies

**Implementing the Incremental Approach**

1. Table 6 (sample grid attached below) provides a matrix of reform options for SWAs classified by reform-mindedness of water entities thus far. This table is merely illustrative and not based on micro data. It provides an at-a-glance rough picture of the gradual nature of PSP oriented reform as applied to ground zero, or where SWAs are today. This exercise will provide SWAs appropriate guidance to self-select their reform option, as well as providing a longer term vision for increasing PSP. The usefulness of this matrix is twofold: first, it orients the SWA to anticipate needs of the private sector/operators in bidding for participation; and second, it assists the SWA to self-select the most appropriate PSP option.

**Table 6: Matrix of PSP Oriented Reform Options<sup>14</sup>**

Entity	Basic Management Reforms	SWA Autonomy from State Govt.	Service Contract	Management Contract	Lease	Concession	BOT/BOO
<b><u>Level I States</u></b> (very reform minded, initiated cost recovery, prepared for increase in tariffs, high billing and collection ratio)				√	√	√	√
<b><u>Level II States</u></b> (expressed interest in reform, undertaken studies, minor management reforms initiated, no fiscal reforms undertaken)			√	√	√		
<b><u>Level III States</u></b> (little interest and initiatives, moderate to poor performance record)	√	√	√			(√) <sup>15</sup>	

2. Among the available forms of PSP, management contracts and leasing are likely to be most applicable to the current Nigerian context.<sup>16</sup> Phase one will be limited to commercialization through service and/or management contract/s. If successful, this may be a precursor to the next leasing contract phase. Institutional reforms that would occur during the first phase, as well as improvements in technical and financial performance resulting from the management contract, would pave the way for the lease contract. Some SWAs (up to 10) would be ready to enter immediately into the second phase, while many will need to begin with phase one.

3. In service and performance based management contracts, the contractor assumes responsibility for overall operation and maintenance of the systems or a major component such as a treatment plant, with the freedom to make day-to-day management decisions that affect the short-term results. It is possible

<sup>14</sup> This table applies mostly to urban SWAs, and thus small towns and rural categories are not included.

<sup>15</sup> Possibly small local concessions where government has no capacity.

<sup>16</sup> This appears to be a general trend throughout the continent, as evidenced in several studies, including a recent study done by the Oxford Economic Research Associates (OXERA), **Reform of the Water Sector in Africa**, (February 2000) which notes that "...[i]t is also clear that the range of PSP options is expanding and that, as PSP becomes more ingrained into a country, the preference for PSP contracts which involve more private involvement (eg, concessions) is increasing. This reinforces the belief that a gradual and staged approach to reform is preferred for water supply and sanitation services, often reflecting political and social uncertainty about introducing private operators into the sector."

to create incentives to improve productivity and reduce unaccounted for water by basing the contractor's pay partly on its measurable performance, such as volume of water sold, reductions in UFW or collection rates. Because such contracts do not require large investments on the part of the contractor and because they are primarily an interim solution, it is advisable to limit their duration to five years. Management contracts involve limited risk for the private firm. For this reason, they could play a useful role in Nigeria as an interim arrangement. In cases where there is the need for substantial rehabilitation, and it is difficult to arrange a leasing contract, a management contract could put the SWA on the path of commercial efficiency, while allowing the private firm to test the waters on a low-risk basis before committing to the more comprehensive lease contract arrangements.

4. Under leasing, contracting out operational functions would liberate SWAs from the day to day management of operations and maintenance and make it possible for them to concentrate on policy-making, regulation (through contracts), investment planning and investment itself. Unlike a management contract the lease arrangement requires the private operator to assume commercial risks. The private operator must finance working capital and replacement of certain components, such as connections, pipes below a certain size, small pumps etc. The state government, owner of the assets, retains responsibility for investments and debt service. In return for assuming more of the risks the private operator has more autonomy than a management contractor, particularly control over working capital and all aspects of personnel management. A successfully implemented lease contract would establish a foundation for eventual private investment in water supply assets under a concession contract. States where the financial performance is improving, and rehabilitation is well under way, should be able to arrange a lease contract without an interim management contract.

5. BOO/T arrangements may be appropriate for some major investments, such as water production. However, interface between the BOO/T and the rest of the system needs to be properly defined. Large new production facilities cannot be recommended until distribution systems are in good order and well managed. Various forms of risk guarantee would be needed to help minimize costs to consumers under BOO/T arrangements. On the other hand, a full concession could be an appropriate model in few specific circumstances, where there is little existing water supply infrastructure (some strong level A states which are growing rapidly, or perhaps some very weak Level I states, where the government has no capacity at all and no option but to give complete responsibility to the private sector, as is already happening in many areas on a small scale). Risks are likely to be assessed by the private sector as being high, with a resulting impact on tariffs in such cases. As with a BOO/T, guarantees could reduce such perception of risk.

### **Appropriate Regulation to Support the Reform**

6. One of the most important pre-requisites to successful PSP is the existence of a legislative and regulatory framework to protect the potentially conflicting interests and rights of consumers, governments, operators and the environment. This is key to attracting serious private operators to the sector as it provides clarity to their roles and responsibilities. Some critical choices will need to be made to ensure that the most suitable regulatory model is in place. One of these involves the choice of regulation by contract or independent regulation. Other important factors affecting regulation which will need to be considered are:

- ◆ Issues to be regulated include tariffs, environmental protection, water resources, and aspects related to service standards and development
- ◆ To achieve economies and efficiency in regulation, choices regarding bundling either geographically (one regulatory entity for several states in a region) or sectorally (single regulatory entity for several different sectors, subsectors) need to be carefully made;
- ◆ Autonomy and independence of the regulator is key to success and gaining private sector confidence;

- ◆ As a general rule, independent regulation – rather than by contract – may be better suited to the common law system in Nigeria. Regulation by contract may be recommended only initially at the start of a contract, as an interim arrangement; and
- ◆ Regulation of telecom and power sectors are significantly different from the water sector and thus should be dealt with separately.

There is a clear need to study regulatory requirements in greater detail and obtain specialist advice on the most appropriate option.

**Table 7: WS&S Regulatory Guidelines for Nigeria**

<i>Issues</i>	<i>Rights</i>	<i>Level of Legislation Required For Regulation</i>	
		<i>Water</i>	<i>Environment</i>
Raw water (quantity)	Water balance, abstraction, environmental impact	Federal	Federal
Raw water (quality)	Treatment, environmental impact		Federal
Treated water quality	Treatment, customer service, health impact	Federal, State	
Customer levels of service	Pressures, continuity of service, problem resolution	State, Local	
Customer protection	Tariff, confidence	State	
Operator protection	Tariff, security of payment, confidence	State, Federal	
Water environment	Water balance, effluent waste control, flooding, river regime		Federal

**State Water Agency Performance Indicators**

(in preparation)

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