



ON-SITE BUT OUT OF SIGHT

CONTEXT ANALYSIS OF URBAN
SANITATION IN ENUGU, KANO
AND WARRI, NIGERIA

EXECUTIVE SUMMARY

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This study was commissioned by WaterAid Nigeria. The report was written by Timeyin Uwejamomere. It is based on findings of the research carried out by the Mangrove & Partners team led by the Project Team Lead and Principal Investigator, Timeyin Uwejamomere, and comprising Mr. Lookman Oshodi (Project Manager and Research Coordinator, Enugu), Mrs. Yewande Ogunnubi (Research Quality Control Coordinator), Mr. Alaba Kelani, (Research Coordinator, Warri), Mrs. Titilola Bright-Oridami (Research Coordinator, Kano), Mr. Temple Oraeki (Project Support Officer, Enugu), Mr. Weyinmi Okotie (Project Support Officer, Warri), Mr. Tsola Uwejamomere (Project Support Officer, Asaba) and Mr. Baffa Buhari (Project Support Officer, Kano).

Why a context analysis?

As part of WaterAid's commitment to supporting states and cities to utilise the window of the National Action Plan (NAP) in improving access to safely managed and inclusive sanitation services, the context analysis/study of urban sanitation in three Nigerian cities – Enugu, Kano and Warri – was commissioned to gain further insights on the key barriers and opportunities for catalytic progress in expanding inclusive sanitation access and the management of human waste across the sanitation value chain.

The context analysis has five main objectives, including, analysis of the institutional and legislative framework, description of the existing sanitation situations in the cities, establishing the existing business opportunities in the sanitation sector, past and current interventions by different stakeholders and evaluation of existing opportunities for financing in the sanitation sector.

Why Enugu, Kano and Warri cities?

The cities were selected following the analysis of an initial survey conducted as part of the project inception report. The analysis was designed to determine the value add of the study in each city and the ability of the context analysis report to enable WaterAid present a fairly nationally representative report of the sanitation situation in the country.

Study scope and methodology

The study adopted a simple, non-overly complex or theoretical approach. Information was sourced from primary and secondary sources to provide insights into the sanitation situation in these cities. To strengthen the secondary data sources and triangulate its findings, in-depth interviews were conducted with key informants and focus group discussions were held with stakeholders, specifically at local and state levels, as well as relevant corroborative discussions with national-level stakeholders. The researchers also called upon field observations at the household and community levels and purposive interviews with households to source, verify and validate information. All quantitative information was sourced from secondary sources.

Scope and arrangement of the reports

Five reports have been produced from this study. One report, for each state, which presents the context analysis findings of the sanitation situation in the state, with a focus on the study city. The study city reports contain the detailed findings at the state and city level. A synthesis report, providing a synopsis of the study findings with a national level view of Nigeria's sanitation situation makes the fourth report while a summary of the literature review is provided as an addendum to the reports. The reports are arranged in a manner that responds to the key objectives of the context analysis.

Enugu – key findings and recommendations

Enugu State is in the South-East geo-political zone of Nigeria. Enugu State has 17 Local Government Areas (LGAs). Estimated projection of the population of Enugu State is six million with 3% annual growth rate (Enugu State Government, 2017). Enugu City, the capital of Enugu State, was founded in 1915, to host coal mine workers. The city's population was projected as 996,481 in 2017, according to the 2006 National Population Census. Enugu City comprises of three local government areas namely: Enugu North, Enugu South and Enugu East (Enugu metropolis). Enugu has served as the administrative centre for the Eastern region, Anambra State and currently Enugu State. Hitherto a well-planned city with its grid layout formation in the 1960s and 70s, the Enugu metropolis, has lost its shine and several of its infrastructure has fallen into disrepair, including the Abakpa Estate Wastewater (faecal sludge) Treatment Pond.

Key findings:

The study found that pit latrines, squat toilets and open defecation are the dominant sanitation practice for faecal sludge containment in Enugu. Water closet systems are also in use. In addition, the study found that:

- Of the over 127,550 litres of faecal sludge produced in Enugu daily, only 16%–25% is safely disposed.

