

THE RECONCILIATION AND DEVELOPMENT ASSOCIATION (RADA)



RADA

Reconciliation and Development Association

A REPORT ON A PILOT STUDY ON FECAL AND SOLID WASTE MANAGEMENT IN BAMENDA

*A leap into the preliminary steps for a Bamenda City Wide
Inclusive Sanitation (CWIS) Initiative.*

APRIL 2023

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ACKNOWLEDGEMENTS

We want to acknowledge the US Department of State Community Solutions Program run by IREX, through which collaboration between Maharam and Ferdinand ensued to establish the possibility of this project during the Community Solutions Summit of 2022.

Special thanks therefore goes to Maharam for being the technical brain behind this work, and collaborating with the RADA team to ensure it was completed. We wish to appreciate the Mayor of Bamenda III Council for his support and counsel to ensure that this project went successfully. Special thanks to the leadership of the Chief Executive Officer of RADA for supervising this project from the very beginning and ensuring it was on track, safely conducted and received all administrative support both from Within RADA and the City.

To all of RADA staff especially Nkwentet Christel and Munang Othniel Bungo the staff of the Agriculture and Environmental Protection departments who played different important roles including survey design, administration, analysis and presentation of results. Special thanks to Chenwi Claris, Ngueubou Merveille and Mr. Bienvenue an Adviser to RADA, for their review of the project.

Finally, but not the least, a very special thanks to Kangong Moses and Akem Olive, Founder of the STREAK, for their design of this report.

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Foreword 1: Mayor, Bamenda III Council



*Mayor Fongu Cletus Tanwe; Lord Mayor,
Bamenda III Council*

The city of Bamenda has a population of over 600,000 people, concentrated in Bamenda I, II and III, subdivisions that make up the main city centers. Bamenda III alone has more than 105,000 inhabitants with increasing development, like other Cities in Cameroon relying on sanitation to stay healthy, and an environment relying on our human ability to take care of it to remain sustainably useful to the population.

Initiatives such as City-Wide Sanitation are incredible visionary products of patriotic reflection over our environment but also over the health of the people and of the city. One thing we have not tapped into, has been the fact that waste can be turned into wealth. Not just physical wealth but wealth in terms of health and well-being of both the people and the environment. This is why I authorized

the survey and plans of RADA to pilot the initial steps of the Ideas towards CWISE in Bamenda III.

This report shows you the very preliminary steps that will be needed. It also shows you the challenges that are a reality to us at the moment despite the efforts that we have been putting in place. The role of every citizen in an organization is to look at where we are, where we are coming from and where we should be going and in conjunction with the leaders that be, work to see that we move to a place of our dreams.

This report is clear in its recommendations and what is left is to put these together as a project that can be piloted in Bamenda III. My support is fully present to the team and hopefully, once we complete the processes in Bamenda III, we shall continue to work closely with the City mayor and other mayors to expand the idea to this incredible City of Bamenda.

I wish to appreciate the RADA team and partners for their willingness to take on big problems as these and to collaborate with the Council in solving our collective problems.

MAYOR FONGU CLETUS TANWE
Lord Mayor, Bamenda III Council

President/CEO, RADA



*Ferdinant M Sonyuy
President/CEO, RADA*

This work is purely conceived by RADA with the intention to support solutions to the challenges of Fecal Sludge and solid waste management in Bamenda, starting with Bamenda III Council area. This study was conducted in Bamenda III, through a survey done in households on FSW to analyze the sanitary conditions encountered by the inhabitants of this area and to understand the dynamics so that it can be portrayed in a simple format for decision making.

This report shows that the sanitary system is still in its early stages of development. The primary, secondary and tertiary levels of processing solid and liquid waste needs boosting with continuous comprehensive planning, and necessary steps in conjunction with enterprises that are currently at work and those that will have to come in due to technical and other capacity needs for such a system.

Once we handle sanitation as the process of evolution of a city, we put the lives and environment on a track of longer life expectancy and better enjoyment of our city. We want all who live in the city to feel safe, not only from security threats, but also in terms of the kind of city sanitation that we all contribute to and enjoy. From Households, to markets, to government and private buildings, we need to build the capacity of individuals and organizations, to think cleanliness and sanitation for better personal, group and city-wide sanitation and health. Great companies like HYSACAM have started a great job but a policy that now expands this work needs to be in place.

It is for this reason that this kind of survey was commissioned to start the process that can be seen, understood, developed, supported, sustained and accounted for, from the first step to the last step of a dream sanitation in an important city like Bamenda in Cameroon.

I wish to thus, thank the Bamenda III Council mayor and his development team for according us the opportunity to work with them in this study, and to use the report to plan a pilot for the quarters in question. In the same light, thanking my very good friend, Maharam, for his technical support and for opening our eyes to the need to start and not wait on relevant work needed for our own communities. This means a lot to the city visionaries.

