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PARTENARIAT EAU & ASSAINISSEMENT
EN AFRIQUE

WATER UTILITY PARTNERSHIP FOR
CAPACITY BUILDING IN AFRICA

Water Utilities Project No. 5

**Strengthening the Capacity of Water Utilities to Deliver Water and Sanitation Services,
Environmental Health and Hygiene to Low Income Communities.**

**Case Study for Kano (town), Nigeria
Context and Practices**



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ACRONYMS

ADP	Agricultural Development Project
CBO	Community Based Organisation
CRC	Convention on the Right of the Child
DEFFRI	Directorate of Food, Road and Rural Infrastructure
ESA	External Support Agency
FEPA	Federal Environmental Protection Agency
FMOH	Federal Ministry of Health
FMWH	Federal Ministry of Works and Housing
FMWR	Federal Ministry of Water Resource
FSP	Family Support Programme
GDP	Gross Domestic Product
KASEPPA	Kano State Environmental Planning and Protection Agency
KNSMOH	Kano State Ministry of Health
KNSMWR	Kano State Ministry of Water Resources
KNSWB	Kano State Water Board
LG	Local Government
LGA	Local Government Authority
NGO	Non-governmental Organisation
OMPADEC	Oil Producing Areas Development and Environmental Council
PTF	Petroleum Trust Fund
REDA	Refuse Disposal Agency
RUWASA	Rural Water and Sanitation Agency
SEPA	State Environmental Protection Agency
SWA	State Water Agency
SWA&SA	State Water Supply and Sanitation Agency
UNICEF	United Nations International Children's Emergency Funds (now simply called United Nations Children's Fund)
WASCO	Waste Disposal Company
WATSAN	Water and Sanitation
WRECA	Water Resources and Engineering Construction Agency
WUP	Water Utility Partnership

FRAMEWORK FOR CONTEXT

1. GENERAL INFORMATION TABLE ON NIGERIA

TABLE 1

Geographical location	West Africa between latitudes 4°N and 14°N and longitudes 3°E and 15°E meridian. Bordered by Gulf of Guinea, Niger Republic, Chad and Cameroon					
Area	913,073 km ²					
Population (1999)	Total=110,000,000 ¹	Urban 41%	Rural 59%			
Population growth rate	Average =2.83%, Urban = 3.5%, Rural = 2.1%					
Urbanisation ² (%)	10.6%(in 1953), 20%(in 1970), 38%(1993), 41.2%(1997)					
Largest City	Lagos (Metropolitan = 6.5 million) 6% of nations population					
Capital	Abuja (250,000 inhabitants)					
Number of Urban Centres ³ (population > 20,000)	410 (in the year 1997)					
Major cities with their metropolitan population	Onitsha (1.02 million), Kano (1.713 million), Kaduna(1.27 million), Ibadan (2.8 million), Portharcourt (1.31 million)					
Climate	Wet and dry season. Rainfall decreases from 4000mm for 10 months in a year in the southern coast to 650mm for 3 months in the extreme north. Temperature varies 25° C -35 ° C					
Political Structure	Federation of 36 States with 710 local government areas. Presidential system of government. There are three tiers of governments, Federal, State and Local governments					
Life Expectancy	52 years (1992)					
Incidence of Poverty (1999)	Living below poverty line = 67%, (only 30% of the poor and 5% of the extremely poor live in urban areas) ⁴					
	Year	1994	1995	1996	1997	1998
GDP (\$bn) ⁵		23.39	27.87	34.26	38.1	39.05
Real GDP growth rate (%)		1.3	2.1	3.4	3.2	2.36
Inflation rate (%)		57	73	29	8.5	10
External Debt Stock (\$bn)		29.4	32.58	28.0	27.08	28.7
External Debt as % of GDP		71.2	74.7	80.5	70.7	87.2
Overall trade balance (\$bn)		(1.9)	(2.77)	(0.76)	15.0	(2.87)
Gross Reserve (\$bn)		1.41	1.44	4.08	7.7	7.1
Naira Exchange rate to US\$			81.2	81.2	82	83.5
Population (in millions)		108.0	111.3	114.6	117.9	120.8
GDP per capita (\$)		217	250	299	270	250

¹ Source: The National Population Commission (NPC). However, the National Economic Intelligence estimates the population to be 120.8 million in 1998 as shown in the table below. The World Bank also adopts higher figure than NPC.

² Source: Restoring Urban Nigeria: World Bank Nigeria Publication
Challenges facing Water Supply and Sanitation Provision in Peri-urban Areas of Nigeria by Kabir Yari
(Secretary Nigerian Urban Forum)

³ Rural has less than 5,000 people, semi-urban > 5,000 and < 20,000 while urban > 20,000

⁴ African Development Bank (Nigerian Country Strategy Paper Seminar – February, 2000)

⁵ Source: National Economic Intelligence Report - 1999

2. NATIONAL LEVEL INFORMATION

2.1 LEGAL AND REGULATORY FRAMEWORK FOR WATER RESOURCES:

There are quite a number of legal and regulatory tools in the management of water resources in the country. They include:

- The Nigerian constitution places the control of water sources affecting more than one State within the Exclusive Legislative List; Laws that can only be made by the National Assembly. However, it did not specifically address WSS to the urban poor. The National assembly too has not passed any law on such water resources.
- The Water Resources Decree No. 101 which is the main control and guiding law in water resources vests rights and control of water sources affecting more than one State on the Federal Government. The decree aims at promoting the optimum planning, development and use of water resources; ensuring the co-ordination of activities likely to influence the quality, quantity, distribution, use and management of water; and ensuring the application of appropriate standards and techniques for the investigation, use, control, protection, management and administration of water resources. The Federal Minister in charge of water resources is given the power to exercise the said controls. Here too, no specific attention is given to WSS to the urban poor except that it ensures that water taken by individual for domestic use from source declared as belonging to the Federal Government are not charged and no permission is needed.
- The River Basin Development Authorities (Decree No. 35 of 1987) which divided the country into a number of drainage basins with each basin administered by a Basin Development Authority. The authority is established as a corporate body with perpetual succession and a common seal and which can sue and be sued in its corporate name. The function of the authority is to undertake both surface and underground water resources development for multipurpose uses with particular emphasis on the provision of irrigation infrastructure and the control of floods and erosion and for water-shed management. Other functions also include the construction, operation and maintenance of water retaining and control structures as well as exploration and extraction of groundwater. It also supplies water from its completed schemes to all users for a fee determined by the Authority and approved by the Minister.
- States Water Supply Edicts / Laws which empowered each State to establish a water supply agency to supply water for domestic, industrial and commercial uses. Most of the water supply agencies operate in mainly urban areas of their States. As at now, there is no Federal Legislation regulating the production and distribution of water supply for domestic, commercial and industrial use. The constitution is also silent on who is responsible for regulating and producing public water supply. The general understanding is that water supply is within the concurrent legislative list; which means that all the levels of the government (Federal, State and Local Governments) can make laws regarding water supply within their areas of jurisdiction. The Kano State Water Board edict has not made any special reference to supply of water to the urban poor.
- Local Government Water Laws (Bylaws) which define water supply to their communities as one of their primary functions have not specifically addressed the urban poor.

2..2 LEGAL AND REGULATORY FRAMEWORK - SANITATION AND HEALTH

The existing legal and regulatory framework for Sanitation and Health are be found in the following documents:

- The Constitution of Nigeria: which states that it is the duty of the local government councils to establish and maintain public conveniences (toilet, latrine, bathroom) and refuse disposal.
- The Federal Environmental Protection Agency (FEPA) Act of 1990 (as amended by Decree 59 of 1992), which established FEPA as a corporate entity responsible for protecting and developing the environment for sustainable development of Nigerian resources. The agency has the responsibility of establishing quality standards for air, noise and water (for the interstate water) to protect public health and welfare including establishing different water quality standards for different uses. The decree also requires the President of the country to encourage the State and Local Governments to establish their environmental protection agencies.
- The Environmental Impact Assessment Decree No. 86 of 1992 which makes it mandatory to undertake environmental impact assessment of any project and provide mitigation measures.⁶
- State Environmental Protection Agencies: Each State in the Federation has established its Environmental Protection Agency which it charges with the responsibility of implementing laws, regulations and issuing guidelines for the implementation of the environmental protection policies.
- Public Health Laws of Northern Nigeria, 1963: These are the laws provided under the old Northern Region Government (Kano State inclusive) to tackle sanitation issues. Kano State has reviewed the law to suit its current needs that brought about the Kano State Public Health Edict which stipulates the establishment of Health Officers and Inspectors and empowers them to inspect premises and enforce sanitary and health regulations.
- The draft Public Health Law (1998) of the Federal Republic of Nigeria. The law defines what constitute nuisance in premises and food, which include
 - a) any pool, ditch, gutter, water course, cesspool, drain, refuse, pit latrine, dustbin, washing place, well, water tank, barrel, sink, collection of sewerage, receptacle which contains stagnant water or other things in such a state or condition as to be injurious to health;
 - b) The health officer may at all reasonable hours, inspect any carcass, meat, poultry, game, fish, vegetables, cereal and other food including drinking water or provision exposed for sale or deposited in any place for the purpose of sale or preparation for sale and intended for human consumption, and if any of such food appears to the health officer to be diseased or unwholesome or unfit for human consumption, he may condemn the same and order it to be destroyed or so disposed of as to prevent it from being used for human consumption.

The law appoints the health officers to inspect the premises and food in order to enforce compliance and penalties.

⁶ Part III –Miscellaneous provisions of the decree, Section 13 items 3, 8, and 18

2.3 POLICY FRAMEWORK - WATER AND SANITATION

Nigeria has been developing quite a number of policy documents on water supply, sanitation and urban settlement. These include the draft National Water Supply Policy, the National Urban Development Policy, the National Policy for Environment and the National Urban Policy. Some of these policy documents are discussed below:

- **The National Urban Development Policy (1992):** This policy noted that the rate at which community infrastructure and social service are provided has not been commensurate with the population growth and urban expansion. The infrastructure problems include irregular water supply, unreliable energy supply, poor drainage, inefficient waste disposal, etc. It set its goal to ensure that all urban residents of Nigeria have access to adequate, efficient and affordable infrastructural facilities by the turn of the century. The Federal Government would work in collaboration with State and Local governments to ensure adequate supply and distribution of potable water. FEPA, working with the State counterparts would minimize pollution. With regards to waste management, the Government would ensure that all urban communities adopt sanitary methods of waste collection, treatment and disposal⁷. Unfortunately, these set goals have not been achieved. In fact, the situation is reported to have deteriorated with the poverty level increasing and access to potable water and safe sanitation declining rapidly.
- **The National Water Supply Policy:** The center-piece of the policy is the provision of potable water in sufficient quantity to all by the year 2015 which is to be achieved through improvement of the present inadequate level of services to cover 50% of the population by the year 2000 and 80% by the year 2010 and to all by the year 2015. It will raise the per capita service level to 120 litres for urban areas. The policy will also promote community and private sector and NGO participation and supplement the National health care programs of the Nation. The instruments for the operation of the policy shall be the various Federal, State, and Local Government laws and bye-laws establishing the River Basin Development Authorities, State and Local Government Water Agencies and their respective water supply regulations and water quantity standards. If this policy is successfully implemented, the major problem facing the urban poor with regards to water supply would be surmounted.
- **UNICEF policy in the context of the Convention on the Rights of the Child (CRC):** UNICEF has developed Master Plan of Operation (Country Programme of Co-operation – Nigeria for the period 1997 – 2001). It covers Water and Environmental Sanitation programmes with focus on community participation in planning, operation and maintenance of water and sanitation facilities. Its program of action is to work with the Government to achieve universal access to safe drinking water and safe human waste disposal by the year 2000. Its country programme goals and objectives include catalysing, expansion on basic social services in a sustainable way to reach the least developed and most underserved areas. However, the blue print has not addressed the water and sanitation problems of the urban poor.

⁷ Chapter 10: Urban Infrastructure within the Framework of an Urban Development Policy

Source: Federal Government of Nigeria and UNICEF Master Plan of Operation Country Programme of Co-operation, 1997 – 2001.

This study has not come across any specific stand-alone programme or policy designed specifically to address water and sanitation problems of the urban poor. Nonetheless, the Government activities continue to impact on the improvement of the services to the urban poor through projects which address urban centres like water supply and health. Furthermore, discussions with some General Managers of the States Water Boards (including Kano) confirmed the following practices though not supported by any written policy.

- Water supply is widely considered more as a social good than as an economic good.
- In urban areas, public taps are provided where the poor can get water free of charge (The water utilities charge the State Governments or Local Authorities for the supply which are hardly ever settled. This led the utilities to start leasing the taps to vendors).
- State governments approved subsidies and cross subsidies in water tariffs to ensure that the charges are affordable to all the consumers. However, the intended subsidies sometimes ended up providing free or cheap water to those who can afford to pay higher prices.
- Authorities believed that raising water rates or charging for it where it has historically been free would hurt the poor or be "unfair" to them and could even lead to serious objection or social unrest. Consequently, there is reluctance to increase water rates, with the result that the water supply agencies suffered excessive financial losses. Against this background, the water supply delivery continues to deteriorate more especially in the urban poor and peri-urban areas.
- Finally, private sector participation in water supply and sanitation is allowed to exist in a very localized extent as will be seen in the case study to follow. The major ones are small private commercial water supply systems, water vending and hawking, public private commercial toilet and refuse collection and disposal outfits.

2.4 INSTITUTIONAL ARRANGEMENTS

There are institutions at the Federal, State and Local Government levels that are involved in water supply to urban areas.

2.4.1 Federal Level

- i.) The Federal Ministry of Water Resources and Rural Development (FNWR&RD) is responsible for policy advise and formulation, establishing and operation of the National Water Quality Reference Centre, and provision of technical support to the water supply agencies. It is also involved in assisting the water agencies to rehabilitate and improve water supply infrastructures. Under the Ministry, there are two parastatals, namely the River Basin Development Authorities which are responsible for establishing and supply of bulk water amongst other things and the National Water Resources Institute which is responsible for manpower development and research in the water supply sector. So far the Ministry has no stand-alone programme to address the water supply problem for the urban poor.
- ii.) The Petroleum Trust Fund (PTF): It is established by a decree which enabled it to collect part of the money from refined petroleum products sold locally and utilize it

to undertake some developmental projects especially related to the rehabilitation of the nations decaying infrastructures. In the water supply sector in urban areas, it provided counterpart funds for World Bank and African Development Bank projects in six major cities in the country and constructed at least 20 community water projects (both urban and rural) in each State of the Federation. One of the projects is examined in one of the case studies presented in this report.

- iii.) Federal Environmental Protection Agency (FEPA): It is established by Decree No. 59 of 1992 and charged with the responsibility of protecting and developing of the environment and bio-diversity conservation and sustainable development of Nigeria's natural resources in general and environmental technology. It contributes by ensuring that the water source is not polluted by industrial and related wastes.
- iv.) Other Federal Agencies : These include Oil Mineral Producing Area Development and Environment Council (OMPADEC);, Family Support Program (FSP), Federal Ministry of Health (FMOH), and the Federal Ministry of Works and Housing. All these organisations are said to have carried out water supply projects in low income urban areas but statistics on their actual performance is not available.

2.4.2 State Level: The States have Ministries of Water Resources and State Water Agencies. In most cases, the Water Agency (Board or Corporation) is established as a parastatal supervised by the Ministry.

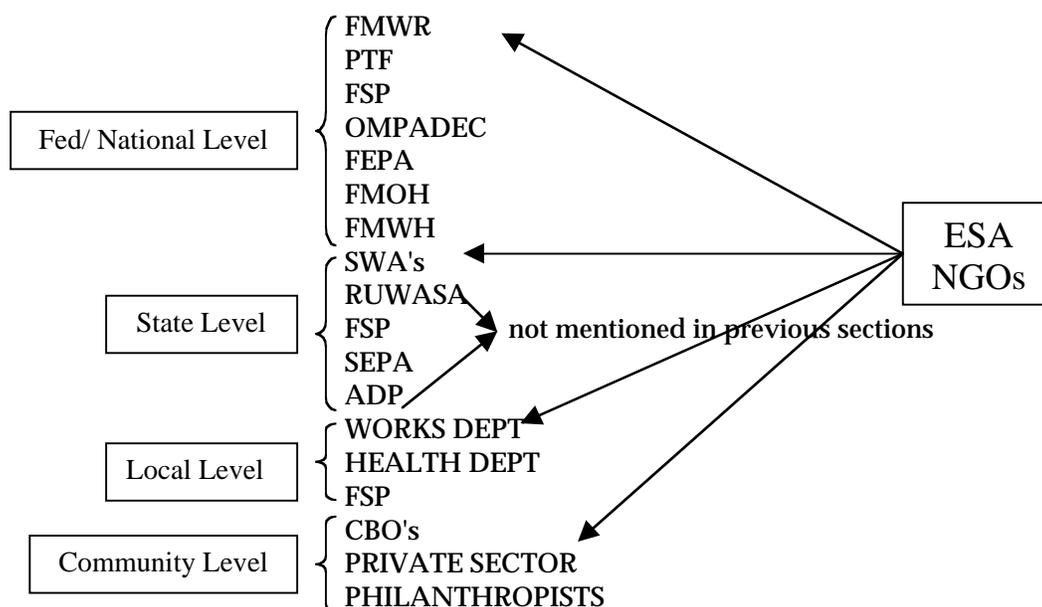
- i.) State Water Supply Agencies: Each State government has established a water supply agency which is responsible for the establishment, operation, quality control and running of the urban and semi-urban water supply (and sanitation in some States). Some are called Water Boards or Corporations while others are called Public Utilities Board. All of them are owned and funded by the State Governments. These agencies have provided public taps in low-income urban areas. In some states, the water is free while in others public taps are let out to vendors who sell water to the individuals in the communities.
- ii.) State Ministries of Water Resources and Rural Development: Each State has this ministry which is responsible for rural water supply, irrigation, policy advice and formulation, and overseeing the activities of the State Water Agencies. In some States, the ministry coordinates the public tap water supply and liase with the Government for payment of the bills to the State water agency.
- iii.) All the States have other Agricultural Development Projects (ADP) which does some water and road projects to complement and accelerates agricultural development.
- iv.) Most of the States have Rural Water supply and sanitation Agencies too.
- v.) Recently, all the States have established Ministry of Environment.

2.4.3 Local Government (LG) Level: Each State is divided into some scores of local governments. (Metropolitan Kano has 6 local government areas) Each local government is headed by an elected Chairman who is assisted by 4 to 6 elected council members. The local government has few departments (Works, Heath, Education, etc). The Works Department is responsible for establishing small water schemes mainly using wells and boreholes. The Health Department takes care of health and sanitation issue under the local government jurisdiction. Most of the public wells in urban and rural areas are provided by the local government. These wells remain the main source of the public water supply where Utility water distribution system does not reach or exist.