- The evacuation and transportation of the on-site sewage pits/soakaway is principally led by private sector evacuators, using vacuum trucks.
- Dispose of faecal matter at the only “official” dumpsite at Ugwuaji is fraught with challenges while the culture of reuse or recycle in faecal waste is yet to be formally mainstreamed into the value chain.
- State allocation to water, sanitation and hygiene (WASH) has been below 1.2%, between 2016 – 2019, the highest being 1.17% in 2018. This is grossly inadequate for the demands and urgency required to meet the gaps in the WASH sector in the state, including the construction of sanitary faecal sludge treatment facilities like the privately funded system at the Polo Mall (Shoprite) and Abakpa Estate.
- Six principal state policies and laws influence urban sanitation. The new, albeit draft, Water Sector Law of Enugu State (Final Draft) 2019, has adopted a rights-based perspective but may require further strengthening to rigorously address sanitation issues and provide an enabling environment for the private sector.
- There are six institutions with direct mandate on water and sanitation in Enugu State. However, none of the activities fully address all components of the sanitation value chain (SVC), presently.

- Although there are a few active civil society organisations (CSOs) in the city working on sanitation matters, the near absence of coordinated planning for sanitation has meant a very poor space for citizens' participation in sanitation across the SVC, beyond the provision of household services.
- Presently, women have almost an equal opportunity as men in the administration of sanitation at the state level with 41% of the senior management seats in the relevant ministries, departments and agencies (MDAs) occupied by women. The two key ministries, Environment and Water Resources, are led by women as Permanent Secretaries.

Key recommendations:

- From the sanitation practices assessed both in residential and public places, it is obvious that sanitation in Enugu is a mix of scenarios of poor practices as well as some best practices, with a combination of green and grey infrastructure. The pond at Abakpa Housing Estate is a classic example of a decentralised, communal green infrastructure to manage wastewater and faecal sludge in urban areas. Similarly, the treatment infrastructure at the Polo Park Mall (Shoprite) is another demonstration of the use of a contemporary technology to drive cost efficiency and end-to-end value

chain management in urban sanitation. It is suggested that there be a review of these facilities to draw lessons and outline an action plan for scale up across the city.

- There is a need for a specific institution to take direct responsibilities for successes or gaps in urban sanitation. As extant laws mandate the Enugu State Waste Management Authority (ESWAMA) to address human waste management, it is suggested that the implementation and oversight of roles under the various components of the sanitation value chain should be entrusted to a proposed Sewage Services Unit under the Department of Liquid Waste in the ESWAMA. Regulatory functions related to such roles should be entrusted to the proposed Regulatory Commission, restructured as the Enugu State Water and Sanitation Regulatory Commission in the new State Law.
- The role of local governments in urban sanitation is weak. Local governments should also be empowered, under a proposed institutional framework, outlined in the Enugu report, to carry out effective policy, strategic and operational roles in the sanitation sector.
- To address the challenges of sanitation, the report presents a roadmap for the development of an Enugu Metropolitan Area Integrated Urban Sanitation Plan.

Case Study: Polo Park Mall (Shoprite), Enugu Sewerage Treatment Plant



- The Palms Polo Park, also known as Polo Park Mall, was developed by Persianas Group in collaboration with the Enugu State Government in 2011.
- It operates a decentralised wastewater/sludge treatment systems (DEWATS), to serve the about 68 shops and 55 toilet units (including hand-washing and urinary facilities) within the shopping mall.
- The blackwater (from toilets) and greywater (from kitchens) are all channelled, in separate pipes, to the central sewage treatment plant (STP) located adjacent to the main gate of the shopping mall.
- The faecal waste and greywater from the kitchens first pass through a grit chamber, which is laid underground, before proceeding to other compartments of the treatment plant.
- The treated wastewater from the STP is presently discharged into the environment (drainage), while the faecal sludge is evacuated every 3-4 days and given to farmers to serve as manure.
- There is a second phase of the sewage treatment plant design, which entails recycling the treated wastewater and power generation. This phase is yet to be incorporated into the existing set-up.
- Water is supplied to the mall through a private-owned motorised borehole, which is the property of the mall.