Have a good read, thank you.

Ferdinant M Sonyuy
President/CEO, RADA
CSP Fellow, 2019, U.S Department of State

Acronyms

CBO	Community Based Organization
NGO	None governmental organization
FS	Fecal Sludge Management
HYSACAM	Hygiene and Health in Cameroon
BCC	Bamenda City Council
HH	House Hold
RADA	Reconciliation and Development Association
CEO	Chief Executive Officer
SRF	Sewage Return Factor
CSP	Community Solutions Program
CWISE	Citywide Inclusive Sanitation Engagement
JMP	Joint Monitoring Program for water supply sanitation and hygiene
CSOs	Civil Society Organizations
ID	Identification

Definitions

1. **Domestic sewage:** This is wastewater generated as a result of household human activities such as bathing, cloth washing, excreta flushing, etc.
2. **Interceptor tank:** The interceptor tank is similar to septic tank but has a single chamber and lesser hydraulic retention time (hence smaller size). These are built on-plot as part of small bore/ settled sewerage system. These serve two purposes- 1) retain most of the solids; and 2) dampen peak flows, thus the design of downstream sewerage network can be relaxed.
3. **Septage:** Septage is the liquid and solid material pumped from a septic tank or on-site sanitation facility.
4. **Sewer:** It is a pipe or conduit that carries wastewater or drainage water.
5. **Sewerage:** This is a complete system of piping, pumps, basins, tanks, unit processes and infrastructure for the collection and transport of wastewater.
6. **Sewage Return Factor:** The SRF is a constant denoting the proportion of household water supply returning as waste water after use. For example, sewage return factor of 0.80 indicates that 80 percent of water supplied returns as sewage.
7. **Waste** according to Law No96/12 of 5th August 1996 relating to environmental management is defined as “any residue from a production, processing or utilization process, any substance or material produced or, more generally, any movable and immovable goods abandoned or intended to be abandoned”.
8. **Waste Management** is defined as “the collection, transportation, recycling and elimination of waste, including the monitoring of disposal sites.