2.4.4 Community: At this level there are the CBOs, Private Sector and Philanthropists. Their impact is considerably big in some cities like Kano where they remain the predominant water suppliers in areas where the utility system cannot reach. Statistics are not available on the coverage of their activities.

2.4.5 Country Level Organisations: UNICEF, UNDP, JICA, Global 2000, ESA and NGOs: These organisation are yet to undertake a stand-alone programme to address the urban poor water supply and sanitation. However, they have participated in projects which influence or even affected services to the urban poor. Here too statistics are not available.

Institutional Arrangement is as follows



2.5 FINANCIAL ARRANGEMENTS

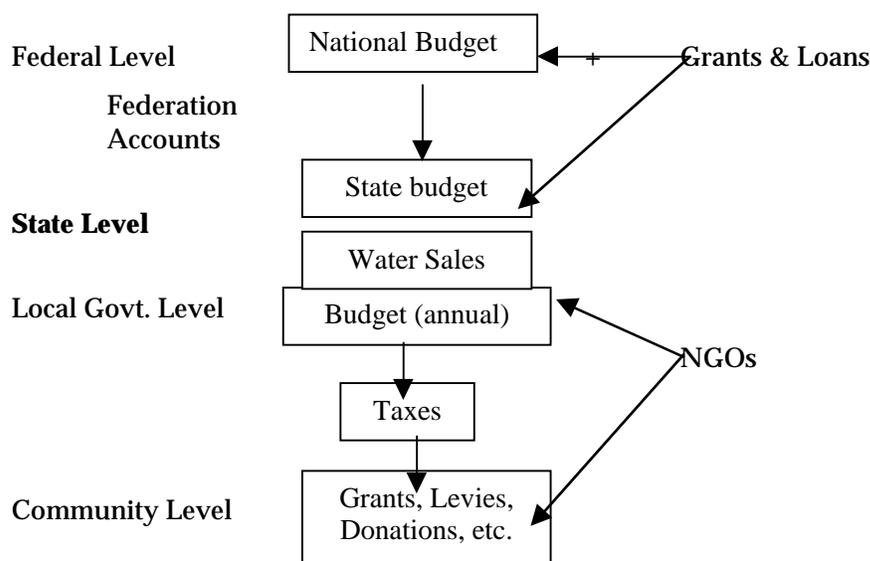
Governments at Federal, State and Local Council levels provide money for investment either through budget or loans. Loans obtained from World Bank, and ADB are usually given to the State Government with Federal Government guarantee. In most cases disbursements are made by direct payment to the contractors for work executed on request from the executing agencies. Works financed by the Government are usually supervised and paid by the supervising Government Ministry. There is no separate budget of funding specifically for low-income water supply so far.

There are some donor agencies through bilateral cooperation and international organization who also finance the sectors. In most cases, States are usually asked to provide counterpart funds. In some cases, the Federal Government assists in project counterpart funding.

At the Moment, there is no cost sharing agreement between the Federal, State and Local governments, the community and the utilities. Each finances the supply independently. Cost sharing arrangements are only now being proposed for rural and semi-urban water supply.

Generally, there is no substantial cost recovery in water supply because the tariffs are inadequate and operational efficiency is very low. Instead, the utilities receive subvention for operation and maintenance. Some utilities have recently shown considerable improvement in commercialising their water supply to the extent that they can cover considerable part of their cash operational costs.

The financial arrangement is summarized in the flowchart as follows:



2.6 TECHNOLOGY CHOICE:

Due to the lack of a Master plan and National standards, water utilities could not give adequate specification of what kind of equipment and appropriate technology they require. They depend on foreign consultants and suppliers to recommend the equipment. Issues in relation to for example; National Water supply Guidelines and Standards, Appropriate Technology, Quality of Supply and Standardization of Equipment are yet to receive attention. One can say that there are currently no national standards or guidelines for the water supply sub-sector. The technology available for the low-income group in Nigeria and in peri-urban Kano in particular are Motorized boreholes (boreholes, elevator tanks, genset/ solar and standpipes), Hand-pumps, Hand-dug wells(open or covered) and Rain water harvesting and pit latrines.

2.7 URBAN ENVIRONMENTAL AND SANITATION CONDITION:

2.7.1 General: The rapid urban growth in Nigeria is making rapid harmful effect in surrounding eco-systems at alarming rate. Both industrial and domestic wastes in most of the cities are dumped or discharged untreated into open gutters, drains and streams. This has rendered surface and shallow sub-surface waters around the urban areas unsafe for human, agricultural and recreational use. A part from the new Federal City – Abuja and some small isolated areas of Lagos, there is no central sewerage systems in any town in the country. Even in cities well-to-do area, the commonest domestic waste treatment method is the use of individual septic tanks and soak-away systems.

2.7.2 Sanitation in Low-income Urban Areas: The major problems are due to sillage, blockage of drainage channels, solid waste menace (e.g. polythene and plastic wastes), widespread use of pit latrine, indiscriminate disposal of excreta in open spaces with its health hazards, pollution of water source by wastes from pit latrines, industrial waste pollution and unorganized solid waste disposal. Dumps of waste and household refuse and sometimes even carcass of dead animals are common eyesore. The collection and disposal of solid waste is neglected due to high operational cost of the collection machinery and the fact that no revenue is collected from the producers. The unplanned nature of the low-income urban settlements has brought about the existence of narrow access roads whereby in many cases meandering open gutters are squeezed between rows of houses, thereby obstructing passageways for vehicles and pedestrians. These gutters, which are mainly dug by house owners, are generally unlined without proper slopes and in many cases are serving as combined sewers for storm water, kitchen and bathroom effluents. Due to lack of proper design, the water being discharged into them from individual compounds become virtually stagnant, thereby providing breeding places for mosquitoes.

In their efforts to reduce the menace of such refuse dumps, various State Governments appointed Task Forces on Environmental Sanitation who utilize equipment from various Government and private organizations to remove and dispose off such refuse dumps on monthly basis. In this case Community Self Help Groups assist the Task Force with the manual labour required. Although this method to some extent reduces the menace, but the interval of one month between each operation is too long for the low-income urban settlements to feel the impact of the exercise. Settlements on the high grounds have more erosion than drainage problems. The arbitrarily sized gutters suffer high (scouring) velocities from storm water run off, thereby becoming eroded to the extent of undermining building foundations and destroying road-ways.

The inhabitants of low-income peri-urban areas mostly live in rented compounds where co-operation between the various tenants is lacking. Therefore, a lot of effort is required to bring the tenants together for communal activities to sanitize their environment. Most of the inhabitants are immigrants without permanent accommodations and therefore lack toilet facilities. Government owned public conveniences are lacking and the commercially operated ones that are built by private individuals are few, thereby not meeting the demand. Due to water scarcity, pit latrines are predominant in the low-income areas, the evacuation of which is being undertaken by private operators, while the dumping ground is controlled by the Local Government Health Departments.

2.8 URBAN WATER SUPPLY CONDITION

2.8.1 Water Supply Historical Background: In spite of the availability of ample water resources in Nigeria, the supply of potable water to the majority of the population, especially in the urban slums, peri-urban and rural areas is very much inadequate. Today less than 50% of the population have access to potable water supply and majority of these people are those living in urban and semi-urban areas. Various traditional means of obtaining water have been developed by individuals and communities for many centuries. The commonest and oldest is the use of hand-dug wells and collecting water direct from streams and ponds. In the case of hand dug wells, the water is usually lifted up from the wells in a container tied to the end of a rope and manually lifted up to surface. The water

is usually brought to the households in containers by women and/or children. To-date these systems are the commonest among the city slums and peri-urban areas. Water vendors who carry water from these sources have been in existence in old cities like Kano prior to colonial era.

The history of organised supply of pipe-borne water in Nigeria can be traced to the colonial era (1900 to 1960) when many small water supply schemes were established to provide water to Government residential areas. At that time the responsibility for operation and maintenance of these facilities were in the hands of the native authority (and later Regional) public works departments. Eventually, water supply divisions were created to look after the system by the time of independence. It was only in the seventies that various state Governments started to create Water Supply Agencies that are purely charged with the responsibility of providing water supply to urban, semi-urban and in some cases rural areas.

2.8.2 Water Supply Problems in Low Income Areas: Piped water supply is generally scarce or totally non-existent in most low income urban areas due to a number of reasons which include insufficient government attention, unplanned nature of the settlements, lack of accurate record of consumers, inaccessibility for pipe laying, inadequacy of the pipeline (where it is available), the households being too poor to afford pipe line extension and house connection, inadequate funds from government to provide water supply extension to the area and lack of community efforts.

2.8.3 Meeting Minimum Water Requirement of Low Income Areas: Where water supply mains are available in low income urban areas, the governments provided public stand pipes at strategic locations for free water supply to those who cannot afford house connection. The utilities charge the governments for the public water supply but the bills are hardly ever settled in most states. Although in most cases women and children are the ones that carry water to the household, water “hawkers” are also actively involved at prices negotiated between them and the household owners. Nowadays, due to the failure of governments to settle the bills for public taps water consumption and the increasing pressure on the water utilities to recover operational costs, the provision of free public water points is rapidly diminishing.

In some low-income area where there is erratic piped water supply or none at all, a more permanent source of water is the open well dug by individual household owners. These are usually not well protected from external pollution and commonly dry up during the long dry seasons. The local governments also provide deeper concrete lined open wells which are more reliable. These too dry up during some longer dry seasons. Both the State and Federal Government provided some bore-holes and handpumps in certain communities, but these are far fetched and rare and have mostly broken down due to poor management. Consequently, philanthropic organisations and well-to-do individuals and private borehole operators came into play by providing boreholes fitted with pumps. Water vendors and hawkers also play a major role by distributing water either on carts, donkeys and even vehicles for sales to the households. In Kano state, for example, public water points are leased to vendors who pay the Authority for the water supplied to such taps on monthly basis and subsequently charge the consumers N5.00 to N10.00 Naira per 20 litre Jerry can delivered to the household premises.

All these help to meet the water requirement of the low-income communities.

CITY CONTEXT (KANO METROPOLITAN)

3. CASE STUDY CITY (KANO) CONTEXT

3.1 KANO METROPOLITAN GENERAL INFORMATION

Kano used to be the name of the pre-colonial walled city founded over 1000 years ago. Now there is Kano State, which is one of the 36 States of Nigeria. The state has an area of 20,700 km² with a total population of about 7.0 million. The State is divided into 44 local government areas. The present metropolitan Kano (locally referred as ‘Greater Kano’) is the capital of the State. The old walled Kano, now called Kano City, is located at the centre of Kano metropolitan. Kano metropolitan consists of 6 local government areas called Dala, Gwale, Kano Municipal, Fagge, Nasarawa and Taurani). There are hardly any pronounced physical boundaries between the local government areas.

TABLE 2 : CITY INFORMATION TABLE

S/ N	ITEM	KEY DATA
	Population of Urban & Peri – Urban	1,849,000 ⁹
2	% Population in Urban areas ¹⁰	50%
3	% Pop. in Low-income areas	50%
4	Types/ characteristics and number of in formal settlements	The quarters (traditionally called Anguwa) and compounds ¹¹ are unplanned both in layout and construction. Characteristics of low-income settlements are poor water supply, poor sanitary conditions/ facilities, restricted access and congestion of buildings. These form nearly 50% of Kano city. Densely populated in an unplanned settlements (with just about 20% layouts). Within the old city, the rooms within the houses have mud wall and roofs. Settlement came before present town planning system and are legal. In the peri-urban , the buildings are of varied shapes and sizes and mostly informal and “ illegal”
5	Community structures–formal and informal	In the low-income areas of the old city, the settlement is homogenous with members coming from more or less the same lineage and the settlement is accepted as formal. In the peri-urban, the people come from different places and cultures.
6	Agencies responsible for provision of water supply services in Kano	KNSWB, KNSR & UWS &SA, KNSEP & PA, WRECA, KNSMWR, LGAs. Philanthropic Organisations ¹²

⁹ Source: National Population Commission: However, a recently completed Master Plan for the KNSWB adopts a population of 1,927,000 for the six local government areas comprising Kano Metropolitan and 2,352,000 when two other neighbouring local government areas Ungogo and Kunbotso) are included

¹⁰ . Source: A discussion with an official of the MOH, the settlements in Municipal/Tarauni, Dala/Gwale and Nassarawa/Gwale LGAs have 60%, 50% and 40% low-income settlements respectively.

¹¹ Compound is a fenced or walled household in which a number of families usually from the same lineage live together, each family have a section with rooms. Quarters are collection of these compound usually under a traditional leader called Maianguwa.

¹²(Dangote Foundation, ASAH Transport Company and Tahir Organisation and Kano State Association of Water Selling Vendors.

S/ N	ITEM	KEY DATA			
7	Access to water in low income areas (type and coverage- house hold connections, yard taps, wells, public taps etc.	Types: Motorised boreholes (boreholes, elevator tanks, genset/solar, stand pipes), Hand-pumps, Hand-dug wells (open and covered) and Rain harvesting are found in the areas. Coverage: Poor or non-existing direct access to utility service (10-20%). Served mainly by vendors/ hawkers (about 15% during rainy season and 60% in dry season) and private hand-dug (60% during rainy season), which are often polluted. Open concrete wells or Hand-pumps are provided for public use by government or NGOs. In some cases, rainwater, harvesting, spring/ streams/ ponds are used.			
8	Agencies responsible for provision of sanitation services in Kano	For Sanitation ¹³ : KNSMOH, 6 LGA Health Depts., KASEPA, WASCO and 10 Private Waste Collection Companies. RUWAS, FMOH, UNICEF and NGOs.			
9	Access to sanitation in low-income areas (type and coverage)	Types: Pit latrines(80 –90%), Pour Flush, VIP latrines(3%), Sanplats and Bush (no facility). The problems are sewage, poor drainage, solid waste menace of polythene and plastics, etc. & industrial waste pollution especially from tanneries. Coverage: Kano Municipal ¹⁴ & Tarauni LGAs (lowest density population) have the highest low-income settlements and consequently with 60% without satisfactory sanitation coverage. Dala & Gwale LGAs (medium density population) have about 50% without satisfactory sanitation coverage. While, Nassarawa & Fagge LGAs (highest density population) have about 40% without adequate sanitation coverage.			
10	Cholera/ other water borne and sanitation related disease incidences (number of outbreaks in past year.	S/ N	Water Related Diseases	Reported & Recorded Outbreaks 1996/97 ¹⁵	
				No. of Cases	No. of Deaths
		1	Cholera	5,000	400
		2	Gastroenteritis	136,348	2,773
		4	Typhoid	9,081	92

3.2 SETTLEMENT TOPOLOGY - KANO

Kano Town has temperatures normally ranging from 36°C to 16°C. It is located within the Sahel Savannah which is semi-arid. The city is predominantly peopled by Hausa and Fulani ethnic groups who are mostly Muslims. Other tribes like Yoruba and Ibos have also settled in the town

Settlement Topology and Pattern: Kano has also experienced uncontrolled population growth within the old city and massive migration from both the surrounding rural areas and other parts of the country in search of jobs and better social amenities. The commonest low-income areas in Kano are those in the old city and the peri-urban areas.

¹³Kano State Ministry of Health, 6 Kano LGAs Health Departments, KASEPA (Kano State Environmental Planning Authority), WASCO (Waste Disposal company) and 10 Private Waste Collection Companies. Other providing some assistance are RUWAS at the Health Education Unit, Federal Ministry of Health, UNICEF Zonal Office at Bauchi and NGOs such as Global 2000 and CD Associations.

¹⁴ Kano Municipal is the name of one of the local government areas within metropolitan Kano

¹⁵ Source: Epidemiological Unit, Kano State Ministry of Health.

- ◆ **Low Income Areas in the Old City:** These are the traditional unplanned densely populated areas, which have grown from the old houses that were in existence even before the colonisation of Nigeria by the British. It is estimated that over 30% of the population live here. Since they were built before the establishment of town planning authority, these settlements are congested with hardly any access for providing them with modern infrastructures like roads, water supply, good drains, electricity and telephone. Even though these houses have no land tenure or formal certificate of occupancy, they are recognised, respected and accepted as legal. Land is inherited from father to son based on Islamic inheritance laws. Where public water supply pipeline reaches, one finds that a single household connection could be illegally extended to few other households, through a hidden backyard connection. This has contributed a lot to inadequate public water supply in these places. The Water Board claims that the revenue generated from water supply to these areas does not even cover the corresponding expenses on the billing costs. Here, large walled rectangular compounds are divided into smaller houses usually housing a number of households who are from the same lineage. It is not uncommon to find one house divided into five households, each having and taking care of its family separately. Here, flat-roofed box-like mud houses with thick walls are the common type of houses, the roof being made of timber covered with mud. Actually, the buildings reflect the architectural traditions of Sahara. There is also emotional attachment to one's house which sometimes even leads to internal dispute especially with the increasing population and unwillingness to let go what belongs to great grand parents.

- ◆ **Low Income Peri-urban Areas:** These are considered as living "illegally" with no legal tenure and could be ejected by the authorities with little or no compensation. It is estimated that up to 20% of the population live here. Most of these communities are immigrants from either the rural areas of the State or other parts of the country. Over the years, these areas have become densely populated and because the authority does not recognise the settlements as formal, they usually lack well-planned infrastructures like roads, water supply and electricity. Where government tried to provide these services, poor management of the services and infrastructure are common and vandalising of public services is rampant. Services available here include public boreholes and wells, household wells, and water hawkers. In some areas, utility water system is available but most of the time there was no water either due to inadequate distribution pipe or inadequate supply. Household latrines are common.

Because of rapid population growth, the gap between effective demand and supply of urban houses widens. Acceptance of sub-standard housing has now become the order of the day and overcrowding is common. In these congested areas, it is not uncommon to see 4 or 5 people per room.