Kano – key findings and recommendations

Kano State is located in the North-West geopolitical zone of Nigeria and consists of 44 Local Government Areas (LGAs), with an estimated population of 13,076,900 in 2016, and an annual growth rate of 3.4%. The main city, Kano, lies near the confluence of the Kano and Challawa rivers, flowing from the south west to form the Hadejia River, which eventually flows into Lake Chad to the east. Kano City, the capital of Kano State, is the commercial nerve centre of Northern Nigeria and is the second largest city in Nigeria, after Lagos. The city lies in the Savanna region that stretches across the south of the Sahel, covering eight local government areas (LGAs) — Kano Municipal, Fagge, Dala, Gwale, Tarauni, Nasarawa, Ungogo and Kumbotso. The total area of metropolitan Kano is about 499 square kilometres (193 square miles), with a 2016 population estimate of 3,931,300.

Key findings:

The study found that Kano is part of the North-West geopolitical zone which has the least incidence of open defecation in Nigeria at 10.3% as compared to 53.9% in the North-Central. However, improved household sanitation facilities in the inner city (within the city walls) is dominated by pit latrines with slabs, with very low numbers using flush/pour flush systems linked to a septic tank. In addition, the study found that:

- Over 503,206 litres of faecal sludge is produced in Kano daily with only 17% safely disposed.
- Less than one in 20 residents of Kano's population is connected to a piped sewer system. As a result of the poor layout of the old town and the predominance of pit toilets, two main evacuation and transporting methods operate in the city – the manual excavation of septage from pits into drums which are then conveyed to pick up vans by members of 'Gidan Kowa Da Akwai' (every household has it), a manual excavator group, who operate in the difficult to reach homes and the operators of vacuum trucks, Waste Disposal Vehicle Owners' Association.
- Two government supported dumpsites and a private land receive most of the septage and sewage from the city. At these sites, there is a growing practice of processing the faecal sludge into organic manure, sold to user-farmers in Kano and neighbouring states such as Jigawa.
- Private operators provide toilet and bathroom services, popularly known as 'Gidan Wanka', which service many city residents. It is estimated that there are thousands of such facilities in the city, most noticeably at road intersections, the city's markets, central motor park, and industrial areas. There is obviously a need for the regulation of this service to ensure standards and records of such facilities.

- Relative to Enugu and Delta states, the proportion of the Kano State budget allocated to relevant sanitation MDAs between 2017-2019 appears higher, with as high as 14.98% in 2019. However, the proportion of the budget that goes to MDAs with specific sanitation oversight responsibilities and mandates for sanitation investment is quite low compared to water supply. Analysis shows that the Ministry of Environment and the state Rural Water Supply and Sanitation Agency (RUWASA), both of which have clear responsibilities for sanitation, particularly FSM, received between 9% to 17% of the allocation to the water and sanitation sector in the last four years, 2016–2019.
- There is a near silence on sanitation in the provisions of the Kano State Water Sector Law 2016 and Kano State Water Supply Policy, 2007. Urban sanitation has been dominated largely by informal system of private sector activities while state urban sanitation plans and infrastructure developed in the late 1970s and 1980s have become moribund.
- There is a low level of citizens' participation in planning for the sanitation sector. This could be attributed to the lack of a system of planning for sanitation. Notwithstanding the limitations set by religious and cultural expectations of women, a lot of women in Kano metropolis own privately run public convenience businesses. The stigmatisation of sewage evacuation and disposal workers keeps women away from such investments. However, some women indicated a willingness to participate in this component of the sanitation chain if properly trained and funded.
- Children, as young as 5-year old boys frequently scavenge at the Kahuwa dumpsite, used by the 'Gidan Kowa da Akwai' operators. The children revealed that they give the money realised from the sale of the faecal sludge manure to their mothers. Female children were also on the site hawking meals.
- A key area of concern in Kano is the level of participation of women in decision making on issues related to sanitation and hygiene at the political, strategic and administrative levels of state leadership. Only 7% of senior management staff of 16 MDAs are women. None of the key ministries or agencies have a woman in senior management, including Water Resources, Budget and Planning, Education, Environment, Works and Housing, RUWASA, Water Board, and Refuse Management and Sanitation Board (REMASA). However, two of the six senior managers in the Ministry of Education are women.