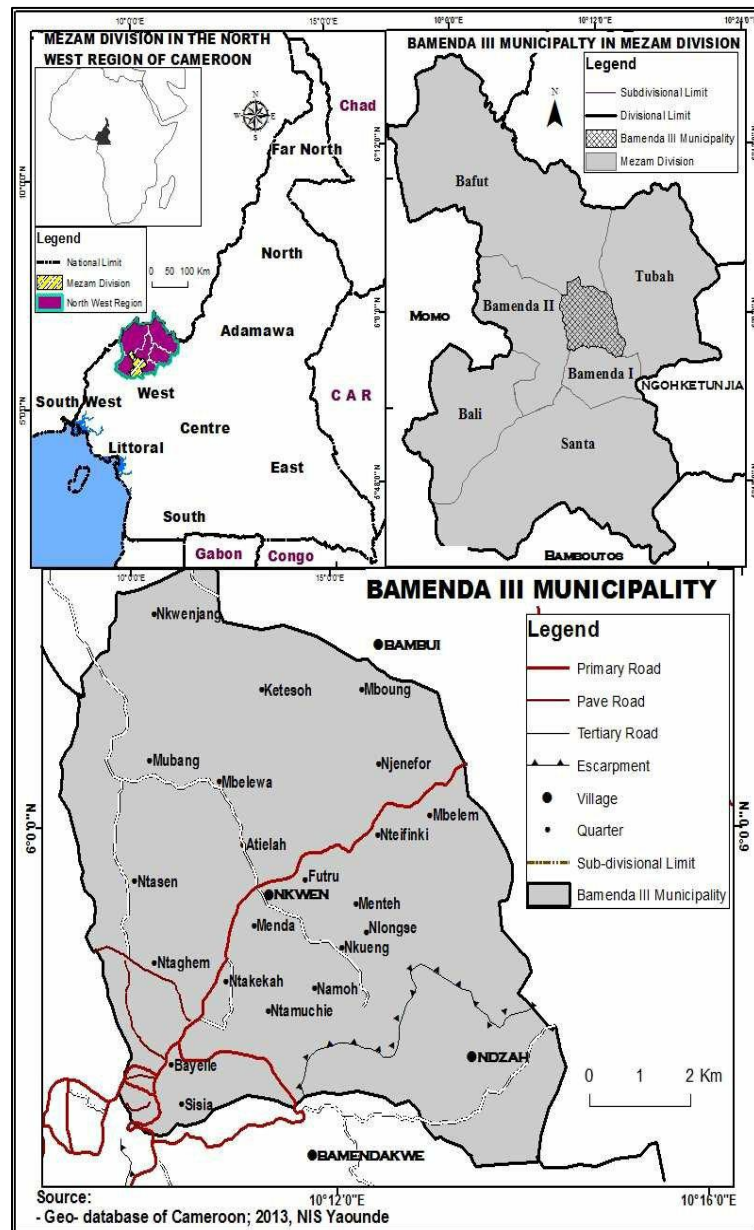


Partial view of the Bamenda III Municipality

INTRODUCTION

Bamenda III is located between latitude 6°15' and 6°25'N and longitude 10°02' and 10°15'E of the Greenwich meridian. The sub division is one of three, in the Mezam division of the Northwest region; and the gateway to and from Boyo, Ngoketunja, Bui and Donga Mantung Divisions. It is bounded by Tubah sub division to the West, Bamenda I sub-division to the North, Bamenda II sub-division to the East and Bafut sub division to the South. Bamenda III has a total surface area of 67.9km² and a population estimated at 234,579 inhabitants.¹ Two autonomous villages, Nkwen and Ndzah make up the Bamenda municipality. There are 46 quarters in Nkwen and 5 of these quarters in Mile 3 (Nkwen), where RADA conducted the survey.

Bamenda city, where Bamenda III is squarely situated, is the administrative seat of Mezam division and regional headquarter of the North West region. It is the largest town in the North West region with a surface area of 5,250 kilometers square, a total of seven sub divisions and a population of about 800,000 inhabitants. It is a cosmopolitan city which is the bedrock of Cameroon's politics with a very strong traditional set up and extremely powerful Fons and Fondoms. The population though cosmopolitan has a greater majority of local ethnic groups which include, Bamendakwe, Nsongwa, Chomba, Mbattu, Mankon and Nkwen who practice subsistence farming. Due to the hardworking nature of the farmers, the town can boast of a rich variety of food crops which include; potatoes, cabbage, tomatoes, beans and corn. These food crops are exported to other towns in the South West, Littoral and other regions



¹ <https://www.bamenda3council.org/municipality>

which are not opportune to produce them. The art works of the local population is of great importance as it projects the Northwest culture nationally and internationally. The colorfully designed traditional attire worn by both men and women depicts a culture which has stood the test of time and finds its hub in Bamenda. The town is endowed with touristic potentials owing to its landscape characterized by waterfalls, craters and traditional palaces. It is therefore an important town to ensure that all aspects of sanitation are in good stature for the use of the population and tourists. The City Center itself is home to over 600,000 people.

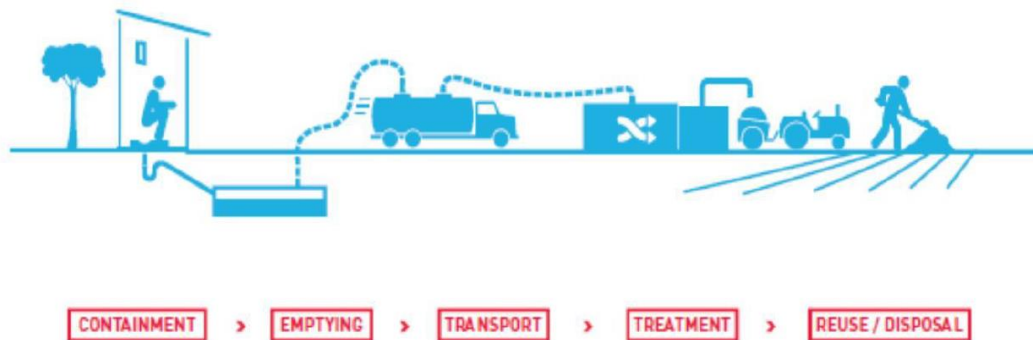
The Problem of Waste and the Solutions

According to (Tawong, 2015), Bamenda generates an average of 270 tons of waste a day with 6.95% being plastic waste. And according to (HYSACAM Bamenda, 2018) 132.85 tons of dirt are collected daily with 9.10 tons being plastics. On a general note, findings had shown that Bamenda city generates 120-160 tons of municipal solid waste daily (0.40-0.54kg per capital,) 76% of which is biodegradable and 24% non-biodegradable. About 90% of all solid waste comes from households, market waste and waste from other sources. One very big challenge that Bamenda is experiencing is from the haphazard location of the solid waste collection dumpsites. There is no regularity in the location of the waste dumpsites in terms of the number of trash cans available at each dumpsite and the distance separating one dumpsite from the other. This results in the creation of unauthorized or illegal dumpsites by the population in the neighborhoods and even on bridges and water bodies. To collect waste at these unauthorized dumpsites in the quarters which is also inaccessible and in the streams is a very big challenge that we are currently facing in Bamenda recently.