4. UTILITY AND OTHER PROVIDERS OF SERVICES IN LOW-INCOME AREAS

The providers of water supply services in the low-income areas are:

- 4.1 Kano State Water Board: The Water Board was formally created by Kano State Edict No. 3 of 1993 with retrospective effect from 2 October, 1990. The functions of the Board include treatment, distribution and sale of water and public enlightenment on water conservation. It is also empowered to purchase water and resale to consumers. It operates a tariff system which seeks to emphasize on cross subsidies to make water affordable to all the consumers. It also provides public stand taps initially free to the poor but now leases the taps to vendors who in turn sell the water to individuals and water hawkers. The strengths and opportunities of the utility (KNSWB) include strong backing by law and government support, good institutional framework, trained qualified manpower and close relation with community based organization. The opportunities include the existence of water market, skilled management, cost recovery and reliability of service. Its weaknesses and threats include lack of autonomy, inadequate funding, poor attitude to work, poor motivation and remuneration, inconsistencies in government policies, corruption and frequent electricity power failures.
- 4.2 Water Vendors and Hawkers: The water board leases the public stand pipes to water vendors who in turn charge the consumers N1.00 - N1.50 per a 20 litre container. There are currently over 1200 public taps leased to vendors. Hawkers are those who buy water from the vendors or other sources and deliver water to household. They charge from N3.00 to N7.00 per 20 litre containers (usually plastic containers locally called Jerry cans). The vendors are registered with the Water Board and have a strong association. Their strengths and opportunities lie on the use of simple and cheap equipment, ability to mobilise easily, co-operation with the water board, legal recognition and water shortage in houses. Their threats and weakness include lack of environmental planning, inadequate water source, lack of understanding of their role by the government, lack of legislation and standard water tariff, poor accessibility and lack of immediate response by the utility to report of water shortage at their water source.
- 4.3 Private Water Supply Operators: These usually produce water (usually from boreholes equipped with electric submersible pumps) and sell to water hawkers and individuals at the water source site. Their strength lies on their proper co-ordination, and control, availability of financing, easy access to relevant skills, higher operation efficiency compared to state utilities. The opportunities are public relations campaign and trade association to standardise practices. The weaknesses include inadequate quality control, unorganised or multiple government taxes, lack of legal backing for operation, inadequate sanitation and hygiene, lack of continuity of business and inconsistent government policies.
- 4.4 Public Toilets Managed by Private Individuals: There are several toilets built by private individuals in public places like markets and motor parks where people pay to use the service (See details in the case study). Their strengths and opportunity include improvement of sanitation, affordable charges, simple and cost effective, income generating to the owners and government, participation of local authorities and private sector involvement. The weaknesses and threats is that there are few available facilities, lack of awareness of the existing facilities, cultural difference among users, Non-involvement of beneficiary communities,

over population, limited access to women, lack of water and inadequate cesspit services.

- 4.5 Community Based Organizations (CBOs): The major strengths here are the good knowledge of the community, healthy competition among various CBOs, political influence and skill mobility. The opportunities are the existence of the government agencies, private organizations, contractors, religious leaders, NGOs and political influence. Their weaknesses and threats are lack of co-operation between CBO members and between them and the community, lack of knowledge to make decisions, lack legal backing and lack of skilled manpower, exclusion of women in decision making, corruption and mobility of skill.

5 UTILITY PERFORMANCE - KANO STATE WATER BOARD (KnSWB):

5.1 Origin and Formation: Before the creation of Kano State in 1967, public water supply was undertaken by the then Kano Native Authority (NA) which was established by the colonial administration. When the State was created, the responsibility of water resources development was vested in the then Ministry of Works and Survey which created a Water Division. In 1975, the Kano State Government created a water resources development agency called "Water Resources and Engineering Construction Agency" (WRECA), whose functions were to undertake water resources research and development as well as water supply in the State. WRECA constructed over 90% of the water resources infrastructures of Kano State. In 1990, WRECA was broken into three bodies; namely, Kano State Ministry of Water Resources, Kano State Water Board and the newly reconstituted WRECA. The reconstituted WRECA handles the developmental and constructional aspect of water resources. The Water Board is responsible for water supply in urban and semi-urban areas while the Ministry is responsible for the water resources control and development, and rural development. The Ministry also supervises the Water Board.

The edict creating the Water Board transferred all waterworks constructed by or vested in WRECA to the Board. Currently, the Board has over 18 Water Works with a total installed production capacity of over 210 million litres per day serving Kano town and 12 other towns.

5.2 Performance: The KNSWB does not have enough resources or infrastructure to meet the water demand of its consumers. It is estimated that only 60% of the water demand of Kano is met by the board. In 1995, the Board reported that 49 areas of Kano had adequate water, 16 areas had water supply mainly at night, 6 had intermittent supply, 6 had supplies only at weekends, 12 others were without water.¹⁶

The water board has undergone a lot of management reforms recently with the aim of improving its water sells to enhance its financial autonomy. Currently, the State Government finances all the capital expansion programs and subsidizes the operation through purchase of chemicals. The board is able to pay its salary, greater part of its electricity bills and other maintenance expenses. Below is the operational performance of the Board

	Year	1997	1998
	<u>Customers</u>		
	Number of Domestic Customers (connections)	59,271	61,868

¹⁶ Source: Kano State Water Board Progress Report, January – June, 1995

Number of Registered Commercial / Industrial Customers	524	699
Number of Metered Customers	1%	1%
<u>Water Supply</u>		
Total average daily supply (m ³ /day)	113,700	116,520
% of people served by water network- Kano metropolis	55%	50%
% Served by the Water Supply	60%	62%
<u>Cost of Operation</u>		
Production cost per 1000 litres (Cubic meter) – Naira	10.00*	12.00
Operation cost per water connection	7,232	
<u>Infrastructure</u>		
Total length of Mains (diameter 100 – 1000mm)- Km	470	500
Total volume of Storage Capacity (cubic meters)		
Number of Systems	18	18
Total installed capacity of systems (m ³ /day)	210	210
<u>Manpower</u>		
Number of employees	1,500	870
Number of staff per 1000 connections	25	14
<u>Water Supply</u>		
Average hours of available water	16	16
Number of complaints received during the year	860	720
Average daily volume of underground water produced	NA	NA
Average daily volume of surface water produced (million litres)	114	116
<u>Customers</u>		
Number of meters installed to previously assessed customers	46	65
Number of registered customers	62,5492	65,456

* Total production and distribution cost = N428.7 million, annual production = 41.5 million m³

NA = Data not available.

5.3 UTILITY REGULATIONS:

The KNSWB's powers and limitation are provided by Kano State Water Board Edict No.3 of 1993. This edict established the board and gave it power to produce and distribute water and to exercise control over other water suppliers in the State. The edict makes it an offence for any person to construct any water works or well exceeding 1.5 meters diameter and a depth exceeding 60 meters, or any borehole or well within any urban area except in accordance with the written approval of the Board.

6. POLICY AND STRATEGY OF THE UTILITY SERVING THE POOR

1.1 The policy and strategy of the utility (KNSWB) for serving the people in general are guided by the Edict Establishing it, resolutions of its Board of Directors, State Government circulars issued from time to time and advise and directives issued by

the supervising Ministry. These also determine its policy on water supply to the urban poor. Currently, the board has no corporate plan but operates an annual budget approved by the State Government.

- 1.2 The Board has two strategies for serving the poor. Initially it provided public standpipes in the areas and the communities collect water free of charge. The water board used to send the bills to government. However, government has not been paying and the board now leases the standpipes to vendors who in turn sell water to consumers at the rate of N1.00 per 20 litres (N50.00 per cubic meter). The second approach was the application of cross subsidies so that industries and commercial consumers are charged higher than domestic consumers. Similarly, houses with water reticulation are charged flat higher rate than those with single standpipe in the household. Below are the charges:

Metered Charges		
		Naira/m3
1	Industrial consumers (rate increases with the increase of monthly volume consumed)	60.00 - 100.00
2	Commercial consumers (rate increases with the increase of monthly volume consumed)	15.00 - 25.00
3	Private Institution	15.00
4	Public (government) Institutions	10.00
Domestic Flat rate charges		
1	Houses with single taps (single family)	300.00 / month
2	Houses with single taps (multiple families)	400.00 / month
3	Houses with water system reticulation	500.00 / month
4	Special Compounds (high cost residential areas)	1,500 - 5,000

7 COST RECOVERY:

Due to both low level of awareness and income of the low-income communities, payment for utilities' services are not easily forthcoming. Because most of these communities believe that utilities' services from government should be free, there is a general apathy in paying for the services. This is manifested by illegal water connections, cheating and false declaration of water connection. Where public water supply pipeline reaches, one finds that a single household connection could be illegally extended to few other households, through a hidden backyard connection. This has contributed a lot to inadequate public water supply in these places. The water board claims that the revenues generated from water sales to these areas do not even cover the corresponding expenses on bill distribution and revenue collection. For a utility like KNSWB that is now under pressure to recover costs, there is less motivation in investing to improve water in these areas than elsewhere.

Prior to 1992, water supply to the public taps was free. Later when cost recovery was given more emphasis, the board started billing the local governments for the public taps consumption in their respective areas. By 1995, it was clear that the local governments were not settling the bills. The board therefore engaged vendors to take charge of the public taps and sell water to the consumers.



8 WATER MARKET AND SANITATION SERVICES

The low-income communities meet their water and sanitation requirements through various means. Table 3 gives the various means of meeting this demand in Kano.

TABLE 3: WATER MARKET

Delivery System	Provider	Source	Price/ m3 & Payment System	Cost/ m3 to the Provider	Comment
Dug wells in households	Household owners	Household	Nil	No data available	Shallow and mostly dry up during dry season. Usually not safe.
Community lined concrete wells	Local Authority	Within the community	Nil	No data available	Fairly deeper, but dry up during some long dry seasons. Not many available
Boreholes with handpumps	Local, State and Fed. Governments	Community	Nil	No data available	All the three tiers of government have continued to provide this system without adequate community participation or arrangement for sustainability. UNICEF, UNDP and PTF now involve the communities.
Public Stand posts	Utility	Utility systems	Free	N12.00	Traditionally free, later local and State governments agreed to pay but the payment is not forthcoming
Water selling points and kiosks	Utility	Utility System	N1.00 per 20 litres (N50.00 per m3), Cash to the vendor	N10.00	This was introduced due to the reluctance of payment by government and the pressure on utilities to recover costs

Delivery System	Provider	Source	Price/ m3 & Payment System	Cost/ m3 to the Provider	Comment
Privately owned borehole based systems	Private individuals	Private	N1.00 or N1.50 sold to hawkers and individual	Not disclosed by the owners	Price depends on the electricity source. It is N1.00 when run from national grid and N1.50 when run from owners generator.
Hawkers	Individuals or organized group.	Utility or Private systems	N5.00 to N7.00 per 20 litres jerricans. Cash payment to the hawker	Nil or N1.00 or N1.40 Depends on the source	The hawkers collect water in 20 litres jerricans (some time load as many as 16 jerricans in a cart) from community wells - where they pay nothing, or water selling kiosk where they pay N1.00 per jerrican or from private commercial borehole where they pay 1.00 or 1.50 per jerrican.
Household with single tap.	Utility	Utility	N150 per month to the Utility upon receipt of a bill	N10.00	Where utility water exists, some households are able to connect the household with the utility supply system.

NOTE: See Table 2 of the level of use of the systems.

9 CONSUMER LEVEL

During the project launching workshop, the participants carried out problems analysis on the provision of water and sanitation in low-income areas and the following problems were identified:

- **Access to Services:** There is very poor service coverage by water supply agencies, poor drainage and refuse disposal, inaccessibility of the areas due to lack of roads.
- **Financial, Human and other Resources:** The problems include lack of basic infrastructure, funding and qualified personnel from government, Poor income leading to inability to pay for services and lack of understanding of what is needed for service sustenance.
- **Legal and Policy:** There is lack of specific policy framework to address the problem of peri-urban areas such as settlement issues, lack of implementation and enforcement of sanitation laws and regulation leading to poor refuse disposal and building of illegal structures on pipe lines and drains. There is also unwillingness on the part of the government to use non-institutional approach to service delivery.
- **Social:** Poverty, illiteracy, ignorance, and high rate of infant mortality, low rate of school attendance especially by girls, cultural diversity of the members of the communities leading to difficulties to organise themselves.
- **Political:** There are inadequate understanding, will, support and seriousness from the government on issues pertaining to the peri-urban areas.

- **Community Participation:** There is non-involvement of communities in planning and execution of activities and issues affecting them and lack of co-operation for self-help, and interest in issues that affect the communities.
- **Managerial (Planning, co-ordination, supervision):** These include inadequate town planning, lack of properly defined network designs for road, drains and water supply pipelines, poor planning and choice of facilities and lack of good preparation from individual and government and lack of co-operation and clearly defined roles of governments and its agencies.

10 WATER AND SANITATION COVERAGE IN LOW-INCOME AREAS

The water services available in low-income areas in Kano include household dug wells (which constitute the major source up to 60% in the rainy season), community lined concrete wells provided by local governments, boreholes with hand-pumps provided by the State Government, public stand posts and water selling kiosks using water from KNSWB, privately owned borehole water systems, hawkers and house connection from KNSWB pipelines. Statistics on the consumption from each of these sources is not available. The coverage is given on Table 2 and prices and costs for these services are given in Table 5.

Sanitation: The serious environmental sanitation problem in low-income areas of Kano consists of the unhygienic city landscape in both the residential and commercial areas. They are found along some of the streets, particularly the back streets, where they often impact negatively on city transportation. Field observation shows that the dumps of waste e.g. tannery waste, household refuse especially cellophane bags are common eyesore in these areas. Sometimes, even carcass of dead animals are seen on street sides. Besides the ugly scene they present, these dumps contribute to surface and groundwater contamination. They also block up drainage and stream channels. All the various forms of environmental problems described above create health problems for the inhabitants of the city. The increased and widespread incidence of cholera in the metropolis is likely to be influenced by these conditions. Also, the persistence of typhoid fever in spite of the increasing use of bottled and packaged water may be related to the use of polluted water in growing vegetables.



A typical blocked drain near a public standpipe in Tudun Iya, a peri-urban area in Kano. The water hawkers also store their water carts near the drain as shown in this picture

The recent upsurge of the population moving from rural into urban centres has put tremendous pressure on existing facilities hence leading to rapid deterioration of the sanitation situation. Government efforts to meet up to the needs and aspirations of the people, with their meagre resources are fast overrun by the rapid pace and increased waste generation. These problems are further compounded by the fact that the authorities in Kano have not been able to maintain and repair the few facilities put in place for effective service delivery.

The commonest practice is the on-site facilities within the household in the form of latrine. It is estimated that up to 90% of the households depend on this system. This practice provides easy means of polluting the shallow wells within the household. Some are so unkempt that flies, cockroaches and rats move easily between them and to other parts of the households.

In the urban low-income areas especially near market places, motor parks etc, commercially operated toilets are available where N 3.00 to N5.00 is charged for single use of any of the facilities. The practice has become so successful that some operators even provide private water supply at the toilet site to ensure uninterrupted water supply to the toilet. One of the case studies in this report dwells on this practice.

Health information is presented in Table 2.

11 SUPPORT FUNCTIONS:

Each of the 6 local governments areas has a health department whose functions includes provision of health care facilities like dispensaries and giving hygiene and health education. They are also required to ensure that buildings conform to the health regulations (e.g. ensuring that buildings do not block drains on streets and that adequate ventilation is provided in houses). They also participate along with the State Government's Health Ministry, in State-wide programmes like immunization and handling of an epidemic breakout.

The local governments too have health departments that assist in ensuring that refuse are not disposed of indiscriminately. They also participate in the collection and disposal of dead animals and the likes. They also construct culverts and drains in the low-income

areas. The Kano State Ministry of Health inspects private water supply systems and provides them with disinfectants during cholera break-out. KASEPA (Kano State Environmental Planning Authority), registers all private sanitary facilities, like private commercial toilets and bathrooms) and ensures that they conform to a set standard. (See Case Study in Public Facilities). They also assist by providing standard designs for VIP latrine and public commercial bathrooms and toilets. They also carry out routine inspection of the facilities.

None of the local or State agencies could give details of their work with NGOs on sanitation promotion in low-income areas of the town. However, KnSWB confirms that there are a few philanthropists who collect water from its facilities for distribution to the low-income areas free of charge.

Radio announcement is widely used to educate the communities. The ward head is also used to contact the key members of the communities for passing information around. Posters are widely used.

12 METHODOLOGY TO GET INFORMATION FOR THE CONTEXT:

- Group discussions during the Workshop which attracted participants from the Federal Ministry of Water Resources, Kano State Water Board, Water Boards from three other States, FEPA, KASEPPA, Kano State Ministry of Health, Private water operators in Kano, Water Vendors and Hawkers, Philanthropist water distributors, Nigerian Urban Forum, etc.
- Reference to the papers presented by policy makers and experts and departments during the workshop.
- Visits to KNSWB, Ministry of Environment, KSEPPA, Ministry of Health, Private Waste Collectors and ward head houses where discussions were held with the responsible officials.
- Reference to the documents collected from the FMWR, KnSWB, FEPA, UNICEF, Nigerian Urban Forum, Sages Consults and the National Census Commission.
- Reference to literatures.

13 References:

1. Kano State: 30 Years of Statehood (1967-1997)
 2. The Constitution of the Federal Republic of Nigeria - 1997
 3. Restoring Urban Nigeria: By World Bank with Nigerian Collaboration
 4. Federal Government of Nigeria and UNICEF Master Plan of Operations, Country Programme of Co-operation (1997 – 2001)
 5. Greater Kano Water Supply Feasibility Study Volume 1: by Parkman Ltd.
 6. Distribution System for Greater Kano Water Supply by the Year 2005: M. Hassan Bichi
-

7. Kano State Water Board Progress Report - 1995
 8. The laws of Northern Nigeria: compiled by H.H. Marshall and F. A. O. Schwarz
 9. Draft Public Health Laws (1998) of Federal Republic of Nigeria.
 10. Kano State Public Health Edict
 11. Federal Republic of Nigeria Land Use Act - 1984
 12. Case Study of Lusaka Water Sewerage Company
 13. Kano State Environmental Planning and Protection Agency (KASEPPA) Edict - 1990
 14. The Kano State Water Resources and Engineering Construction Agency Edict No. 3 of 1975
 15. The Kano State Water Resources and Engineering Construction Agency Edict of 1991
 16. The Kano State Water Board Edict of 1991
 17. The Federal Republic of Nigeria Environmental Impact Assessment Decree –1992
 18. The Federal Republic of Nigeria Environmental Protection Agency Decree –1992
 19. The Federal Republic of Nigeria River Basin Development Authority Decree – 1987
 20. The Federal Republic of Nigeria Urban Development Policy
 21. Audited Account of Kano State Water Board – 1997
 22. Nigeria in Maps
 23. Child Survival Protection and Development (CSPD) in Nigeria – Key Social Statistics by the National Planning Commission and UNDP
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Water Utilities Project No. 5

**Strengthening the Capacity of Water Utilities to Deliver Water and Sanitation Services,
Environmental Health and Hygiene to Low Income Communities.**

Case Study for Kano (town), Nigeria

**PRACTICE 1: COMMERCIAL WATER SUPPLY BUILT AND RUN BY PRIVATE
INDIVIDUAL**

(Case Study of Alhaji Bala Water Supply System at Tudun Iya)

PRACTICE 1: COMMERCIAL WATER SUPPLY BUILT AND RUN BY PRIVATE INDIVIDUAL

(Case Study of Alhaji Bala Water Supply System at Tudun Iya)

1. DESCRIPTION OF THE PRACTICE

1.1 What the Practice is:

The practice is a process whereby private operators establish and manage borehole based water supply systems to sell water either directly to consumers in the residential areas or indirectly through hawkers¹⁷. The hawkers are those who purchase water from the operators and convey it to the households where they, in turn, sell to the members. The operator charges direct consumers or hawkers N1.00 for each container of 20 litres (locally called Jerry-can) when he uses electricity from the national grid, and N1.50 when he uses his standby generator. Water collection by individuals in a single container less than 20 litres in capacity is not charged unless the operator has reason to believe that it would be resold. The hawkers charge the households amounts ranging from N3.00 to N7.00 for delivering each 20 litres Jerry-can. The bulk of the water sales goes to the hawkers which goes to show that the household use them extensively. There is no regulator as far as the charges for water are concerned.