Key recommendations:

- The study finds that the process of treating faecal sludge and turning this into organic manure is a profitable venture. The introduction of technology in the sludge/organic manure production process to enhance operators' performance, ensure safety and boost profit margins would require funding support to operators. Low scale semi-automated bagging machines, such as used in fertilizer production or rice mills could be one of such technologies to reduce human contact with sludge. Kano has very hot weather, suitable for the open air drying of sewage. The introduction of a drying bed, designed as cemented labs to further enhance the process of dumping, spreading and sorting of the sewage can also be considered to support the proposed adaptation of the fertilizer or rice milling technology for bagging the sludge. To improve the environmental/hygiene condition of the dumpsite and operators, the introduction of safety gears such as hand gloves, nose masks and replacement of kerosene with a more suitable odour control agent alternative would be necessary.
- The Department of Pollution Control in the Ministry of Environment has the mandate for management and regulation of faecal sludge while the Kano State Urban Planning and Development Authority (KANUPDA) regulates the activities of public conveniences. There is an urgent need to provide capacity strengthening support to both agencies to enable them deliver on their mandates and meet the needs of sustainable sanitation in the city.
- On realisation of the gaps in faecal sludge administration, state civil servants attending a focus group discussion (FGD) organised for the study, formed themselves into a committee and developed an action plan to turn around the sanitation situation. Support should be provided to this committee, or a variant of it, to lead a reform in the state, working with the coordination of the Department of Pollution Control.
- A key start would be to develop a Kano Metropolitan Area Integrated Urban Sanitation Plan, to provide strategic guidance in addressing the challenges of sanitation in the metropolis.

Case Study: Gandun-Sarki Model – A thriving market for the reuse of dried faecal sludge in Kano

At the privately owned Gandun-Sarki, Fanisau site, the faecal sludge business model is such that on the disposal of the sludge by truck drivers, the dumped sludge becomes the property of the land or site owner. Employees sort the sewage by removing all unwanted materials from the sludge. Kerosene and ashes are then spread on the sewage to remove odour and to absorb moisture. The sludge is then spread out and will usually dry up within 3-5 days. The dried sludge is then packed in small bags such as used cement or rice (jute) bags. Between 120 and 130 bags are sold at wholesale for about NGN 10,000 and single bags for NGN 160, mostly to farmers. The transportation of bags of sludge bought at wholesale could cost the buyer as much as NGN 6,000–10,000 depending on the size of the conveying truck and the location the manure is being transported to.



Spreading and bagging the dried sewage at the Gandun-Sarki dumpsite, Kano

Warri – key findings and recommendations

Delta State is situated in the South-South geo-political zone and has an estimated population of 4.2 million in 2018. There are 25 Local Government Areas in Delta State. The city of Warri is geographically located, south west of the state capital, Asaba. Warri, host of the headquarters of Warri South LGA, is one of the two major oil cities in Nigeria, as well as the most populated city and commercial centre of Delta State. As at 2019, the population of Warri is estimated to be 750,991 with an annual growth rate of 3.16% and average household size of 4.5 persons. In addition to Warri South, Warri metropolis also covers parts of Uvwie, Okpe, Udu, and Ughelli North and South Local Government Areas (LGAs).

Key findings:

Sanitation practices in Warri is dominated by on-site sanitary systems, with sludge and wastewater capture and storage in pits latrines, water cistern methods and soakaways. Several households, some as old as 100 years, in the low income, traditional homesteads or communities, were found without toilets and as such use riversides or defecate in cellophane bags, wrap and dispose in refuse bins. The state of public sanitation in markets, schools and motor parks is appalling. In addition, the study found that:

- Over 96,127 litres of faecal waste is estimated to be produced daily in the city, with only 25% safely disposed. Several households and public institutions were found with broken, leaky pits and soakaways.

- There is no central sewage system in the city. However, there is a functional sewage treatment plant at Edjeba (Shell) Estate, with the capacity to treat 1974.32m³/day. This facility receives sewage solely from the National Petroleum Development Company/Niger Delta (NPDC/ND) Western Estate at the moment, though it has the capacity to serve the whole Warri metropolis.
- Disposal of untreated sewage was at the Ugbomro burrow pits until recently, under a well organised evacuation and transport system, led by private sector faecal sludge service operators. However, a series of petitions and complaints from the residents of the community close to the site led to its closure in August 2019. With the closure of the Ugbomro site, the disposal of the untreated waste in undesignated areas, such as direct discharge into water drain or water bodies, highway and open drains, is bound to be on the rise.
- There is no practice of treatment and reuse of the faecal sludge in Warri.
- Between 2016 – 2019, the proportion of the state budget allocated to the principal MDAs in the WASH sector has been less than 1.2%. The highest percentage recorded was 1.16% in 2018. This is inadequate to address the challenges of WASH in Delta State.