The needs of the population and those who come to Bamenda therefore is huge when it comes to waste and the pollution that results from it. As responsible communities, it is important to address these issues with no delays as priorities. The sub division currently lacks a population based understood and subscribed, controlled and organized system of waste production, home based management, sorting, transportation and management for wealth. Most places that constitute where garbage is emptied, are abandoned over unacceptable periods of time. From time to time, the City Council which is responsible for this overall process has given up due to several challenges ranging from insecurity, to lack of equipment, funds etc., to take up trash in time, hence, the whole cycle often crumbles leaving the environment to the mercy of the consequences of all the waste. The consequences have included smelling environments right in the city, markets where people sell and buy, road blocks by waste as well as water pollution in and around several dump sites. In terms of Fecal waste, there is currently no intentional system of leveraging the fecal waste to produce wealth. Due to increasing urbanization, most households now have flushing toilets, meaning they do have septic tanks or some method of disposing the sewage to a well dug hole around the house. A huge opportunity in leveraging the city-wide waste, is there if an intervention is piloted in Bamenda III City Council. Sewage must not end in water bodies or in the water table. Water treatment both waste water and non-waste

water is critical. For waste water, we can reuse the water if well treated, with appropriate processes and technology, for washing, drinking or irrigation. For water that is mostly from bore holes around the waters, it also has to be treated before use at homes given the potential contamination eminent in the distribution of solid and fecal waste in the city. Attending to the processes of FSM and Solid Waste Management requires careful scientific work as well as integration and collaboration in a visionary undertone by the government. In this light, we will work together with all partners including the water authorities, the council, and enterprises currently functioning to better asses and present an integrated growing system for waste and fecal water management for the city as more hands make the work light.

SANITATION VALUE CHAIN



A centralized treatment and results can bring good to the community if it follows the sanitation value chain carefully and respects it right to the end products. Some of which include natural manure, water for irrigation, generation of biogas, compost for manure, etc. all, very innovative. The resulting plan for a Bamenda City Inclusive Sanitation (BCWIS) policy and system is only guaranteed to better sanitation if it is centralized, Council and government endorsed, and has a clear vision and outputs that will prohibit houses and persons from both unhygienic, and in some cases, illegal methods of emptying. This will be a roller coaster if we segment the plan of action for the city into four major activity hubs, which are now clearer as a result of engagement with this Pilot survey.

The four planned steps following this pilot study were:

1. A City-wide baseline survey on Fecal and Solid Waste Management.
2. A Pilot project planning and submission for Bamenda III Council area, Nkwen, on Solid and FSM.
3. Project Implementation and evaluation.
4. Scale up to Bamenda City across all the council areas.

In essence, this survey serves as a fundamental proof that gathering data, and using it to plan and implement an appropriate approach to improving City Wide Sanitation is workable

in Bamenda City and certainly, other cities in Cameroon. It proves that the importance of innovative treatment technologies, collection methods, practical operation, and maintenance remains a subject of vital concern to all growing cities in Cameroon. It is our hope that the launching of this report will bring to the attention of stakeholders, the potential of the final project will engulf the value chain from the HHs user interfaces to containment, emptying, transportation, treatment and disposal of byproducts for reuse. Such a system will also sensitize the population on the importance of sanitation as they construct houses and facilities in accordance with the plans and purposes of sanitation in the city.

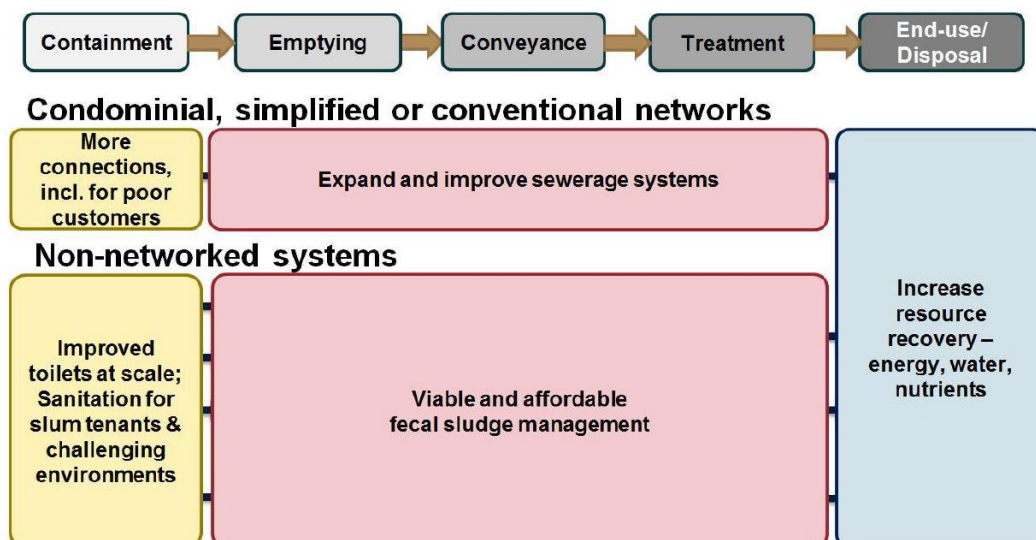
RADA has assembled an initial team of professional researchers, including academia, and community development experts, as well as technical advisers, and looks forward to the research part of this work as well as implementation in collaboration with the city and professional service providers at our disposal. Such a visionary endeavor will require a huge site, and the setup of a whole department co-managed via the principles and policies that will be put in place during the pilot stage, and run with an exemplary underlying patriotic passion for city wide sanitation before handing over as part of sustainability to the City authorities.