1.2 Why the Practice:

Because neither the KNSWB nor the local government councils could meet the water demand of these communities, private commercial water supply distributors, and operators have assumed a major role in filling up this important gap. In the community where this study was conducted, nearly 90% of the community depend on these methods and means for their water supply during the hot-dry season, which is usually between March and May (just before the beginning of the rainy season). During this period most of the households' dug wells are dry. The period also coincides with the period of high water demand from the water board to the extent that hardly any water from the water board distribution system eventually reaches the area. Prior to the commencement of this practice, the community had to go to other communities like Badawa, Sauna and Dawakin Dakata (about 5 Km away) to fetch water during the dry seasons.

The private commercial public water supply in Kano town is, therefore, a major contributor in meeting the water requirements of these communities and thus contributing to their economic development.

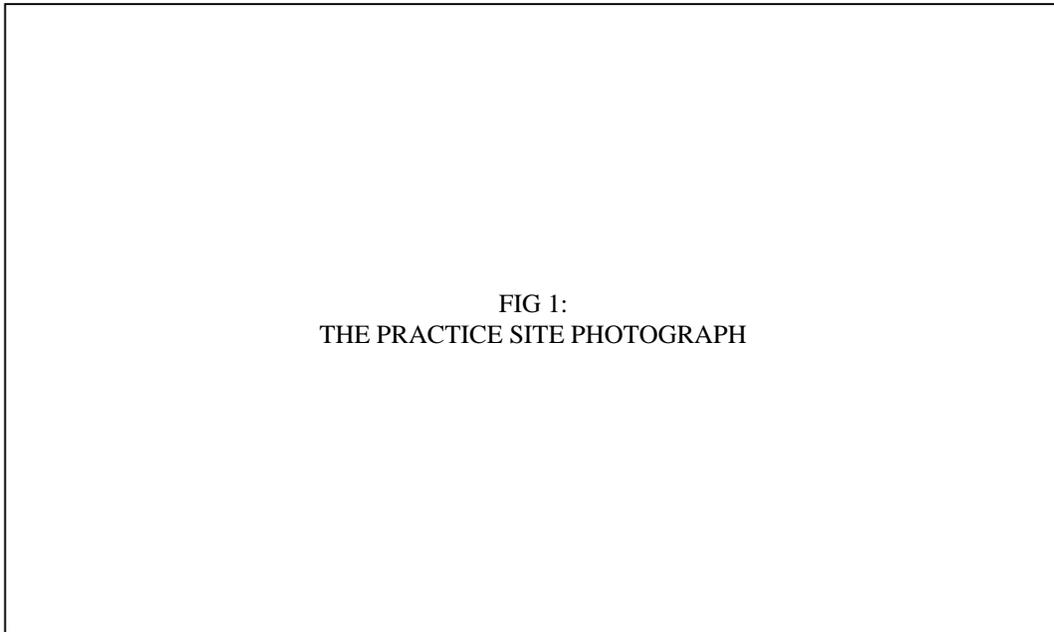
1.3 The Technology:

The technology consists of the construction of boreholes provided with submersible pumps, surface water storage tanks and a standby generator all located in private premises. The standby generator is provided because the electricity supply from the national grid in these areas is not always reliable. The generator is housed in a small room far away from the water storage tanks. There are no standard site plans or

¹⁷ In Kano, water vendors are those who sell water at water points – usually public taps. Water Hawkers are those that convey water and sell to the buyers, usually households

designs issued by any regulatory body. However, health officials do supply disinfectants free of charge to the operators during outbreaks of cholera in the city. A small office which serves as the cash and supervisor's office is usually provided at the entrance of the premises. The photograph of the practice site is shown in Fig.1. The hawkers are categorised into three. There are those who carry single containers on their heads; these are usually old women. The second group are those who carry two or four Jerry-cans tied to a stick which they carry on their shoulders. The last group which is the commonest, carry from 8 to 16 Jerry-cans in cart which they push. The body of the cart is fabricated locally with wood or steel mounted on wheels.

Figure 1 shows the practice site with a steel water storage tank placed on short concrete walls with a number of tap heads attached to the tank for serving a number of customers simultaneously. The ground concrete reservoir is to serve as an additional storage. The water hawkers with their carts loaded with Jerry-can are also on site. Animals (donkeys) are sometimes brought in to drink water and individual consumers/customers (a man, a woman and a child) carry single container on their heads. This is a typical normal day situation. During rush hours, the site is congested.



1.4 The Purpose of the Practice:

The operator claims that the purpose of the practice is to alleviate water shortage in the community and stimulate progress. Even though he admitted that he has been making a fairly satisfactory profit in the business, he could neither reveal the amount of profit nor provide details of his input and out-put costs. Rather, he insisted that the water supply is meant to help the community. The Kano State Water Board, however, acknowledges that the role of the private water system is complementary to its operation and, in order to encourage the practice, they do not charge the operators for extracting the ground water.

1.5 The Condition for the Practice:

The practice operates usually in places where both the household private dug wells and the public water supply from Kano State Water Board are either unavailable or unreliable. Other reasons like water quality – especially the taste – are advanced for patronising the practice since most of the dug wells in the area were said to have water of bad taste due to pollution. The operator also emphasised that the co-operation of the community was very important to the success of the system. Even though the members of the community are not involved in building or managing the system, they have co-operated very well by allowing the operators to operate commercially within their community. The condition is also such that the members of the community are willing and able to pay for the services rendered. In a predominantly Islamic society where it is considered a taboo to deny any person access to any water source, the co-operation of the community in the operation of the practice is paramount.¹⁸ The practice is also not disturbed by much government interference while the license and other fees charged by the authorities are minimal.

The condition under which the practice has to operate is the strict observance of the conditions stated in the agreement signed between KNSWB and operators of the system. Sub-section 27(3) of the Kano State Water Board edict states that no person shall construct a borehole or a well within any urban area within 2 kilometres of any waterworks except in accordance with the conditions of a written approval of the Board. However, we could not trace any previous approval issued by the Board to any private operator. This means that the procedure is not being adhered to.

1.6 The Initiation of the Practice.

Private water operators are said to be in existence in Kano even before the colonial period. They existed under the name Yangaruwa (meaning water sellers). In those days they collect water in clay pots and containers from community wells and distribute it in the market places for some token amount. However, this practice was introduced to this community by one Alhaji Bala who initially wanted to provide a borehole for his new proposed house but ended up with converting the place into a water sales premise. (See the details under Process and Approach later).

1.7 The Management.

The management of the Practice solely rests on the individual owner who is also the operator of the facility. Ministry of Health inspects the system from time to time to ensure compliance with health sanitary standards. The head of the family of the owner is the Manager. There are four other employed staff; one watchman, two cashiers and one customer relation officer.

¹⁸ *The people of Kano town are predominantly Muslims who have stronger respect for Islamic law than the country's constitution. The Islamic water laws have been founded on the basis of community ownership of water resources. Consequently, ownership of water resources is vested in the community as a whole, while an individual would only have the right to use. A holder of right of occupancy, for example, could dig a well, sink a borehole or even construct a dam on his private land, he could not prevent other people from the use of the water.*

1.8 The Beneficiaries and/or users (the Stakeholders)

The owners: The Manager says that the owners make reasonable amount of money but declined to say how much.

The Staff: In addition to the Manager, four other staff were fully employed in the system.

The Hawkers : During the two hours inspection we conducted at the site, we saw over 25 hawkers each pushing a cart containing 16 number of 20-litres containers. We estimated that there could be as many as 30 to 50 hawkers each gainfully employed in distributing the water.

The community and their neighbouring communities: The communities customising the practice are the biggest benefactors. The size of the community is estimated to be about 2,500 people.

The Kano State Water Board: The board is also a beneficiary since the practice complements the efforts of the Board towards meeting one of it's objectives which is improving access to potable water.

State Ministry of Health: The ministry has found it easier to disinfect a few commercial boreholes during a water related epidemic than getting individuals to disinfect their household dug wells. The operators also pay N2,000 annually to the Ministry of Health

The local government: The operators pay tax to the local government (N1,200)

1.9 The Operation of the Practice

This system was initiated about 4 years ago, but the practice has been in existence before the colonial period (1900). Currently there are similar systems operating in the same manner. The water board has no official record of the number available but this study identified the existence of five, namely:

- (i) Bala Mai Fata
- (ii) Wada Mai Biredi at Gwagwarwa
- (iii) Ahmadu Garba Yaro at Gawuna
- (iv) Umaru Mai Biredi
- (v) Yakubu Haruna Garba

2. PROCESS AND APPROACH

2.1 The Commencement of the Practice:

The practice was introduced by one Alhaji Bala who, unsatisfied with the congestion and unhygienic environment of where he lived in the old city, decided to move to this peri-urban area where he bought a piece of land to build a house. Because there was no public water supply in the area, he engaged the services of a drilling company to assist him explore, investigate and drill a borehole for him. This company then engaged a geophysical consultant who carried out geophysical investigation of the site and confirmed the presence of adequate water¹⁹. Encouraged by the result he decided to start by drilling a borehole, which would provide his water requirement for building the house as well as for subsequent use as the all-time water source for the house.

By the time he completed the wall fencing and started the construction of the house, many communities realised the availability of the water in the borehole and throng there in large numbers daily to collect water. Initially, he allowed them to get the water free, but after a while, water hawkers were coming in large numbers to collect the water free, and deliver to households at some rates usually agreed between the hawkers and the individual household heads. At this stage, he started charging the hawkers for each container of water taken out. He suspended the construction of the house and decided to remain in his overcrowded quarters in Kano old city until he died in 1996. The system is now run by the family.

2.2 The Tools and Implementation of the Practice.

The watchman starts work at 6.00 pm and closes 6.00 am. His job includes starting the submersible pump at 5.00 pm or even earlier to ensure that a considerable amount of water is available at the time the water hawkers are allowed in at 7.00 am. Two other people work as cashiers on shift basis. One works from 7.00 am to 1.00 pm, the other works from 1.00 pm to 7.00 pm. Account books are kept in which payments are recorded but receipts are not issued to the customers.²⁰ The place closes at 7.00 pm daily. The fourth worker is the system organiser of the hawkers in queues to ensure that a chaotic situation does not exist in the premises. He also ensures that every customer does not evade payment. All the four workers are paid monthly salary and an additional daily token allowance if the day's sales is high. The Manager is assisted by the site organiser and one of the cashiers to undertake minor repairs and maintenance of the machine and other installation in the systems. Experts come from outside to undertake major repairs. Hawkers queue up outside the gate as early as 7.00 am waiting for the opening of the gate for business. As soon as the gate is opened, they all would move inside the compound and start filling their 20 litres jerry cans from the numerous water tap heads attached to the slightly elevated surface tank. On completion, the hawker/ vendor would move his cart near the main gate and pay cash for the water collected (N1.00 or N1.50 per 20 litre Jerry-can). When a hawker comes back to take more water, the process is repeated.

¹⁹ *Reath Drilling & Construction Company and Geowater Engineering Services were the constructors for drilling the borehole and the geophysical investigation companies respectively. Their investigation report was made available during the studies.*

²⁰ *He confirmed that he keeps daily record of account but declined to show it.*

The hawkers carry the water to their customers who could be as far as 0.5 kilometres or even more and charge N3.00 to N7.00 depending on the distance. Account books are kept only for the owners' use and could not be shown to the case study team.

3. ANALYSIS

3.1 The Success of the Practice:

This is a practice in which the consumers presented themselves in large numbers as customers and made the owner of the system to change his original intention of construction of his personal domestic borehole water based system to a commercially viable water supply system. The practice demonstrates a demand-driven approach. It is one of the most successful approaches towards meeting the water requirement of not only the low-income communities, but also of those living in areas where utility water distribution pipeline has not reached or where the utility supply is not reliable or dependable. The practice itself, though delivers water to the customer at prices much more than that of the utility supply, serves as an interim measure before a comprehensive water system is brought to the area. Below are some observations made by some of the stakeholders on the efficiency, reliability, accessibility and dependability of the practice.

The consultant held discussion sessions with the owner of the system, the management staff, the hawkers and the community (See picture during one of the sessions). Below is the summary of the assessment of each of them.

The owners: The Manager confirmed that the owners are very satisfied with the efficiency of the system in terms of profitability. Since the death of the original owner, the members of the family have been depending largely on the revenue from the water system.

The Staff: The four staff expressed their satisfaction of being gainfully employed on full time by the practice of the system

The Hawkers and Vendors: All the water hawkers interviewed claimed that the system provided them with gainful and paying employment. One of them narrated to us how that he married and looks after himself, his wife and the two children from the earning he makes out of the water distribution. However, they clearly did not want the water board to improve its performance in the community, as, according to them, doing so will force them out of the business.

The Kano State Water Board: The board is also a beneficiary since the practice complements the efforts of the Board towards meeting one of its objectives which is improving access to potable water. Asked to comment on the fear of the hawkers that if the Board was able to improve its water supply in the area, they (the hawkers) would loose their jobs, the Water Board officials said that there would always be a new market for them elsewhere in the town as it would take decades before the board would be able to reach all the communities with adequate water.

The community and their neighbouring communities: All the members of the communities including the community leader (Mai Anguwa) have expressed

satisfaction with the performance of the system with respect to accessibility, and reliability. Communities customising the practice are the biggest benefactors.

3.2 The Impacts of the Practice

The practice has the following impacts:

- Provision of water nearer to the community which is now within radius of 2 Km compared to as far as 5 Km away to fetch water before the system was built. Thus more time and energy is saved and the young ones could have more time to attend school or help in other domestic works. The women too have more time to attend to other more economic activities.
- Water has been made available at cheaper rate compared to before (even though still much more expensive compared to the utility water). They now pay only N1.0 for one Jerry-can if they fetch the water directly or N3.00 if they buy from hawkers. This reduces the household expenses in supply of water, gives them spare funds to improve in their meal and other pressing needs. Cleanliness and healthy living is enhanced with increased quantity of water under this situation.
- The system allows easy enforcement of water quality regulations as well as disinfections of the water source instead of having to do so to so many domestic wells during outbreak of water related diseases.

3.3 Assessment of Replicability

The practice is reported to be operating in many other locations in the metropolis as shown and listed in the report. It's major problems are that it needs relatively large amount of an initial capital for site acquisition, geophysical investigation, drilling of boreholes, construction of the storage tank, provision of water intake points, supply and installation of the submersible pumps, and generators. Management and maintenance of the systems are also a bit difficult but very possible. The owners provided the site drawings and the geophysical investigation report but declined to give costs involved in the construction and running of the system. Our survey however shows that most of the other operators charge more or less the same amount ranging from N1.00 to N1.50 per a 20 litres Jerry-can. Our estimation based on two boreholes, two submersible pumps, one 20,000 litres surface tank, a generator house, one generating set to run one borehole at a time, electrical installation, wall fencing and land could cost about N4,500,000 (US\$ 45,000). The system lifetime is estimated at 12 years

3.4 Assessment of Sustainability.

As long as a good reliable ground water is available and good management is put in place, the system can be very sustainable.

4. OUTSTANDING ISSUES

There has to be a national policy to address the issue of water supply to the low-income areas of the town with special emphasis to tap the resources available from the CBOs, NGOs, international organisations, private sector and governments.

There is the fear that a 'one-man businesses' may collapse where a determined initiator of the practice in a place is no longer in control of the system.

There appears to be too many government agencies in regulating the activities of the private operator. The Water Board Edicts requires the operator to obtain licence to operate the borehole. The local government and the Ministry of Health also collect annual tax from the supplier. In fact, unnecessary taxation by both the State and local governments worries the operators. On moral ground, one would fault attempts by the governments to make money out of the communities that are deprived access to the State financed water utilities and who are already paying more for the water of lower quality and accessibility.

The risk that the operators and the hawkers have to face is that as the current policy of expanding water supply coverage by Kano State Water Board succeeds, the system in that community may become irrelevant because of the availability of cheaper and more convenient supply in the community from the board. Thus an investment of this nature will require good feasibility studies taking into account the programme of expansion of the Kano State Water Board.

Another outstanding issue is the sanitary aspect - the surrounding where the private operators as well as standpipe vendors operate. No action is usually taken by the vendors or operators to construct drains and keep the surrounding clean. A typical example of such unhealthy sites is where the containers for carrying the water are stored in the carts in very dirty surroundings near the standpipe. The water board needs to include the aspect of keeping the surroundings clean as part of the contract with the vendors.

Information Gaps

The operators are not willing to discuss financial issues like the investment costs, operational cost and earnings. They do not want the Government to know their financial position. Similarly, there does not appear to be any written guideline or procedure for running the practice. The KnSWB itself does not supervise their operation as required and consequently, documentation and records on the practice are lacking.

5. LESSONS LEARNED/ CONCLUSIONS

The practice has successfully reduced water supply problem of the community at a lower cost. It also shows that demand driven projects are usually very successful. Even though the original plan of the owner was not to supply water to community, demand from the community made him changed his plan. He realised that the community needed a good water source and they are willing to pay for it. Secondly,

sacrifice of personal comfort for the interest of the community as done by the owner of the system can be wisely utilised and converted into a successful investment that is socially, morally and financially beneficial to all the parties. It also shows that when a system meets the need of the people, they try to use their meagre resource to pay for the services while at same time expressing appreciation. All these form the bases of sustainability. Finally, the practice also shows that water hawkers and private operators can successfully work together to meet community needs while at the same time meeting their personal financial needs.