Key recommendations:

- Citizens' voice and participation is very weak in Warri. A major player in the WASH space in Warri is the Foundation for Partnerships Initiatives in the Niger Delta (PIND). As a pioneer organisation in the region, PIND's attention should be directed at growing a CSO base that can in turn support citizens' voice and ability to hold duty bearers accountable while promoting a sense of responsibility for individual actions on sanitation.
- The administration of faecal sludge /waste management in Warri is lagging, with a focus on oil spill and industrial pollution control by state institutions. Under existing regulations, the Delta State Waste Management Board has the mandate for the regulation of faecal sludge evacuators including issuance of permit or license to operate across the SVC. There are clear policy interpretation/ implementation gaps, with respect to faecal waste treatment and disposal or reuse. To achieve sustainable sanitation, the Delta State Waste Management Board must lead in the provision and management of faecal sludge facilities, adopting all possible management options.
- Few local governments are taking active steps to implement and enforce the measures that regulations require. The new Warri/Uvwie and Environ Development Board could serve as a coordinator and facilitator of sanitation reforms in the Warri metropolis, including working with the state MDAs and relevant LGAs to develop and implement a Warri Metropolitan Area Integrated Sanitation Plan

Case Study: Edjeba Sewage Treatment Plant, Warri

The Edjeba Sewage Treatment Plant (STP) is the only functional facility currently processing faecal sludge in the Warri metropolis. The plant, a biologically operated system, is located within NPDC (National Petroleum Development Company) Western Estate at Edjeba, and operated by B2 Oil & Gas Project Limited, a private company whose interest cuts across oil and gas businesses. The operator says the plant has the capacity to manage all the sewage that is being generated in the Warri metropolis and its environs but currently serves only the NPDC Estate and other private users.



Exhauster trucks discharge point



Concrete containment facility in the premises

- Untreated sewage arrives at the Edjeba Treatment Plant through a centralised sewer system installed to collect faecal matter within the estate and exhauster trucks that transport faecal sludge.
- Sewage transported to the plant is removed from the trucks by gravity and emptied into a concrete basin.
- There are three stages involved in the sewage treatment; primary, secondary and tertiary. Primary treatment is physical, secondary, biological and tertiary, chemical.
- The facility has four drying beds for treated sludge.

- Further test on the sludge before drying reveals detection of some heavy metals and round worms. For this reason, the dried sludge is not made accessible to farmers as manure, but bagged and transported to Port Harcourt for incineration once in six years or more.
- The plant has a design capacity to treat 1,974.32 cubic metres of sewage daily, but currently operates on 50% of that capacity as one of the two 987.16m³ capacity compartments is down.
- The plant charges a discharge fee of NGN 8 per litre of sewage. In this regard, a 10,000-capacity exhaustor truck pays a total of NGN 80,000.00.
- A visit to the plant finds the entire environment is kept clean and without any form of stench.

Implication for National Urban Sanitation Policy and conclusions

The National Action Plan for the revitalisation of Nigeria's WASH Sector launched by President Muhammed Buhari in November 2018 identified certain actions the Federal and states must take to get on the road to sustainable urban sanitation in Nigeria. The Federal Government is expected, amongst other things, to: (i) fast track development of the National Policy on Sanitation (harmonisation of the various policies) and (ii) identify and support states to demonstrate citywide approaches to sanitation development. State governments are expected to: (i) ensure WASH responsibility is firmly established with State Water Agencies (SWAs) for urban and semi-urban centres, and with RUWASSAs for rural areas, (ii) design and construct modular cluster effluent treatment plants in the interim with a view to develop central sewerage in the long-term, and (ii) engage

public-private partnership (PPPs) in a transparent manner to promote and regulate effective containment, emptying, transport, treatment and disposal and/or reuse of faecal sludge. This includes conversion of sewerage into profitable outputs, such as cooking gas and organic fertilizer.