As passionate health professionals, environmentalists, and leaders, we therefore know the problem, we know what to do to contextualize workable solutions and how to proceed, and this first step is hereby reported for use by all stakeholders and also for transparency and a call to action, so that the relevant actors can start to imagine and hold relevant discussions of ways forward, contributing to the ways forward recommended in this pilot study.

ABOUT THE SURVEY

The fecal sludge and solid waste management (FSW) project is a RADA collaboration initiative in its pilot phase aimed at understanding the hygiene conditions of households of inhabitants in some selected quarters in Bamenda III municipality (Mile 3 Nkwen).

THE NEW URBAN AGENDA

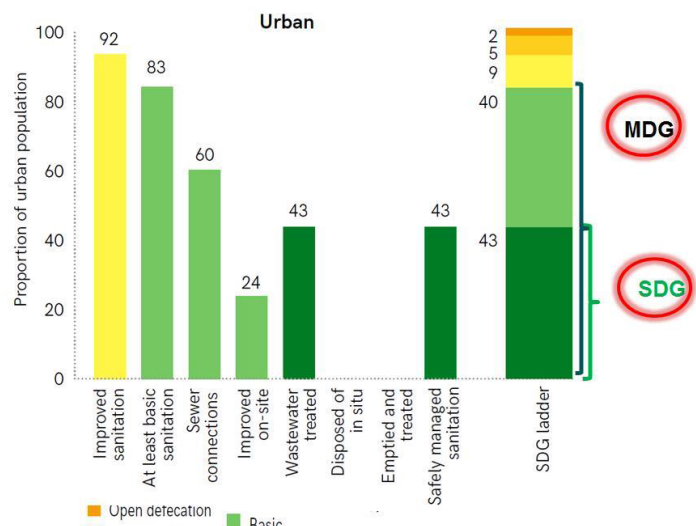


Source: Eawag | Copyright: - Bill and Melinda Gates Foundation

The project was initiated thanks to collaboration between CSP fellow Maharam and Ferdinand M. Sonyuy, and implemented jointly by the Reconciliation and Development Association through its Agriculture and Environmental Protection Departments. The need for a city-wide inclusive sanitation led to the exploration of the already very loud need, so as to propose and support the city towards access to available and affordable sanitation services. City Wide Inclusive Sanitation (CWIS) is a state of urban sanitation where all members of the city have access to affordable sanitation services through appropriate centralized and decentralized systems without any contamination to the environment along the sanitation value chain.

Global Access to Safely Managed Sanitation:

ONLY 3% INCREASE IN ACCESS TO SAFELY MANAGED SOLUTIONS OVER THE LAST 5 YEARS



Source: JMP 2017 Report | - Copy right - Bill and Melinda Gates Foundation

According to the JMP 2017 report, 4.8 billion people equivalent to 57% of people living in urban areas do not have toilets which provide full sanitation services. 15% don't have basic sanitation services. This kind of information is yet, lacking for the Cameroonian context because the research has hardly been conducted. The scale required to speak authoritatively on the context has never been achieved and thus presenting for a growing city, an opportunity to pilot a study that can inform of the state of sanitation with respect to solid and liquid waste and to start informing the city with baselines, and strategic foci for immediate community development actions. Big cities like Bamenda are continuing to grow in Cameroon and a focus on how we produce, manage and use waste is a strategic focus for sustainable environments and quality of life. According to CWIS principles, it is important for:

1. Everyone in the urban areas including the urban poor to benefit from sanitation services.

2. *Gender and social equality of outcomes have to be taken into consideration in the design of services.*
3. *Human waste should be safely managed along sanitation services chain starting with effective containment.*
4. *Authorities of the city should be operating with a clear, inclusive mandate, with performance targets, resources and accountability.*
5. *Authorities should deploy a range of dunging, business, and hardware approaches – sewerred / non sewerred to meet goals.*
6. *There should be comprehensive long-term planning that will foster domain for innovation and constantly informed by analysis of the needs and resources of the population.*
7. *The political will and accountability systems should serve as an incentive to service improvements in planning, capacity strengthening and leadership for the city environment.*

The seven principles of CWIS provide a solid framework through which engagement with the city council allows for the planning and development of city-wide inclusive sanitation with relevant and key stakeholders from research, CSOs, business, etc., to which RADA will waste no time to support financially and otherwise according to its technical and other collaborative competencies. The results of the survey will therefore engender the right kinds of discussions, answering critical questions around these principles and providing a collaborative framework for projects and policies that enhance city wide sanitation in the City of Bamenda, starting from the technical pilots that will be proposed from as a result of the survey.