Water Utilities Project No. 5

Strengthening the Capacity of Water Utilities to Deliver Water and Sanitation Services, Environmental Health and Hygiene to Low Income Communities.

Case Study for Kano (town), Nigeria

**PRIVATELY RUN PUBLIC CONVENIENCES PRACTICES (TOILETS AND BATHROOMS)
(Case Study of Public Conveniences near Kano Central Market)**

PRIVATELY RUN PUBLIC CONVENIENCES (TOILETS AND BATHROOMS) **(Case Study of Public Conveniences near Kano Central Market)**

1. DESCRIPTION OF THE PRACTICE:

1.1 What the Practice is:

The practice is private individuals and organisations building and managing public conveniences (toilets and bathrooms) commercially. The Private individuals and organisations get support of the local government, and assistance from KASEPPA in the form of the site acquisition, provision of building plan, and supervision of the construction and sanitary upkeep of the system.

1.2 The Purpose of the Practice:

According to KASEPPA the purpose of the practice is to improve the sanitary condition of the environment, develop healthy and hygienic practices among the people and to provide decent/ accessible public convenience. According to one of the owners of a facility near Kano main market, the practice was developed for three major purposes namely:

- i. to improve environmental quality and the health of the community in general,
- ii. to conform with Islamic religious demand for privacy/ avoidance of public exposure while defecation, urination or bathing and meeting the mandatory cleanliness before praying and
- iii. as a mean of investment to generate money for the owner (development of a public enterprise out of the provision of public conveniences.)

1.3 The Initiation of the Practice

The Ministry of Health claims that the practice was initiated by some traders in the Kano market around 1961 when they discovered that the toilets being built and maintained by the then Native Authority since 1953 were inadequate in number and in cleanliness for them and their customers. Eventually, now individuals obtain approval from the government regulating agencies to build and run the facilities on commercial basis. In 1981, the Kano Urban Development Board started encouraging the practice by the provision of the building designs to interested operators and assisting them in the construction. Where it was considered essential to have the facility and no individual or organisation has the will or financial resource to build it, the Board would build and handover to interested individual to pay gradually or on lease.

1.4 The Management

The management of the Practice solely rests with the individual operators who build the facility. 6 out of 8 systems visited have the owners as the managers and chief

executives of the systems. In the two others, the managers were employed by the owners who are said to have other commercial public conveniences elsewhere.

In the system studied in depth, there is a manager who supervises two staff who collect money and allow the customers in. There is one cleaner who occasionally inspects and cleans the facility after use.

KASEPPA inspects the system from time to time to ensure that the system is kept neat. With regards to emptying the septic tanks of the toilets, all the operators interviewed claimed that they use soak-away systems attached to their septic tanks and as such they take years without any need to empty them. If the need arises, they pay KASEPPA to send their trucks to undertake the evacuation.

1.5 The Beneficiaries and /or users

Majority of the systems are located in public places. There are scores of them around the city Central Market. However, a few of them are said to be located between houses in the congested residential areas. The general public are the beneficiaries of these facilities. The urban poor who live in high-density areas where private toilets are not usually provided due to lack of space also use them. Furthermore, visitors who come to Kano to undertake one business or the other use them. However, it has proved difficult to get an information on actual number of users in the morning, afternoon, evening or even a day's total. Part of the reason is because they thought the study is meant to exhort more revenue from them.

1.6 How long has it been operating

Nobody could say for sure when the system was initiated. Some claimed that it could have started earlier than 1961 but became common in 1981 when the authority started encouraging its development.²¹

1.7 Where is it being used and how has it spread?

Public conveniences are found spread in all the 6 (six) metropolitan Local Government Areas of Kano town, but their concentration differs from area to area. Most of them are located near the commercial centres and motor parks. Actually, they have been in existence in other parts of the country like Lagos and Ibadan as far back as 1950. But it is not clear whether the current way in which the practice is being implemented came from these towns.

²¹ The Lead Consultant recalled seeing one in operation in Zaria (a town 160 Km from Kano) as far back as 1968 and it is still operating.

1.8 The Condition for the Practice:

The practice operates usually in places where people are away from their houses and meet where services like restaurants, shops, markets, motor parks and offices do not have sufficient toilets and bathrooms for their customers.

The conditions under which the practice has to operate are:

- Congested urban areas where individuals do not have enough space to have household or personal toilets or a business area where the commercial stores, bars etc do not provide adequate toilets to their customers.
- Existence of water either from the utility or private boreholes
- Compliance with conditions set out by KASEPPA in ensuring cleanliness of the system. KASEPPA sets up regulations applicable to the toilets that it leases to private individuals and organisations. KASEPPA ensures that all the regulations with respect to its system and sanitary aspects are the same. See Box 1

- (a) To pay the rent as at and when due;
- (b) To ensure that the land shall be used only for the purpose of building public conveniences;
- (c) To observe all rules and regulations made or to be made by the agency on the matter;
- (d) To build and where already built to maintain the Public Convenience in accordance with a building plan approved by the agency;
- (e) Not to erect or permit to be erected any building upon the premises other than the building approved by the Agency nor made or permitted to be made any alteration in or addition to the building approved without prior consent in writing of the Agency;
- (f) To keep the premises and all buildings thereon and the drains and pipes and sanitary and water apparatus thereon in a tenantable repair and condition.
- (g) To permit the Agency through its authorised agents to enter upon the premises to view the state and condition thereof and the Agency may notify in writing to the tenant on specific repairs necessary;
- (h) NOT to sell or assign or sub-lease, or in any way part with possession of the land without the written consent of the Agency.

1.9 The Technology:

The technology consists of the construction of public conveniences using approved designs from KASEPPA. The standard designs issued by KEPPA are of two types; The bigger one has 16 compartments and the smaller 10. The facilities available in the bigger and the smaller designs are shown in the table below.

Facility Design	Male Section		Female Section		Total
	Toilets (WC)	Bathrooms	Toilets (WC)	Bathrooms	
Type 1 (big)	5	3	7	1	16
Type 2 (small)	4	2	3	1	10

The bathrooms are small compartments generally 1500 mm x 2000 mm consisting of a shower (and sometimes a bucket) only. The toilets are also small compartments of the same size as the bathrooms and each consists of a squat flush and water tap. The building arrangement and the details of the facilities for the bigger system is shown in Fig. 1.

Type one costs about ₦1,200,000 (\$12,000) to build while the Type II ₦ 800,000 (\$8,000)

In addition to the standard designs, there are smaller ones built by some private individuals. In such cases the number of compartments for toilets and bathrooms varies from location to location depending on stakeholders decision and means, but the design in each case has to be approved by KASEPPA else the operator will be forced to close it down.

In most cases, the facilities are connected to the Water Board pipeline system. However, where there is irregular water supply, private boreholes or dug wells are provided within the premises. The WC and the bathrooms drain into a septic tank which is connected to stone filled soak away within the premises. Because of the long duration of the dry season, the system works with hardly any need to evacuate the septic tank. Where the evacuation becomes necessary – which is rare – the owner hires emptier (KASEPPA or private truck owners) to undertake the work. A small office which serves as the cash and supervisor's office is usually provided at the entrance of the premises.

2. METHODOLOGY AND PROCESS USED FOR THE PRACTICE

2.1 PROCESS AND APPROACH

The process originated from the colonial times though no document could be traced to support the claim (Kano State Sewerage and Drainage UNDP/ UDB [1978] Project: Master Plan Report). That indication is strong because many government officials, other stakeholders and users stated that they could still remember seeing such facilities in their childhood days; i.e. those in their Elementary, Primary and Secondary School days. However constructions were mainly done by Native Authorities at motor parks, markets and in some cases other public places basically identified as necessarily requiring Public conveniences.

For building the facility, the actual practice is that a prospective operator applies to KASEPPA to build the facility at a particular site. KASEPPA then inspects the site and get the consent of the neighbours. It also helps him to acquire or get the site on lease after which it gives the approval. Finally it assists by providing the building plan which the prospective operator is obliged to build accordingly.

Caretakers are usually appointed by the private investor and paid from the proceeds of fees charged to customers for the use of the facility. Moderate fees are paid by customers/ general public; ranging from N3.00 to N5.00 (three to five Naira). The caretakers ensure the sanitary upkeep of the facility. The investor also makes money out of it.

2.1.1 Tools and Methods used:

The very first stage leading to the construction and operating a Public Convenience is an application to KASSEPA by an intended operator using an appropriate form to be collected from the agency titled. See Annex ...

Information on the name of the old and new tenant, address, business, location of Public Convenience, etc. and certification by the original allottee/ tenant as well as recommendation and approval are found on the form. After that an 'Agreement for letting of Land for use as Public Convenience' is signed between the Agency and the Tenant. See Annex II for a sample.

People are informed and mobilised through Television and Radio jingles on the need to use Public Conveniences. These enlightenment slots are focussed on public hygiene and general environmental sanitation. Usually the public and community leaders are not consulted before construction

The legal instruments mandating and guiding the activities of KASEPPA, are the Kano State urban Development Edict No. 5 of 1976, KASEPPA Edict No. 8 of 1990 and the Lease Agreement usually signed by an allottee.

During the operation of the practice, cash is directly paid to the operator or attendant by an intending user of the facility. But there are no cards or tokens given, because all it takes is that immediately one pays his/ her money a direction is given to go to either a bathroom or toilet after collecting an appropriate material(s) to use (toilet paper, soap and sponge, etc.).

2.1.2 How is it being implemented:

The procedure for site selection is that priority is given to high density areas where private latrines are not affordable. Also high activity areas such as motor parks, markets, junctions, bus stops, parks, sports complexes, places of worship and public buildings, etc.

Some of the planning indices guiding site selection include:

- i. A site should not encroach on the right-of-way;
- ii. It must be at least 8 metres away from the road;
- iii. It should not cause traffic congestion or obstruct visibility angle;
- iv. It must not block access to any public facility, e.g. drainage; and
- v. It must be at least 5 metres away from any existing structure.

When all the above conditions are satisfied, KASEPPA. issues an approval letter. There are two types of approval issued by the Agency:

- i. Where an applicant owns a land and satisfies all conditions: In this case the Agency informs him (applicant 'to come forward and collect the Public Convenience Building Plans and have the site demarcated'. See Annex III for a sample. An approved site plan is also attached for guidance. The construction is done based on the building plan with the supervision of the Agency. An annual fee of N800.00 is paid to the Government.

- ii. The other type of approval is an allocation: In a case where the government constructs a facility, it is allocated to individual operators at a cost of N25,000.00 with an annual rent of N1,000.00. Also see Annex IV for a sample.

In both cases, Kano State Water Board (KnSWB) supplies water for the operation of the facilities. Where KnSWB does not supply water, the operators provide boreholes. In some cases water is sold to the general public from these places.

The procedure for using the facility is that the user pays money directly to the attendant of a facility for usage. There are no cards or tickets usually issued before usage. The user for either toilet or bath facility will approach the attendant on his intention to use the facility, he/ she will then pay the required amount (N3.00 or N5.00). The attendant then directs the intended user as appropriate. He (attendant) in some cases may provide the user with appropriate items such as soap and sponge, in case of bath or toilet paper in case of a toilet facility.

In both cases, periodic monitoring is done by the Agency to ensure an effective and efficient operation and maintenance of facilities. It is important to note that the operator controls and handles all finances. He also decides on what users pay, however that is done with the approval of the Agency.

2.1.3 Why was it set up this way

All the stakeholders (including government officials and users) are of the view that the implementation of the practice in this manner has evolved over a period of time. It is important to note that the high demand for public toilets and bathrooms is due to Kano's cosmopolitan nature as a centre for commerce and industry coupled with some high density areas that could not afford to their own facilities.

3. ANALYSIS

The Practice is a successful story because of its acceptance by the communities. The success is indicated by the flourishing of large number of the systems in many parts of metropolitan Kano. As at the time of this study there are 145 Public Conveniences and many more applications are under process. (See Annex IV for the list of approved Public Conveniences in Kano). Prior to the implementation of the practice, people who visited market places, stations and motor parks, used to defecate in open spaces nearby called "open-air-toilets". The practice has now successfully eliminated this dirty habit. The private commercial public conveniences in Kano town is the major contributor in eliminating open indiscriminate defecation and bath-taking, thus improving the sanitary condition of the environment of most public places in the town. Many public places which were eyesore and smelly have now turned into clean and safe places to conduct business. This situation has also greatly reduced the chances of the spread of diseases especially during the rainy season.

The stakeholders associated with the provision of these facilities include Ministry of Environment, KASEPPA, Ministry of Health, some operators and users. Below is an analysis of the successes of the practice based on the stakeholders' assessment of the performance indicators of the practice. The indicators are efficiency, effectiveness, accessibility and reliability.

(I) Ministry of Environment/ KASEPPA

- * **Efficiency:** The practice is highly efficient in all the places they are provided because the quality of service has been tremendously in the increase due to better design, spread, accessibility, affordability, good management, provision of constant water supply and electricity.
- * **Effectiveness:** The deregulation of the practice works well; i.e. private ownership brings about better management, high sense of commitment due to personal stake. This differs from the hitherto inefficient operation associated with government ownership, control and management.
- * **Reliability:** The system is fairly reliable though sometimes it is affected by water shortage and lack of 24 hour operation as most are closed for the day at 6.00p.m. All these affect the practice's reliability index.
- * **Accessibility:** They are highly accessible because of the high number of the practice within Kano metropolitan area. They are also accessible in terms of fees which are quite low and affordable.

(II) Ministry of Health

- * **Efficiency:** This may be difficult to determine because no records are kept on the number of users on a daily basis. One cannot even get their daily financial records as another guide for such an assessment due to fear of additional taxes.
- * **Effectiveness:** The practice is very effective especially around markets and motor parks. This is because indiscriminate defaecation has greatly reduced.
- * **Reliability:** The system is reliable. However the situation can be improved if group enterprises and companies are encouraged to join the practice for better management.
- * **Accessibility:** The practice is accessible because provisions are made for male and female users. Moreover, the affordable fee of between N3.00 to N5.00 and the spread of the practice all over Kano have made it more accessible and acceptable.

(III) Operators

- * **Efficiency:** The operator is satisfied with the return on investment even though he declined to give details on input and output cost.
- * **Reliability:** From his point of view, the system meets all his financial requirement and will continue to do for a very long time.

(IV) CUSTOMERS:

Many customers were approached for comments but they were shy and refused to comment freely. However, the few comments collected showed that they are satisfied with the service and that the charges are very fair. One of them commented that without the bathrooms, the customers in the market would be very dirty and the market could be smelling everywhere.

Impacts of the Practice

The practice of providing Public Conveniences and management by private operators has made great impact in the area of elimination of indiscriminate defecation in open spaces in Kano metropolis. Generally according to the stakeholders, there are positive impacts especially in the development of a healthy environment and healthy and hygienic practices amongst people. There are now many clean and decent public places and buildings. Furthermore, the practice being a profitable business venture which employs many people in the midst of many unemployed is a clear indication of its positive impact.

However as a negative impact on the society, the premises of some public conveniences are being used for hemp smoking, womanising, and trading, etc. Some of them sell water to the general public that may possibly be contaminated.

Assessment of Replicability

There are cases of replication of public convenience construction in many parts of Kano metropolis. More applications are being processed by KASEPPA. Refer to Annex V for a detailed list of operators and locations. The Kano experience has replicated beyond the boundaries of Kano State and going as far as Kaduna in Kaduna State, Jos in Plateau State, Katsina in Katsina State and Sokoto in Sokoto State, etc.

The means of spread has been through contact with KASEPPA by the planning agencies of the cities referred to above while seeking advise and guidance on the issue. The tools for this spread has been through Agency to Agency contacts, official visits and sharing of research findings and policy papers presented during seminars and conferences, etc.

Assessment of Sustainability

All indications are that the practice can be sustained because of its management by private individuals. This is because it is operated as a business venture which is profitable, its requirements for operation and maintenance is low, patronage is high and its return is quite high. Furthermore, the current institutional arrangement and procedure for operation and maintenance can sustain the practice.

4. OUTSTANDING ISSUES

Lack of clear and consistent policy is one of the most important issues. It is a situation whereby the Constitution of the country gives the responsibility of providing the facilities to the local government but the policies kept changing. At one

time, the controlling authority was the local governments, another time it was the Ministry of Health, then with WASCO, KASEPPA, and the Ministry of Environment.

The aspect of lack of continuity for good programmes and policies greatly hampers the good intention of ideas like the promotion of Public Conveniences construction. Therefore the need for an aggressive promotion of these facilities to a level where the practice is fully accepted as a viable business venture is left to be desired. Perhaps when that level is attained along with intensive public enlightenment on its positive nature towards good hygienic and environmental practices, then it may not matter much on whether the government promotes it or not.

The participation of small enterprises and organised groups to join the venture will go along in improving the practice. This is because sometimes a 'one-man businesses' may collapse where a determined initiator of the practice in a place is no longer in control of the system.

There are certainly some information gaps which if fully utilised will enhance the analysis of the practice under study as follows:

- i. There should be a well defined criteria in a form of well laid down guidelines for site selection;
- ii. Lease Agreements should be signed by the operators themselves and aspects of monitoring should be included in such agreement as records; for example No. of users per day, consumption of tools for their services, money collection per day, etc. and monthly returns of vital information about the practice.
- iii. Various sizes of Public Conveniences should be promoted; e.g. 4, 6 and 8 compartments for those who could only afford to build smaller facilities based on their capital base, instead of the current designs of 16 and 10 compartments whose constructions runs in over N500,000.00;
- iv. More explicit laws are necessary on Private Conveniences; and or
- v. Full utilisation of the UNDP/UDB (1978) Kano Sewerage and Drainage Project Master Plan Report.

5. LESSONS LEARNED/ CONCLUSIONS

The constitution states that it is the duty of the local government councils to establish and maintain public conveniences (toilets, latrines, bathrooms,) and refuse collection and disposal. The State Ministry of Health and the recently created Ministry of Environment under which Kano State Environmental Planning Protection Agency (KASEPPA) now operates are the regulatory bodies responsible for enforcement of environmental and sanitation laws.

Many places which were eyesore and smelly have now turned into neat and safe places to conduct business due to the contribution of the local government through the provision of the conveniences.