The outlined actions for states and the Federal Government are in line with the expectations and recommendations of the study findings. However, for a pathway to sustainable urban sanitation in Nigeria, especially in study cities, the following must be addressed:

Streamline the mandate for urban sanitation, with effective coordination:

The study finds that existing state laws and policies allocates the mandates for urban sanitation to the Ministries of

Environment at the state level, in the three states, while the mandates for rural sanitation is allocated to the Rural Water and Sanitation Agencies of the Ministries of Water Resources. These mandates are sufficient for the purpose of actualising the NAP but calls for increased collaboration between the Ministries of Environment and Water Resources at state and federal levels.

In addition, a critical and urgent need thrown up by this context analysis is connected to the institutional arrangement for delivering sustainable sanitation. Presently, there are many institutions saddled with sanitation responsibilities, working at cross purposes, ineffectively utilising resources by duplicating efforts. There is therefore the call to streamline the mandate for urban sanitation and ensure a lead agency coordinates the different levels of sanitation interventions of government and agencies operating under the Ministries of Environment, Water Resources, Education, Health, and Housing and Urban Development amongst others. For instance, urban water boards and small towns water units must ensure adequate supply of water for sanitation users. Urban sanitation systems will also benefit from a supportive and effective regulatory regime with clarity on sanitation goals.

Urgently develop a national sanitation policy and relevant state codes:

As noted in the context analysis across the three cities of Enugu, Warri and Kano, a critical challenge in urban sanitation is that of policy adequacy. The existing policies are skewed towards water supply development and do not necessarily capture policy solutions across the sanitation chain. To that extent, the call for the development of a national sanitation policy and the enactment of relevant codes at the state level is of urgent importance.

Initiate rapid scale up of behaviour change education to end open defecation:

Cities and towns in Nigeria will benefit from the initiation and rapid scale up of behaviour change and education programmes to promote uptake of sanitation facilities and the eradication of open defecation and urination. It is noteworthy that the 'Clean Nigeria Campaign' is soon to be launched. City authorities must key into this national movement and take advantage of the momentum expected. There is a huge gap in citizens' engagement on the issue of sanitation at the information, intervention design, planning and implementation level. This is presently a great loss in terms of opportunity and energy for scale up.

Establish sanitation stakeholders' platforms and partnerships:

The context analysis identified and listed critical stakeholders that may be required to drive service delivery and sustainability of sanitation projects. It will be important that state governments prioritise partnerships not only with the private sector but with all stakeholders.

Develop and fund integrated sustainable urban sanitation and capacity building plans:

A benefit of such a sanitation sector stakeholders' platform would be an enlightened and meaningful contribution of all stakeholders to the development of a comprehensive integrated sustainable urban sanitation plan. The study identified the impact of the absence of a sanitation plan across the three cities, leading to a haphazard or *laissez-faire* approach to sanitation management. A sustainable sanitation plan is necessary to guide sector activities and effectively measure performance. The proposed plan should be a product of stakeholders' consultation, detailed field studies and public policy reforms designed to achieve sustainable sanitation goals. The proposed document should contain holistic strategic plans on how to achieve sustainable development and improved sanitation. The long-term strategic plans should be further broken down into actionable steps for all major stakeholders. It should be an integrated

plan that deals with multiple sectoral issues on sanitation including water supply, housing and urban development, but focused on the peculiar challenges of open defecation, faecal sludge management, wastewater and public drains/flooding. The plan should be gender responsive, socially inclusive and in sync with climate change realities. Most importantly, the plan needs to be funded in order to achieve its set objective.

It would be important to develop a capacity building plan along with the proposed comprehensive sustainable sanitation plan, targeted at all stakeholders in the sector and focused on increasing capacity for new technologies in FSM management, institutional development, partnership management, resource mobilisation among others.

Facilitate access to low interest loans and micro-finance schemes:

The place of a financing and funding plan cannot be underestimated. Public investments are critical and allocations must be commensurate with the plans put in place to achieve universal access and healthy treatment and reuse of faecal sludge. The sanitation sector would benefit from a funding scheme that eases access to low interest loans and micro-finance for private investors and households. Nigerians should not wait much longer to end open defecation and achieve universal access to sanitation.

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