OBJECTIVES OF THE STUDY

The general objective of this study is to appraise the current state of waste management in Bamenda city and to understand sewage and sewerage management in three quarters in Bamenda III sub-Division.

The specific objectives were thus:

1. To find out which type of toilets are most used in this area.
2. How dislodging process is carried out in this area.
3. To understand how these toilets are being managed when they get full.
4. To appraise the solid waste management situation in Bamenda III Council.

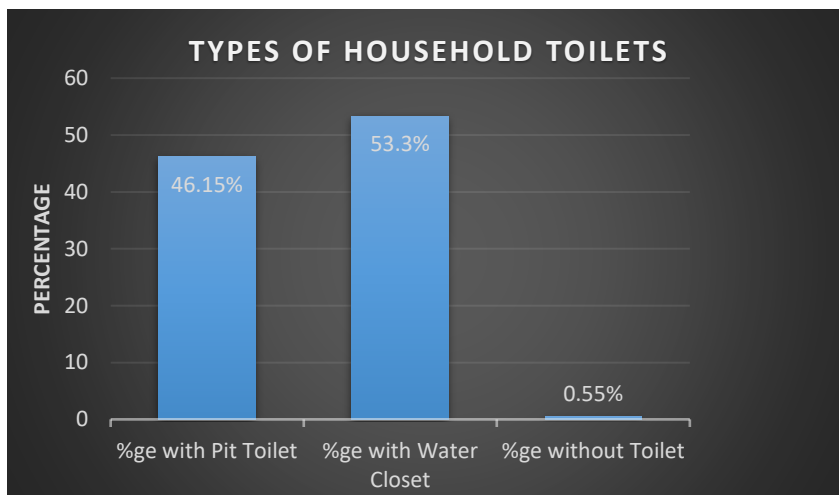
STUDY METHODOLOGY:

The survey was carried out on 25 June 2022 with RADA training 10 volunteers from June 23-24, 2022 with the help of our technical support team in Pakistan. Following permission obtained from the Bamenda III Council Mayor, the 10 volunteers went out to the field to conduct this survey in five quarters. The project sample was five (5) quarters of the 54 in Bamenda III Council area, focusing on the households. These five quarters were purposively chosen for security purposes as well as access, proximity to the rest of the city and

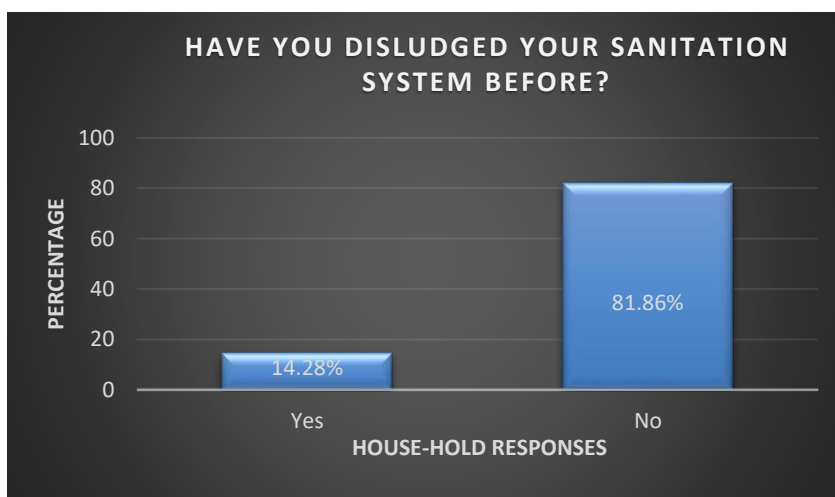
possibility of easy implementation of a pilot CWISE system. The study targeted landlords or the eldest persons of each household/compound that was visited. One person was assigned to at least 20 households to collect data so that the target could be met. The training session that was provided to the volunteers by Maharam and Chamim Ahmed focused on data collection tools, that is, the structured questionnaire, and how to effectively collect data on the field. The survey was conducted in 5 different quarters in Mile 3, popularly described as follows: St Paul’s quarter, St. Louis’ quarter, the Martins, Fonab /Guinness Area, and Redeem Baptist Church quarters. The volunteers did random sampling to collect the data from one elderly person in each house. A total of 184 houses were successfully surveyed and interviewed within the period of the survey.