Lessons learnt from the study of public conveniences in Kano metropolis are as follows:

- i. The private commercial public conveniences in Kano town are the major contributors in eliminating open defecation and bath taking as well as in improvement in the sanitary environment of most public places in Kano.
- ii. There are support and assistance from both the local government, and KASEPPA.
- iii. The technology consists of the construction of public conveniences using approved designs from KASEPPA. But, a part from the standard designs, there are smaller ones built by some private individuals.
- iv. The practice is considered as a means of investment to generate money for the owner (development of a public enterprise out of the provision of public conveniences.)
- v. The management of the Practice solely rests with the individual operators/ those who built the facility.
- vi. Public conveniences can be found spread in all the 6 (six) metropolitan LGAs of Kano town, but their number differs from area to area.
- vii. The Practice of providing Public Conveniences in Kano is accepted by the communities and therefore successful.
- viii. There have been cases of replication of public convenience construction in many parts of Kano metropolis and some neighbouring states. There are now 145 Public Conveniences spread all over Kano.

This useful study is quite relevant to the development of Public Conveniences in Kano metropolis and any part of Nigeria interested in the introduction of the practice. However, in order to fully utilise the study there must be a way of funding a well developed demonstration project proposal. This proposal will include objectives, justification for the project, methodology/ strategy for implementation, equipment, logistic facilities, a training component and adequate budgeting.

ANNEXES

1. **Application Form for Transfer of Tenancy in Respect of Public Conveniences Constructed by KASEPPA (Kano State Environmental Planning and Protection Agency)/ Recommendation and Approval.**
2. **Agreement/ Guidelines for Letting of Land for use as Public Convenience between KASEPPA and Tenants.**
3. **Sample of Allocation of Public Convenience by KASEPPA along Pilgrims' Camp Road, Kano as Per Plan No. SP/KASEPPA/229 (7/9/19980).**
4. **Sample of an Approval Letter in Respect of an Application for Public Convenience along Maiduguri Road, Kano (2/10/1997).**
5. **List of 145 Approved Public Conveniences in Kano Collected from KASEPPA on 16/10/1999.**

Water Utilities Project No. 5

Strengthening the Capacity of Water Utilities to
Deliver Water and Sanitation Services,
Environment Health and Hygiene to Low Income
Communities.

Case Study for Kano (town), Nigeria

**SYSTEM CONSTRUCTED WITH
COLLABORATION OF COMMUNITIES,
GOVERNMENT AND DONORS, MANAGED
BY COMMUNITY.**

Case Study on Community Water Supplies Constructed by the
Petroleum (Special) Trust Fund – the Case of Adaraye Quarters
(Ungogo Local Government, Kano)

**PRACTICE 4:
SYSTEM CONSTRUCTED WITH COLLABORATION OF COMMUNITIES,
GOVERNMENT AND DONORS, MANAGED BY COMMUNITY.**

**Case Study on Community Water Supplies Constructed by the Petroleum
(Special) Trust Fund – The Case of Adaraye Quarters (Ungogo Local Government,
Kano)**

1. DESCRIPTION OF THE PRACTICE

1.1 Context of the Practice

1.1.1 Settlement Topology:

The people of Adaraye Quarters located on the North-Eastern edge of Greater Kano, in Ungogo Local Government Area, are mainly immigrants from the rural areas of the state and other parts of Nigeria. This type of settlement is illegal in nature, springing up from local conversion of farms to residential plots thereby transforming into unplanned settlement with little or no basic infra-structural facilities. The few facilities provided by Government are poorly managed and subjected to gross vandalization due to the inhabitants' belief that whatever is provided by Government is not entrusted to any one.

1.1.2 Water Supply Problems Prior To The Introduction Of The Practice:

Most of these types of settlements are located far away from the KNSWB's water distribution mains. Due to the unplanned nature of these areas coupled with the fact that the water produced by the Water Board is far from meeting the demand of its consumers, pipeline extension to such areas was not feasible. As a result the daily water requirements of the inhabitants were obtained mostly from water hawkers who collect and distribute the water from various sources such as; open unprotected wells, private borehole operators and piped supply from areas with reticulation systems. The price paid per a 20-litres jerry can varies with the quality of the water supplied by the vendors, ranging from 4 Naira for water obtained from open wells to 7 Naira for a pipe borne water and that from private boreholes. For those that cannot afford the cost, their women and children spend greater part of the day collecting their requirements from any available open well or pond.

1.1.2 Water Supply Services in the Area.

The Kano State Water Board had tried reaching these types of settlements through the extension of its water mains to most of them. But due to the increasing gap between supply and demand in Kano, these water mains are mostly empty. Local Government Councils have provided shallow (lined) open wells in many of these communities but due to the prevailing geological conditions of these areas (Basement Complex Region) the wells dry up during the long dry season. As a result of which most of them are abandoned and in some cases filled up with rubbish thrown in by children. Some families attempted to dig shallow wells in their compounds but because of the proximity of these types of wells to pit latrines the water obtainable contain high level of nitrate and there exist high risk of faecal pollution. Therefore, the most hygienic water available is that obtained from far away commercial taps

and private boreholes by Hawkers, which is sold to the consumers at 4 Naira to 7 Naira per a 20-litres jerry can.

1.2 What the Practice is:

The practice consists of construction of boreholes in selected locations. Depending on the prevailing hydrogeology, the boreholes are fitted either with hand pumps or electrically powered submersible pumps. In the case of electrically powered borehole, generating sets, 22.50m³ overhead steel tank and a battery of taps are provided. While the Federal Government, through the Petroleum (Special) Trust Fund (PTF), financed the construction of the water schemes, the beneficiary communities were organized to raise fund and maintain them, with some technical backings from their various Local Governments and State Water Agencies.

1.3 Why the Practice:

Water supply being one of the most important sub-sector of social services is among the areas of concentration given to the PTF. The earlier practice was for the Government to construct and maintain these types of projects. As a result of rising cost of maintenance and the fact that revenue was not forthcoming from such projects, many of those constructed earlier have broken down due to lack of attendance by the Government and the 'I don't care' attitude of the beneficiary communities. To improve on the previous practice, the PTF decided to involve the beneficiary communities right from inception to the completion and they were made to appoint Water Users Committees to be responsible for collection of water levy, operation and maintenance of the systems. Members of the executive of these committees included the Chairman, Vice Chairman, Secretary, Assistant Secretary, Treasurer, Public Relations Officer, Security and Operation/Maintenance Officers.

1.4 Who Initiated the Practice:

The Federal Government of Nigeria (FGN) approved new pricing of petroleum products in October, 1994, and promised that the gains which accrued from the new pricing would be strictly computed, put into a special account and invested in social and infrastructural projects for the benefit of the citizenry. In order to ensure the efficient and diligent utilization of these gains, the Federal Government established by Decree No. 25, a Petroleum (Special) Trust Fund (PTF) and constituted a nine member Board of Trustees to manage the Fund and implement its programmes. As a Trust Fund established to function as an intensive intervention domestic finance organization within government development strategy, PTF shall seek to revive the confidence of the Nigerian citizen in a public institution's ability to credibly implement development projects.

The enabling Decree establishing the Fund identifies seven key sectors in dire need for intervention. These are:

1. Roads, Road Transportation and Waterways
2. Education
3. Health
4. Food Supply
5. Water Supply
6. Security Services
7. Other Projects

The Fund's intervention is restricted to socio-economic projects within the sectors spelt out in the enabling decree and under the jurisdiction of Federal, State or Local Governments. Projects that do not fall under the above sectors but are deemed to be in line with the objectives of the Fund will be considered under the "Other Projects" sector.

The Fund is to liaise with and encourage various arms of Governments at all levels and their agencies, communities and individuals to initiate or identify projects that require intervention of the Fund, provided always that the end use is always open to the public with no restrictive use or ownership. Among the areas of intervention by the Fund, under the Water Supply sector, is the rehabilitation/construction of motorized and hand pump boreholes to provide potable water for both human and animal consumption.

1.5 The Management of the Practice:

While the nomination of the community to benefit from the project lies in the hands of the various Local Government Authorities, the design and construction stages are jointly managed by the Consultant (representing the PTF), the Contractor and a Committee appointed by the beneficiary community. The selection of the type of scheme to be provided and its acceptable site are finalized by the Consultant, in consultation with the Community, after which the Consultant advises the PTF on the feasibility and cost implication. When approved, the PTF appoints a Contractor for the construction of the works. During the construction period, the beneficiary committee is trained by the Consultant on the operation and maintenance of the project and on how to mobilize funds for the maintenance and renewal of the facility. At the end of the maintenance period the scheme is handed over to the community for operation and maintenance. The community appointed Management Committee constituting of a Chairman, Deputy Chairman, Secretary, Treasurer, Operations & Management Personnel and Security Personnel. While the community agrees on what amount each house-hold is to contribute monthly to the maintenance and renewal fund, the Committee is charged with the responsibility of collection and management of the fund.

1.6 The Occurrence of the Practice:

This Practice, being a National Programme, was implemented in seven (7) communities per each Local Government Area in Nigeria. But the type of scheme implemented varies from rehabilitation/construction of Hand Pump Boreholes to rehabilitation/construction of Motorized Boreholes, depending on the prevailing hydro-geological condition of the area.

PROCESS AND APPROACH

2.1 Tools and Method Used

Base line survey of the potential beneficiary communities all over the country was sponsored by the PTF and conducted by Consultants, to ascertain the feasibility of drilling boreholes, the need for the schemes and the readiness of the various beneficiaries to participate and contribute to the maintenance of the system. Prior to the Base Line Survey, all the Local Governments in Nigeria were contacted through their State Governments, to furnish the PTF with lists of five (5) prospective beneficiary

communities for construction of new borehole-based schemes and two (2) existing borehole-based schemes to be rehabilitated. The Consultants were then instructed to conduct reconnaissance survey of the nominated communities and recommend for their suitability or otherwise based on the following guidelines:

1. The population of the community should not exceed 2,000 (two thousand).
2. Either there is no existing functional potable water scheme or an existing scheme is grossly inadequate to meet the demand of the community.
3. The prevailing hydro-geology of the area is suitable for drilling and completion of a hand pump borehole (only in some exceptional cases that new motorised schemes were allowed due to the deep nature of existing aquifers).
4. The nominated community is willing to take over and contribute to the maintenance of the completed scheme.

Based on the data collected, contracts were awarded for the drilling of boreholes and completion of the recommended schemes. During the construction works, consultants were employed to supervise the works, mobilize the community to form water users committees and conduct maintenance training of the nominated members of the committees.

2.2 How it is implemented:

To standardise the projects all over the Country, manufacturers and suppliers of the various material and machinery to be used were recommended to the Drilling Contractors by the PTF. To avoid escalation of material prices that may cause variations to the original contracts, agreements were signed between the PTF and the recommended manufacturers/suppliers that the material and machinery to be incorporated into the works will be available and have stable prices through out the contract period. Also back up spares will be made available in the market. Although advance payments were given (under guarantee) to the various contractors, subsequent payments were made only on issuance of measurement certificates by Consultants. Maintenance training of the beneficiary community by Contractor, under the supervision of the Consultant, was also part of the Contract. So that at the end of the construction period, the project is handed over to the community for operation and maintenance.

2.3 The need for the Practice:

The promotion of community participation in water and sanitation project is important for the following reasons:

1. **Effective Operation and Maintenance:** It is estimated that about 30 – 50% of small water systems in the developing world are out of service on any given day. Even temporary breakdowns can force entire community to revert to traditional, contaminated water sources long enough to become infected with water related diseases. Therefore community management of operation and maintenance is necessary for the success of the water system.

2. **Money saving to the Water Authority: Community involvement in operation and maintenance saves money by reducing the number of expensive site visits by outside maintenance personnel.**
3. **Enhances the ability of the community to undertake further development of the water project: Water supply projects are well suited to encourage other local initiatives for a variety of reasons. First, many of the benefits of a water system are immediate and visible. Most communities give high priority to improving their water sources and often willing to work hard on such projects.**

3. ANALYSIS OF THE PRACTICE

The practice can be said to be successful for the fact that the construction works went on smoothly in most sites due to the checks and balances incorporated in the contracts. The beneficiary communities were made to understand that the projects belonged to them, and as such they felt responsible for the up-keep of the works. Most of them are collecting monthly levies from each family and have opened accounts for the running of the schemes. Those having hand pump schemes are now able to service their pumps without waiting for Government to do it for them. While those having motorized schemes are providing fuel and lubricants for running their generating sets.

Each selected Local Government in the country has been allocated with either five hand pump or two motorized schemes, depending on the prevailing depth to water table in the area. At least 500 communities are now enjoying the potable water provided by the programme. The community based operation and maintenance arrangement in this programme has relieved the Government from the recurrent expenditure associated with the projects and at the same time the communities are considering it a duty to contribute and maintain them so as to continue enjoying the water supply.

4. OUTSTANDING ISSUES

Although the manufacturers of the installed hand pumps and the suppliers of submersible pumps in Nigeria have promised to keep reasonable stock of spares as maintenance back-up for the projects, there is the fear that some communities, especially those with motorized schemes, may have to depend on their Local Governments or Water Authorities for the procurement of major repair items. This may lead to the total abandonment of the water schemes in future. This is because all the money that may be raised from the monthly levies may only be enough to purchase the fuel and lubricants required for operation and conduct minor maintenance works, nothing may be left to take care of the future replacement cost.

5. LESSON LEARNED / CONCLUSION

While every Government tries its best to make potable water available to its people, its sustainability is becoming very difficult due to rising cost of operation / maintenance and the unwillingness of the consumers to pay for the services. Therefore, to improve sustainability and reduce the burden on Government, the

beneficiary communities were charged with the ownership of the Government funded schemes. In this way they are made to feel responsible for the well being of their water supply systems, thereby making sure the schemes last. Despite the fact that the communities are running the scheme, the Government may have to assist with major repairs that may be above the capacity of the communities. Otherwise most of the schemes may be abandoned in future.

REFERENCES

1. PTF (1995): General Principles and Conditions for Funding Projects.
2. PTF (1995): The Project Cycle.
3. WARDROP ENGINEERING INC. (1997): Background Information on Community Participation and Management (PTF Community Management Workshop).

Water Utilities Project No. 5

Strengthening the Capacity of Water Utilities to Deliver Water and Sanitation Services, Environment Health and Hygiene to Low Income Communities.

Case Study for Kano (town), Nigeria

EXCRETA DISPOSAL FROM PIT LATRINES

PRACTICE: COLLECTION AND DISPOSAL OF SOLID WASTES I.E. EXCRETA IN LOW INCOME AREAS OF KANO CITY

1 THE DESCRIPTION OF THE PRACTICE

1.1 What is the Practice:

The Practice is the collection and disposal of solid excreta in some low-income congested areas of Kano city by night-soil²² attendants. The night-soil attendants are the people who undertake the evacuation of excreta from pit or bucket latrines. In fact, their services now transcends households. They also render the service to community dispensaries and schools. The contract sum to evacuate a pit latrine ranges from N1,000 (US\$10) to N5,000 (US\$50) depending on the volume of the excreta and the distance from the disposal site.

1.2 Why the Practice

The practice was developed to provide an effective means of removing excreta from the household or institution where there are no sewers, or septic tank and soak-away and no enough space to bury the excreta. In low- areas where households have adequate space, a filled pit latrine is abandoned and another one built near it. By the time the second one fills up, the first has already decomposed and become soil such that the house hold can now dig a latrine there for the second time. However, in the cases where there is no space for another pit latrine, the household is forced to get the filled one evacuated. The other reason advanced was that most of the latrines are now housed in small rooms and it is considered cheaper to evacuate it than to build another house and latrine. Bucket system latrine is also widely used in some parts of the low-income areas and buckets need to be emptied from time to time. The use of latrine seems to be in the increase due to the fact that the population growth of the town is higher than the increase in water supply leading to chronic water shortage to flush toilets in most of the low income areas.

1.3 The Purpose of the Practice:

The practice was developed to provide an effective, cheap and accessible means of removal and disposal of excreta from a household latrines so that the members can continue using the same latrine in a sustainable manner. Some parts of the congested low-income areas of the Kano city do not have adequate or affordable water supply to be used for flush toilets. The use of the practice became necessary when the latrines are filled up. The practice helps to provide a cleaner and healthier environment within the households.

1.4 The Initiation of the Practice

The practice was said to have been brought into Kano by early Arab traders from North Africa who came and settled in Kano prior to colonisation of the country by the British²³. They were said to have settled in the centre of the city and engaged local inhabitants to evacuate and clean their latrines. At that time, the Arabs, the local traders and other

²² Night soil: Friendly term used for human excreta

²³ Interview with some elders in Kano old city.

well-to-do people and community leaders of the city had latrines while most of the ordinary citizen go to bush to defecate. The idea of the evacuation came about when it was considered much more economical to evacuate the pit located in building to build new ones.

1.5 The Condition Under which the Practice Operates

The practice operates within:

- Low-income urban dwellers who cannot afford to build another latrine together with the shelter but find it cheaper to engage the night soil men to evacuate the filled one.
- Congested areas of the city where there is no enough space to build another latrine when the existing one fills.
- Lack of water or lack of resources to have water connection to enable the use of flush toilet.
- Lack of funds to build and equip a flush toilet.

The practice operates mostly within the low-income areas of the city particularly within the congested areas of Kano town covering three local government areas of the city, namely Municipal, Gwale and Dala. However, it is more expensive in the more congested parts of the city because of lack of access road to bring their hand carts to the households and the fact that the dumping sites are far away from the old traditional congested city centres.

1.6 The Management of the Practice

The practice is provided by private individuals as well as organised independent groups. In the case of the private individual, each night-soil-man works for himself and is contacted in his house to carry out the excreta disposal. Each one of them is known in the neighbourhood. However, the private individual practice is said to be giving way to the organised independent groups. The customers now contact the leader of the group of his choice who would then select a night-soil-man to visit the customers premises, inspect the latrines and agree on the price for the evacuation. Depending on the magnitude of the work, the night-soil-man may carry out the work alone or in company of one or two others.

1.7 The Stakeholders of the Practice

The major stakeholders of the practice and their roles are as follows:

- Individual household owners: These pay and enjoy the service directly.
- Communities where the practice takes place and their neighbours: The removal and disposal of the excreta from the communities help in ensuring a clean and healthy environment for the communities.

- **Night soil attendants:** They earn their livelihood from the practice. In a community that is very poor and rate of unemployment is extremely high, the attendants are contented to have something to do to earn a living. They also contribute in keeping the community clean.
- **The local government/ Local ward heads/ Sanitary inspectors:** The local authority has a responsibility to work with their community to improve their health, welfare and general well-being. They ensure that all activities within a community do not impact negatively on the environment and health of the community. Specifically, the sanitary inspectors ensure that the night soil attendants do not carelessly pollute the area while conducting their work. They are also responsible for ensuring that the excreta is safely dumped in an appropriate manner. (However, this aspect is grossly neglected resulting in dumping of excreta in an open ground in the outskirts of the town where domestic animals – especially goats – graze.
- **The State Government:** In principle, the State government does not approve building plans within Kano Metropolis which do not have flush toilet system. It also stipulates that a pit latrine shall not be constructed in areas where the water tables rises up to 6 meters to the ground level for most parts of the year for fear of groundwater pollution. Generally, the government discourages the use of latrine system which requires periodic evacuation. However, most of the buildings in the congested old city have no approved building plan because they were in existence before the introduction of modern land allocation and approval of buildings. The areas are so congested and lack adequate water to enable proper function of flush system toilets. The authority therefore cannot stop the practice since it cannot provide an alternative.

2. PROCESS AND APPROACH

2.1 The Technology, Tools and Methods Used

The practice employs the use of materials to evacuate a filled pit latrine and dispose of the excreta by conveying in large buckets either on the head or in a handcart. The latrine is then trimmed to the requirement of the owner and the top cover reconstructed usually using wood and clay or reinforced concrete. The practice is carried out with the following local materials:

- Diggers or hoes for excavating hardened excreta
- Shovels for removing the excreta and putting in containers
- Buckets for conveying the excreta out of the household where a hand truck cannot enter
- A long wooden stick for measuring the depth of the latrine.
- Small hand truck for conveying the excreta to the dumping site
- Kerosene and ash used in controlling odour.

The night-soil men claimed that at one time they had boots, hand globes and head cover but now they cannot afford to buy these protective materials. Fig 1 shows the tools used while Fig. 2 shows the night-soil man carrying a bucket.

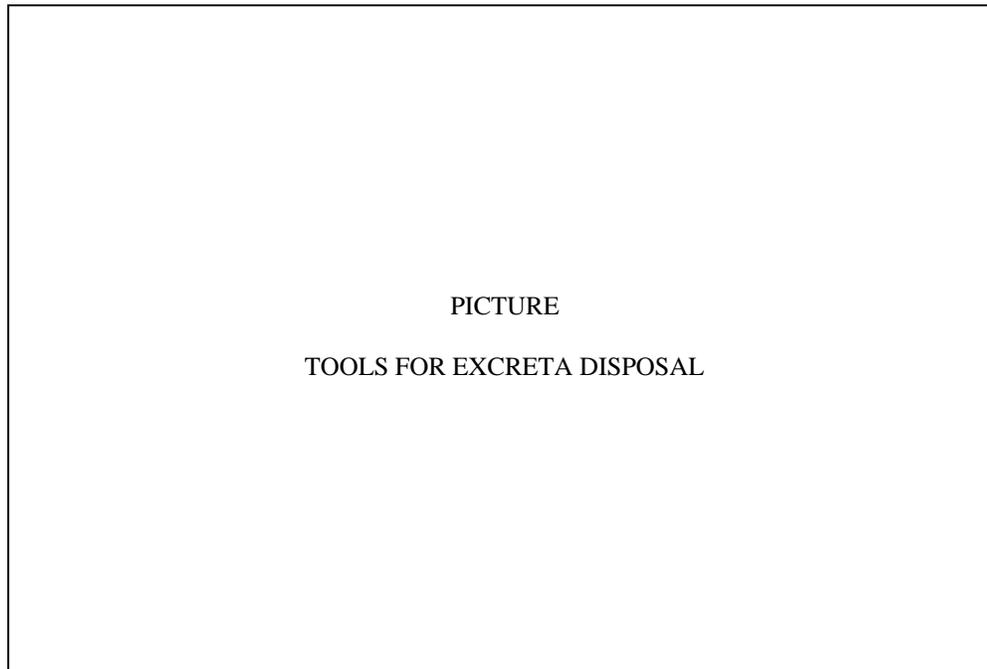


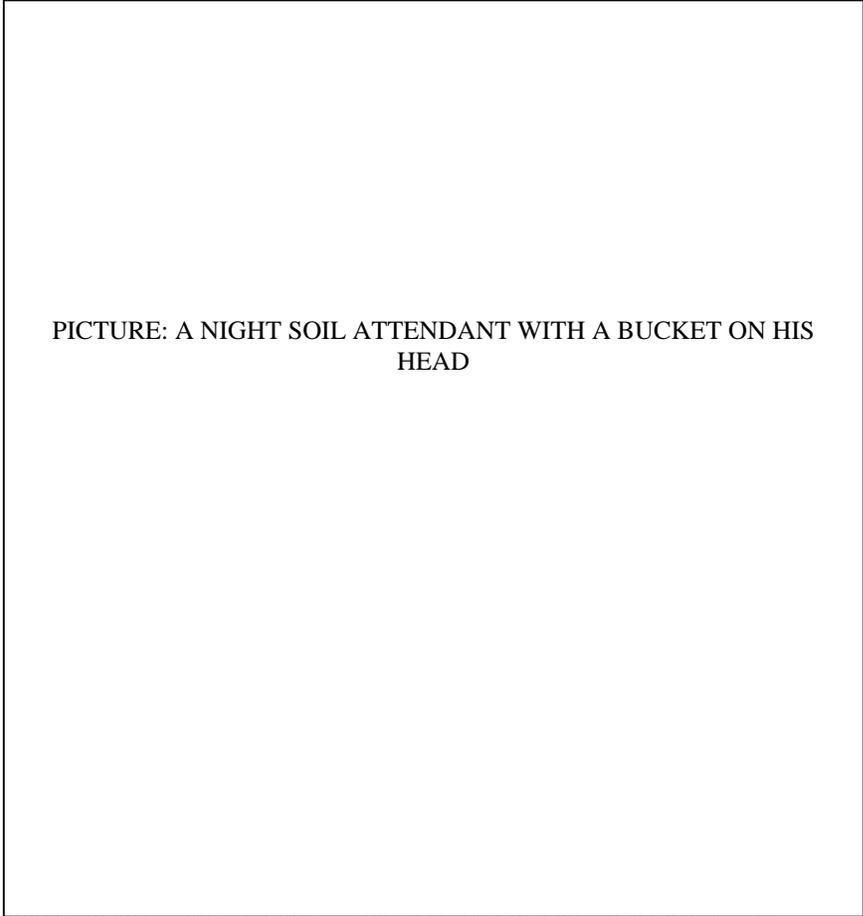
Fig 1: Tools for the Excreta Disposal

No manual or any other documentation for guiding the practice was made available during this study. In fact, the Kano State Environmental Planning and Protection Agency (KASEPPA) does not approve building plans without water flush system incorporated in the site.

2.2 How the Practice is Being Operated:

Once an individual household or organisation establishes that its latrine is almost full, it contacts a known night soil attendant or the organised group of the night-soil men to evacuate it. The night-soil attendants determine the cost by approximating the volume of the latrine. A long stick is sunk into the latrine to determine the depth. The evacuators charge between 1,000 to 5,000 Naira (10 – 50 US\$) per pit latrine depending on the volume. Upon reaching a contractual agreement, the evacuators come to the latrine very early in the morning (usually around 4.00 am), before people come out to commence their morning activities, to commence evacuating the latrine.

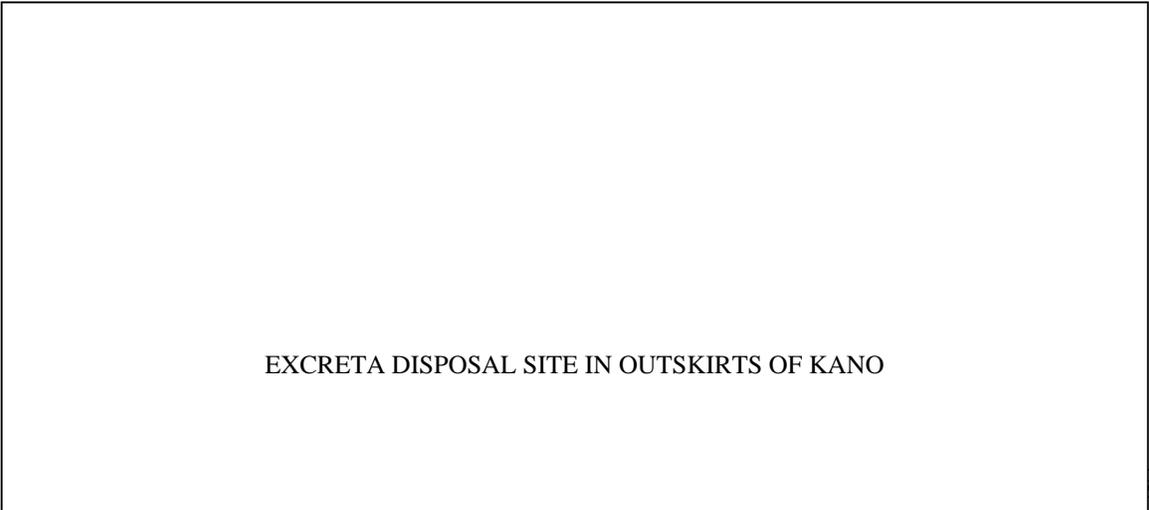
The evacuation process is commenced usually by applying some kerosene to effectively contain the defecation humidity followed by application of ash to control odour. The excreta is then dug and evacuated using diggers and shovels and loaded into buckets for transportation to dumping sites. Some of the evacuators have hand cart which enable them load few buckets at a time. As soon as the morning starts getting bright and people start coming out, the evacuation is suspended until the next day at dawn. Since the pumping sites are usually located far away at the outskirts of the town, the evacuation usually takes more than one day to complete.



PICTURE: A NIGHT SOIL ATTENDANT WITH A BUCKET ON HIS HEAD

*A night soil attendant carrying evacuated excreta in a bucket for delivery to
A cart for conveying to the dumping site*

There are a number of designated dumping sites in the outskirts of Kano. The dumping sites used to be deep wide pits. However, most of them have been filled up and dumping still continues as shown in the picture below. The authorities have not stopped it nor provided new sites.



EXCRETA DISPOSAL SITE IN OUTSKIRTS OF KANO

3. ANALYSIS:

3.1 Stakeholders Assessment of the Success or Otherwise

Discussions were held with the stakeholders on their views in terms of the effectiveness, efficiency, reliability and accessibility of the practice. Below is the report:

- (a) **Customers:** It is very efficient because it is easy to operate and is done to their satisfaction cheaply. It is effective because it keeps the house cleaner and saves them the trouble of having to go out to ease themselves. The charges are moderate and the operators are reliable. They do not fail their customers and adhere strictly to the agreement during the execution of the contract. However, they want government assistance by providing them with adequate water so that they too can enjoy flush toilets. The practice is reliable and affordable because once you do it, it takes a very long time to repeat it. The practice is accessible to all those that are willing to pay for the services.
- (b) **The State Government (KASEPPA is the government agency responsible to the practice):** The practice is fairly efficient in low income areas of the city because of lack of any other cheaper alternative. It is affordable to the poor since they have been using it for decades. It is effective as it helps to keep the houses in these poor communities cleaner. It is also effective because the low-income areas have remained relatively free of indiscriminate defecation and the houses have been fairly free of human excreta odour in spite of periodic water supply shortage. It is reliable as long as they keep to guidelines and advise of the KASEPPA.²⁴ The practice is accessible to all the households of the low-income area because it is carried out once a year or once in every two or even three years. The agency does not approve new building plans without provisions for flush toilet. The intention is to abolish the use of latrine in the city when the public water supply improves adequately to warrant the use of flush toilet system in the area.
- (c) **Local Government:** In the absence of other better, affordable and workable system, the practice is desirable, efficient, affordable and effective. However, the practice lacks better technology and needs the support of the government.

²⁴ We were unable to see or obtain copies of the guideline from KASEPPA was not successful. But they provided a guideline for the construction of the latrine.

- (d) **Night Soil Attendants:** The system provides means of living for them even though they are looked down in the community as degraded people. They have to operate during late night and early hours of the morning when people are still in beds. Their job is essential to all the households and that they contribute to bringing better life to the community. They think that their charges are too low but most households are either not willing or cannot afford to pay more. They need more tools and protective wears like boots, hand gloves and rain coats but most of them could not afford them. They also claim that their work is simple and meets the objectives of the benefiting households and the communities. The major problem with the practice is that their greatest number of customers are located within the congested old city centre and that this area has no access road to allow them take their hand carts to the customers premises. Coupled with this is the fact that the centre is very far from the excreta dumping sites which are located at the outskirts of the peri-urban Kano.
- (e) **Kano State Water Board:** It is aware that lack adequate water necessitates the use of latrine leading to use of the practice. The problem is similar to almost every city in Nigeria where water supply infrastructures are not sufficient to meet the ever growing population of the urban centres. The board has just completed a Master Plan to address these problems but lack of funds had continued to be the major problem. The board ensures that the excreta dumping sites are not located near its raw water sources.
- (f) **Community Neighbourhood:** Some people in the neighbourhood communities who use flush toilets described the practice as deplorable and degrading on the people of the city and on the night soil attendants. They called on the Government to decongest the city by providing houses in new layout areas and provide them with social services like water and electricity and then ensures that everybody uses a flush system toilet.

3.2 **Impacts: Expected and Unexpected**

The practice effectively removes excreta from the households thus reducing bad odour and spread of human waste related diseases. It has also made it possible for the communities to maintain and continue to use the same household latrine for decades. Due to congestion and lack of spaces to add more latrines, more extended families tend to use the same latrine as a household grows. In fact even some households that have space for a new latrine find it cheaper to get the old one evacuated. Despite occasional family conflict, the sharing of facilities within a household promotes extended family system.

Farmers also used the dry manure from the dumping site to fertilise their farms.

However, the same increase in the number of people using a single latrine also increases the risk of spread of diseases. Similarly, the dumping of the excreta in the outskirts of the city has very serious health hazards. The sites are too close to the peri-urban communities. Domestic animals also graze within the vicinity of the dump. Rats, flies and other insects easily roam between the settlements near the site and the site thus making it possible to easily spread diseases.

3.3 Assessment of Replicability and Sustainability

The practice has been spreading in many parts of the city. In fact some government institutions like schools and dispensaries use them. As the population continues to increase faster than the increase in water supply, more flush toilets systems failed to function effectively due to lack of adequate water. The alternative has been the use of latrine and employing the services of the night soil attendants to evacuate it when filled. In order to safeguard ground water from pollution and ensure healthy environment, KASEPPA has given guidelines for the construction of the latrine.

For this practice to improve sanitation and in any other place, there is a need to improve its implementation. There are three aspects to consider in this practice. The first is the removal of the human waste from these congested low-income communities, the second is the safe disposal of the waste away from any community and the final is an efficient and safe method of the evacuation and transportation of the waste. Only the first aspect is achieved satisfactorily in this practice. The other aspects need improvement without necessarily affecting the affordability and accessibility of the practice within the community.

If the local and State governments could assist in providing the night soil attendants with protective clothing, vehicles for transporting the waste and safe disposal sites (instead of the current dumping method), the practice could be well enhanced and be recommended for replication elsewhere.

4. OUTSTANDING ISSUES

4.1 External Condition which Affect the Practice

There are two important external factors that affect the practice. The first is the provision of adequate water supply to enable effective use of flush toilet system. Once the water supply is adequate and affordable, most people will resort to the flush system toilet. KASEPPA insists on inclusion of flush toilets, septic tank and soak-away in all buildings submitted to it for approval. However, in some places there is water shortage to make the system workable.

The second is the provision of access roads to the congested areas. This will allow the moving in of handcarts and small vehicles to bring out the waste.

4.2 Information Gaps

The night soil attendants are usually not educated. They are considered as the degraded people of the community. They know themselves but are not too keen for publicity. This study got full co-operation from one of them on the understanding that the case study is aimed at improving their working condition, but most of them shy away. In the case of government officials, no document could be made available on the regulation of the practice. It is a practice that has gained prominence, used by many and acknowledged by the authority but which the authority does practically nothing to assist

or promote it. At the inception of the present elected civilian government, a Transition Committee was set up to advise on the take-up of the government. The committee in turn established up a sub-committee on environmental sanitation which looked into refuse disposal problems and a clean environment. The committee made a number of recommendations one of which specifically addressed to the issue of excreta dumping sites. The committee said it identified “uncontrolled dumping of excreta collected by private Night Soil collectors due non-provision by the Government to them specific places/sites for dumping such excreta.” It then recommended that “Private Night Soil collectors should be provided with excreta dumping sites at various locations in appropriate and suitable sites because they are serving the society and helping government towards provision of social services”.

5. LESSON LEARNT AND CONCLUSION:

This practice tries to handle a major problem that concerns environmental quality and housing in low-income areas. The problem it addresses is largely manifested in the inadequacy of human waste disposal system. The problem of human waste disposal is sometimes more serious in parts of the city mainly serviced by the pail or flush system than those mainly dependent on the pit latrine system. Ideally, the flush toilet system is to be preferred and current efforts by KASEPPA in urban development insists on this system. Experience, however, has shown that the flush toilet system can be as unsatisfactory as the pail system under conditions of prolonged water shortage – a common phenomenon in Kano and most urban centres in Nigeria. Therefore current efforts towards modern sewerage system must be matched by even greater efforts to ensuring improved and sustainable water supply. This is likely to take a long time to achieve. Meanwhile, the authorities need to support the current practice by improving on the tools, the safety of the attendants and dumping sites.

This practice, if enhanced in terms of its delivery, can be very effective in a congested low-income areas that have no pipe water supply system.

Reference:

- Nigeria in MAP – K. M. Barbour, J.S. Oguntoyinbo, J.O.C Onyemelukwe and J. C. Nwafor. Published by Hodder and Stoughton
- Report of Transition Sub-committee on Environmental Sanitation of the Newly Elected Kano State Government.
- Kano State Public Health Edict –1984.

Water Utilities Project No. 5

**Strengthening the Capacity of Water Utilities to Deliver Water and Sanitation Services,
Environmental Health and Hygiene to Low Income Communities.**

Case Study for Kano (town), Nigeria

**COMMERCIAL SOLID WASTE COLLECTION AND DISPOSAL IN KANO
(Case Study of Clean Town Engineering Company)**

PRACTICE 4: COLLECTION AND DISPOSAL OF SOLID WASTES
BY PRIVATE COMPANY

Case Study on Clean Town Engineering Company (Nig.) Limited:

1. DESCRIPTION OF THE PRACTICE

1.1 What the Practice is:

This practice is the collection and disposal of solid wastes by private individuals and companies, in this case, Clean Town Engineering Company. It is a Limited liability company undertaking collection and disposal of solid wastes on commercial basis. Its services include street / market sweeping, supply of refuse bins, collection and disposal of refuse. At present its services are available to individuals, private and Governmental organisations within the Kano Metropolitan area. The clients (usually household owners or premises owners) enter into an agreement with the refuse collection and disposal company spelling out the estimated quantity of refuse to be collected per specific interval of time, based on which the company advises the client on the monthly charge. The current average charge for a client having a single 200 litre refuse bin, to be cleared weekly, is N500.00 per month. The refuse is being disposed off through dumping and levelling barrow pits in designated areas approved by the Kano State Environmental Planning and Protection Agency (KASEPPA). They operate a workshop for the maintenance of their machines and equipment.