RESULTS

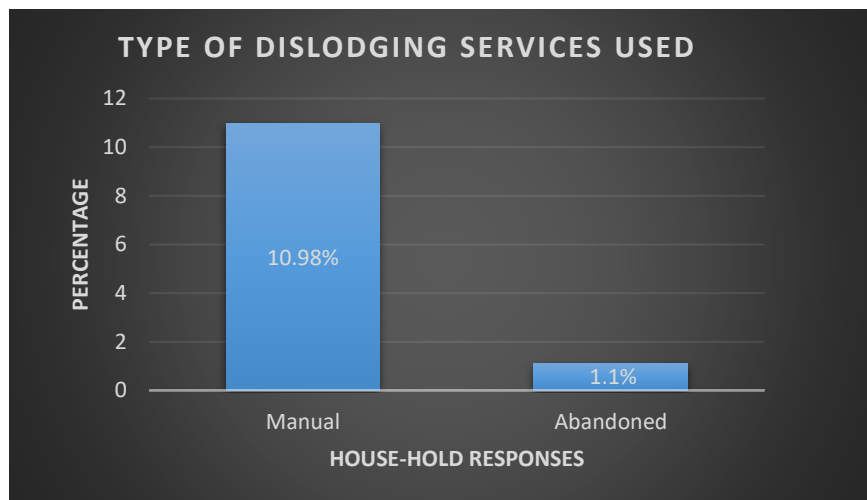
According to the studies survey on the Fecal Sludge and Solid Waste Management, the data was analyzed and results presented as follows;



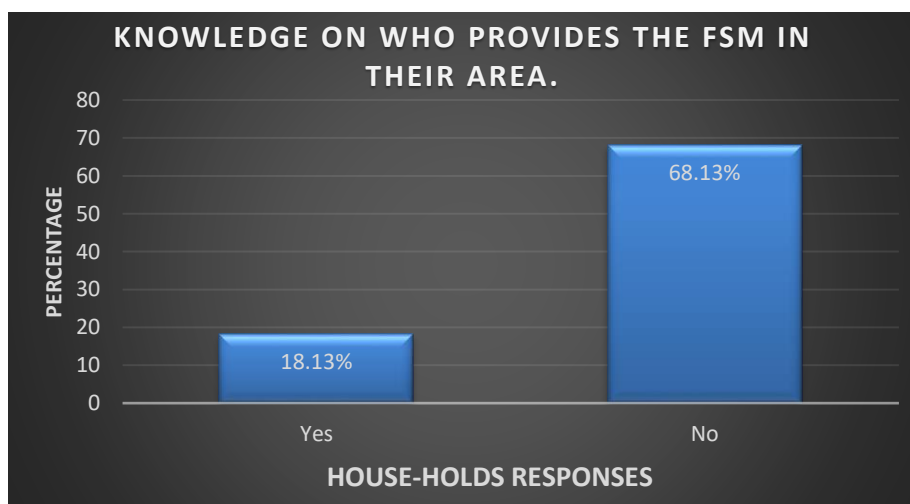
The findings of the baseline sanitation survey (2022) indicate that out of 184 surveyed households within Bamenda III, 98% had access to individual sanitation facilities. This includes 53.3% of the households used water closet and 46.15% had individual pit toilets and 0.55% without a toilet. Majority of the households had both the pit and water closet type of toilets.



From the responses gotten during the survey, indicates that 81.86% of the inhabitants of Bamenda III have not dislodged their septic tanks or toilets before while 14.28% have dislodged their toilets in either one way or the other.



From the 12% of our surveyed population who actually have carried out a dislodging service, 10.9% did it manually while 1.1% was through abandoning the toilet when they were full to digging a new one.



From the responses we discovered that there is little knowledge, sensitization, awareness and availability of information on who actually is doing work on the Fecal Sludge Waste management in this locality. As gotten from the responses we discovered that 68.13% of the response actually have no idea as to who provides this service and 18.13% have idea of who provides this services in the locality of Bamenda III.

Solid Waste Management

Based on a field survey conducted by RADA 2022 in mile 3 Nkwen Bamenda on household solid waste management, domestic solid waste is generated daily including waste from households, and from other sources. The BCC is in charge of collecting waste in the town at the different disposal dump sites. From the Bamenda City Council (BCC) and present day Hysacam probably functioned or is functioning to collect waste guided by the legal instruments put in place by the Cameroon government to govern solid waste management. In this way the implementation of the laws and decrees was a big challenge for the Bamenda city council not being able to function normally due to the political instability in this part of the country.

The councils and city councils are also public or state institutions that are the most concerned with solid waste management within their areas of jurisdiction. In the Bamenda municipality, there is the city council whose area of jurisdiction is limited to the urban area of the municipality and three other councils, that is, the Bamenda I council with area of jurisdiction being the Bamenda I sub-division, Bamenda II council with area of jurisdiction being the Bamenda II subdivision and the Bamenda III council with area of jurisdiction being the Bamenda III sub-division. As concerns solid waste management, the city councils manage waste found in the urban areas while the councils are concern with managing waste within their rural municipalities. Considering that much of rural waste is biodegradable, this waste is dumped in farms or around the surrounding which is considered of less trouble to the councils. Not with standing, before the councils use to ensure that there should always be a monthly check by the hygiene and sanitation department to ascertain that their municipalities are clean.