The different stakeholders include the waste disposal company and their customers - owners of residential houses, hotels, markets, hospitals, companies, the local authorities and Ministry of environment.

1.2 The Purpose of the Practice:

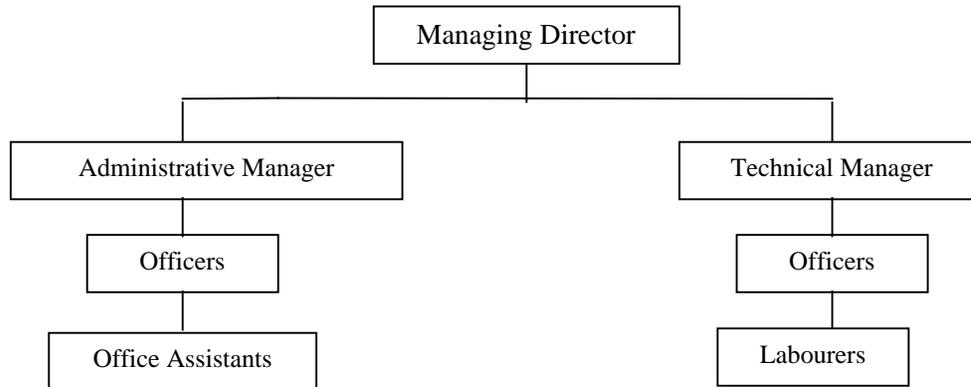
The practice was developed to complement the efforts of the local and the State governments, Ministry of Environment and its agency KASEPPA in keeping Kano clean. The waste disposal companies came up because they found out they could make profit in the business of collection and disposal of wastes.

1.3 Who Initiates the Practice

The owner of the Clean Town Engineering Company claimed that he initiated it in Lagos and later opened the company in Kano. Most of the waste disposal companies were initiated by their owners. They then began to enlighten the communities on the need to have clean environments in the course of which they were able to have more customers. For example, one of the companies, WASCO which is a Lagos-based company was given a contract by Kano State government for the collection and disposal of wastes in Kano City and the government issued a circular to the houses informing them of the engagement of the company and on the need to patronise it. These operators do embark on enlightenment campaigns by advertisement in radios and televisions. This has resulted in their having more customers. They do send questionnaires to their customers to fill. The aim of this is to see that they serve their customers better. Once in a while, they organise public meetings with their customers.

1.4 The Management

The Clean Town Company was managed by a Managing director who is the owner. The company has the following management structure



In terms of institutional arrangements, a waste disposal company has Managing Director as Chief Executive officer. The Administrative Manager and Technical Manager are answerable to the Managing Director. The Administrative Manager is responsible for administration. He has accountants, auditors and administration officers who are responsible to him. The Technical Manager is responsible for all technical matters. He has engineers and sanitation inspectors who are responsible to him. Down along the ladder are the drivers, mechanics, labourers and messengers etc. The companies are presently self-financing as far as operation and maintenance is concerned.

1.5 The Beneficiaries

It is difficult to know the number of people served as the operators of the private waste collection and disposal companies maintained secrecy so much in this case. However, the local government areas covered by these operators are Kano Municipal and Nassarawa. The primary beneficiaries are the end users and the private operators. The local and state governments are also beneficiaries in that the company complements their efforts of achieving clean environment.

1.6 How long has the Practice Been Operating:

This practice started back in 1984 when the then Military Government lunched a programme titled 'war against indiscipline'. Lack of environmental sanitation was among the items attracting severe penalty. Household owners welcomed the coming of a company that assisted in complying with the regulations introduced under the programme.

1.7 Where it is Being Used and Its Spread

There are other few private operators of waste collection and disposal in Kano City. The common ones are Kano Foundation and Waste Disposal Company (WASCO) and Rubbish and Garbage Limited. The practice has been operational in Nigerian cities like Lagos and Onitsha but it is not clear whether the system was transferred from these cities as the operators in Kano City said it was their personal initiative. However, one of the companies WASCO has been operating in Lagos before coming to Kano in April 1998. As for spread within Kano City, the system is expanding because of failure of government's agencies.

2. PROCESS AND APPROACH

2.1 Tools and Methods Used:

The private operators though have limited areas of coverage have been effective in their operations. The private operators and the government agencies like KASEPPA are involved in public education and enlightenment. They inform and enlighten the people as individuals, families or community groups to improve their environmental health and support the projects. The benefits of public education and enlightenment are highlighted as follows:-

- ❖ Environmental education to create awareness on the consequences of poor hygiene and sanitary practices.
- ❖ Community sensitization and education on privatisation, partnership and public participation in sanitation schemes.
- ❖ Developing and sustaining individual responsibility in paying sanitation charges, protecting and maintaining public facilities.

The benefits of public enlightenment are many. To effectively reap them, sanitation authorities should identify strategies and work out means of achieving them. One of such is the identification of specific target groups and preparing the means and medium of reaching them. Do we include environmental education in school programme or limit it to extra-curriculum activities such as drama and debating? How do we find material and financial resources to fund the campaigns? Will corporate and philanthropic individuals be willing to sponsor the campaigns or at least some jingles on radio and television?

2.2 How the Practice is Being Implemented:

The customers clean their houses and establishments and put the solid wastes in the supplied drums. They are also to ensure that payment for services rendered are regularly made. The waste collection and disposal companies on their part are to regularly convey the solid wastes from their customers' residences and companies to dumping sites. They are also to enlighten the general public on keeping a clean environment. On the cost per household, the waste disposal companies charges are dependent on the distance from the houses to the disposal sites.

The Clean Town Company initially started operating using 200 litres refuse bins placed in its client's compound. At an agreed interval, the company collects the filled up bins using pick-up vehicles and replaced them with clean ones, while the collected filled up bins are transported and cleaned at one of the approved disposal grounds. As the demand for its services increased, it became uneconomical for the company to be moving with replacement bins. Therefore it started using tipping vehicles such that the contents of every refuse bin is emptied into the tipper and the cleaned bin returned to the client's compound. At the end of every month the company's revenue collector goes round to the clients to collect the agreed fee and issue receipt.

The operators of this system are in charge of the operation and maintenance of their equipment and machines.

There are many reasons why this practice is set up this way; these include:

- (a) The government agencies, which had been involved in solid waste collection and disposal, have not succeeded.
- (b) The customers have been demanding private sector participation because of their effectiveness.
- (c) The local and state governments have funding limitations
- (d) Present government policy encourages private sector participation in wastes collection and disposal.

3 ANALYSIS

3.1 The Success of the Practice:

This practice of collection and disposal of solid wastes by individual or companies can be said to be successful or not depending on the stakeholder concerned. In general, where these private individuals or companies operate, the places are generally clean drastically reducing epidemic in these areas. Different stakeholders are actually affected by this practice and they include the Kano State government, Kano State Environmental Planning and Protection Agency, the local governments within Kano City, Ministry of Health - Kano State, Customers of solid wastes disposal individuals or companies and people living in peri-urban areas.

- (1) Kano State Government/Kano State Environmental Planning and Protection Agency - Information was collected from KASEPPA Headquarters by personal visits of consultants. The Kano State government through its agency KASSEPPA as part of its functions is to keep Kano City clean. However, because of limitations in funding, it cannot cope up. The agency sees the operation of the private individuals or companies as complimentary. The agency said this of the private operations.
 - Efficiency - They are efficient where they operate but are costly that the poor may not afford to patronise them. Their enlightenment programmes are limited in scope.
 - Effectiveness - They are effective where they are operating as the objective of having clean environment is being achieved in these areas. They have however limited number of equipment and vehicles especially waste disposal vans and trucks.
 - Reliability - They are not very reliable, as any default by the customers will result in the stopping of the services.
 - Accessibility - They are accessible in as much as the customers are ready to pay for services rendered.
 - (2) Local Governments - The local government areas within Kano City include Nassarawa, Municipal, Dala and Gwale. Information was collected from Nassarawa and Municipal local governments where the private operators are operating. Constitutionally, the local governments are supposed to be in charge of sanitation in their areas. However, because of population increase and other urban activities, these local governments see the operation of the private operators as complimentary. The Local Governments have this to say of the private operators.
-

- Efficiency - They are efficient in solid wastes collection and disposal but find it difficult to expend their profits on health and sanitation public enlightenment.
 - Effectiveness - They are effective among the individual houses, companies, hospitals, hotels and markets where they operate. They are not ready to operate in peri-urban areas except with government support.
 - Reliability - They are reliable but their area of coverage is small and may need government support for expansion.
 - Accessibility - They may need stronger trucks to operate in peri-urban areas because of bad roads and drainage.
- (3) Ministry of Health, Kano State - This ministry is responsible for public enlightenment on health and sanitation in the state. Information was got from Ministry of Health headquarters in Kano by personal visits of consultants. The ministry has this to say of the private operators.
- Efficiency - They are efficient in those places where they are operating. They however lack equipment for aggressive expansion of coverage.
 - Effectiveness - they are poor in public enlightenment on health and sanitation. It is only their customers that advertise their activities.
 - Reliability - They cannot be relied upon to cover the entire Kano City in their operation as they have limited equipment.
 - Accessibility - They are not accessible by people residing in pre-urban areas of Kano City. These places lack access roads and proper drainage.
- (4) Customers of Private Operators - These customers include individual house owners, hotels, hospitals, markets, factories etc. The private operators collect and dispose the wastes from the customers' premises while the customers pay for the services rendered. They have this to say of the private operators.
- Efficiency - They are efficient but expensive.
 - Effectiveness - They are effective as they come to collect and dispose the wastes as at and when due.
 - Reliability - They are reliable as they always endeavour to fulfil their own part of the contract.
 - Accessibility - All persons who have the money to pay for the required services have access to these private operators.
- (5) People leaving in peri-urban areas of Kano City - These are the unplanned areas where the low-income earners live. Information was collected from these people through oral interviews. They have this to say of the private operators.

- Efficiency - They cannot be said to be efficient since their cost is high that the low-income earners cannot afford.
- Effectiveness - They are effective where they are operating since these places are always kept clean.
- Reliability - They are reliable in the area of their coverage.
- Accessibility - The low-income earners do not have access to the private operators.

3.2 Impacts Of The Practice (Expected And Unexpected)

The practice, solid waste collection and disposal by private operators in Kano City, has made some impact in the cleanliness of the city. The impact is however minimal, since the operators will cover only two Local Government areas whereas Kano city is made up of six Local Government Areas. Even within the two local government areas covered by these operators, the actual coverage is below 15%.

The participation of the private operators have helped in reducing the heaps of refuse in some locations in the city. In fact, the practice has no impact on low-income areas of the city. The reason is associated with the fact that the low-income communities are either unwilling or unable to pay for the services. Most of the household contacted on their willingness to pay for commercial refuse collection and disposal claim that if they had money, their priority would be for payment of water and electricity. However with aggressive public enlightenment on the danger of having unsanitary environment as being championed by the chairman of Nassarawa Local Government Council, Alhaji Ahmed Ali, the people will be willing to pay for solid waste collection and disposal. The private operators can also be encouraged to start operation in the peri-urban centers by the government constructing accessible roads to these centers. When the Managing Director of this company was asked whether they have plans for such areas in the near future, he said they have started discussing the modalities with various Local Authorities in the urban area. He sited an example of his company's presence at Sabon Gari market where, with the help of the market Authority, they now have contract for the sweeping and disposal of refuse from the market, while payment is being made to them from the levies collected from individual traders. This arrangement, according to the Managing Director, has already become self-sustaining.

The practice generates profit to the owners and also provides employment to the citizens

These private operators are secretive in their operation. They don't easily give information on their mode of operation fearing the entry of more private entrepreneurs into this business of waste collection and disposal. With more public enlightenment and more private sector participation, the cost of waste collection and disposal will drastically reduce, therefore enabling the low-income earners afford the services of the private operators.

3.3 Assessment of Replicability:

The first private operation of waste collection and disposal in Kano city is called Clean Town Engineering Company. It started operating in 1983 with about 50 houses after some period of public enlightenment. Today the company has over 1000 customers. In other words its area of operation in terms of coverage has increased. As a result of the success of this practice, more private operators have entered into this business. Examples include Kano Foundation, and Rubbish and Garbage limited etc. This practice of solid waste collection and

disposal by private operators is operational in some parts of Lagos and Onitsha cities of Nigeria.

As said earlier, these private operators have medium and high-income earners as their customers. They do not operate within the low-income areas because the people cannot afford their charges. For this practice to be effective in low-income centres, the state and local governments need to embark more in public enlightenment on the need for the people to keep their environment clean, and the government as part of its responsibility to people need to subsidise for the collection and disposal of solid waste by the private operators in the peri-urban centres.

3.4 Assessment of Sustainability:

Presently the private operators are operating independently without assistance or co-operation from the government or communities. They are registered companies that operate like any other profit making company. In other words they have their institutional arrangements for management, operation and maintenance. They do not have support arrangements or external influences or inputs. The practice as of now can only collapse when the commitment of the owners is no more there or the government commits enough finance to its agency responsible for solid waste collection and disposal. These conditions are not realistic considering the enormous responsibility of the government. In the area of cost recovery the operators are effective that is why the companies are being sustained up to the present time. In order to ensure sustainability, the operators are being registered by the newly created Kano State Ministry of Environment. As registered companies, the operators can also obtain loan facilities from banks and other financial institutions or even from the government.

It has been said that the private operators serve mainly medium and high-income dwellers. If they are to operate effectively in the low-income centres of the city, the institutional arrangement may need to be modified. In this case while the private operators collect and dispose the solid wastes from areas, the cost is shared between the state government, the local government and the communities involved. For this to be effective, the roles and responsibilities of the stakeholders should be clearly defined with the state and LGA responsible for policy development and implementation, setting up of effective community mobilization strategies for awareness creation on the importance of sanitary habits; establish a system of cost sharing between the state/LGA/communities for the implementation; source funds for accelerated implementation of the programme; contribute financial and material support to LGAs and communities; and facilitate construction and monitor implementation. The community's responsibilities include mobilization and motivation of community members on the need for sanitary habits, identify and cost the resources needed for sanitation activities; ensure that households contribute financially, provide material support to households and monitor implementation.

4. OUTSTANDING ISSUES

4.1 External Conditions Which Affect the Practice:

There are some external conditions, which affect the practice. Over the years governments have known that for effective solid waste collection and disposal, the private sector will fair better. However for political reason the state government has been directly involved in environmental sanitation even though without success. Agencies like Refuse Disposal

Agency (REDA), Environment Task Force on Sanitation, Kano State Environmental Planning and Protection Agency (KASEPPA) etc have been created and scrapped. This attitude of the government has affected the private operator negatively. They cannot be aggressive in expanding their area of coverage because of government's direct involvement. Also more new entrants cannot be encouraged by this attitude of the government. They see the action of the government as competitive instead of complementary. Some of the crises that have been occurring in Kano city do affect this practice negatively particularly if operators are none indigenes. These crises could be religious or tribal.

4.2 Information Gaps:

There are information gaps, which affect the analysis of the practice. Most of the private operators are secretive about their operation. The consultants found it difficult having access to the operators. They see the consultants as people who will suggest to the government policies that will remove the private operators out of business. Where the consultants have access, information supplied by the operators are not specific. For example they could not specify the number of their customers and their addresses. On the communities of the low-income earners in the city, getting information was not also easy because of beliefs.

5 LESSONS LEARNED/CONCLUSION

5.1 Lessons Learnt

In the study of this practice – solid wastes collection and disposal by private operator in Kano City, some issues have been identified as very important:

- ◆ Urban communities are willing and able to contribute to the improvement in access to sanitation on a cost-sharing basis. That is, the communities pay some percentage for waste collection and disposal by private operators while the state or local governments pay the balance.
- ◆ This suitable programme requires adequate and efficient institutional arrangement at all levels of implementation.
- ◆ Full participation of the private sector in solid waste collection and disposal is highly welcomed since the government cannot cope up with the amount of waste generated.
- ◆ The state and local governments are engaged in public enlightenment on the need for a clean environment. The Honourable Chairman of Nasarawa Local Government Area is on radio regularly in this aspect.
- ◆ Women and children are proud stakeholders in this arrangement and are committed to the efficient operation of the system.
- ◆ Competition is a critical factor in ensuring lower prices to the consumers, therefore with more private operators in the solid waste collection and disposal business, the slum/peri-urban communities can afford their services.

WUP Project No. 5 is concerned with improving service delivery in low-income urban areas. Noting the complex characteristics and conditions of the low-income settlements, community based programmes involving community based organisations, non-

governmental organisations and other service providers are a necessary complement to utility managed sanitation services. The project ensures that partnerships are developed not only between utilities and communities but also between utilities and service providers. The private operators engaged in solid waster collection and disposal are the other service providers and therefore their operational modes and limitations can aid project No. 5

REFERENCES

1. Feachem,, R. et. Al (1980)
Water, Wastes and Health in hot climates.
A Wiley – Interscience Publication.
2. Wise F. E. Alan (1979)
Water, Sanitation and Waste Services for buildings.
B.T. Batsford Limited, London.
3. Foster S. Williams
Refuse Collection Practices.
Handbook of Municipal Administration and Engineering (USA), 13, 1 – 45.
4. Kano State Government of Nigeria (1990)
Kano State Environmental Planning and Protection Agency
Edict No. 15 of 1990
5. Yari M. Kabir (1999)
Challenges facing Water Supply and Sanitation Service Provision in peri-urban area of Nigeria. Paper presented at the Workshop on Water Utilities Partnership (WUP) Project at Kano.
6. KASEPPA (1999)
Issues affecting Environmental Sanitation in Kano peri-urban areas. Paper presented at the Workshop on Water Utilities Partnership (WUP) Project at Kano.
7. KASEPPA (1992)
Savannah Habitat magazine Vol. 1 No. 1 and No. 2
8. Olushola, Ismail and Habila, Othniel (1999)
Urban and peri-urban Water and Environmental Sanitation Project – UNICEF Initiative. Paper presented at the Workshop on Water Utilities Partnership (WUP) Project at Kano.
9. Oyekunle, M. O. (1999)
Oral Interview.
Clean Town Engineering Company Limited,
53 Airport Road,
P. O. Box 4130, Kano – Nigeria.