Municipal solid waste in Bamenda III that emanates from households has become a course for concern due to rapid urbanization. Growing population has increased the volume of waste generated which has led to limited supply of waste management facilities. Uncollected waste serves as a habitat for bacteria, flies, mosquitoes and even rats which serves as agents for disease transmission. Due to the crisis, the influx of many people into Bamenda will continue to swell and increase the problem of poor waste management.

Picture 2: Waste Disposal sites in some quarters of Bamenda III



2a: Around Nkwen district hospital



2b: Waste heap at Nkewn Market

However, it is common and normal to find heaps of unsegregated waste on road sides, junctions, market and different areas. This can last for weeks and even months without being disposed of. As a matter of fact, this situation has become a serious challenge especially to small traders "buyam sellams" who live from hand to mouth and have adapted to this situation thereby having no choice than to continue selling around this dump sides. The odor, gases and leachate released from this waste is usually inhaled by these traders which poses serious health and environmental hazards. These hazards are prominent especially during the raining season as they are being washed into water bodies which are in turn used for household domestic and irrigation purposes. The habit of improper waste management is becoming normal due to traditional habits, lack of community sensitization and ignorance of the side effects.

Picture 3: Poor Waste Disposal site and fecal dislodging process by BBC.



2c: Waste disposal in running water

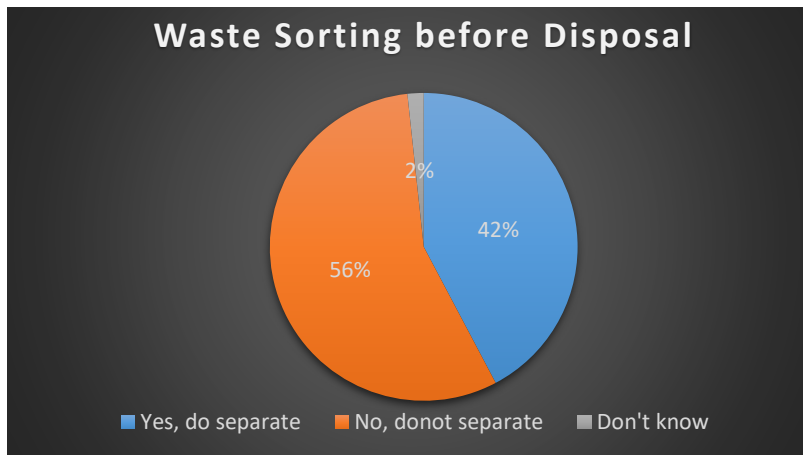
2d: Fecal sludge dislodging process by BCC

With regards to fecal sludge, there is always a problem of bad odor emanating from the septic tanks for those with water closets. This is because the tanks are used for over a long period of time without being emptied. The few who get to empty the tanks do so into surrounding water bodies and in water runoffs during heavy rainfall. Some don't empty at all because of the high cost they will incur in the course of doing so and also because those in charge are not known and easily accessible. Also, those in swampy areas with high water tables are unable to dig toilets beyond 2 meters, as such faced with the challenge of frequent desludging, which is costly.

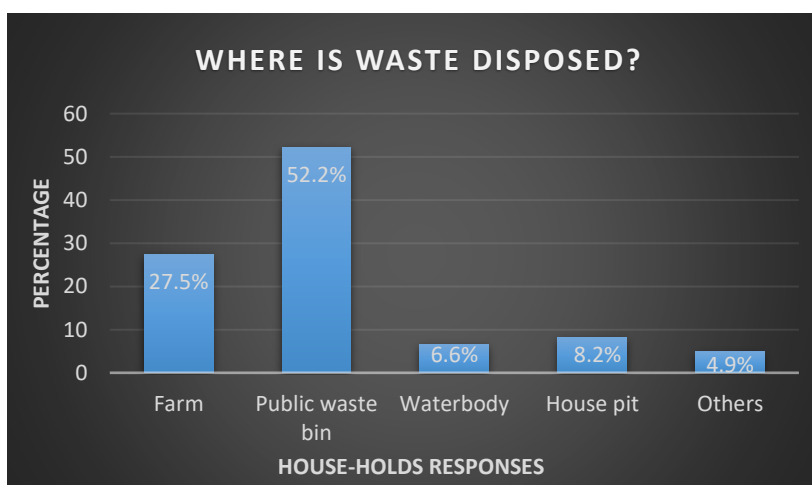
Household Waste

Households are responsible for disposing the waste at designated collection points. BCC is equipped with different dumper bins for waste collection. These containers are placed at different points in the street, quarters, market and road site. These open collection points have been chosen by residents in some areas as the location where household waste is thrown. The use of solid waste bins for garbage disposal is not well practiced in this area; the municipal solid waste bins are always too full and overflowing.

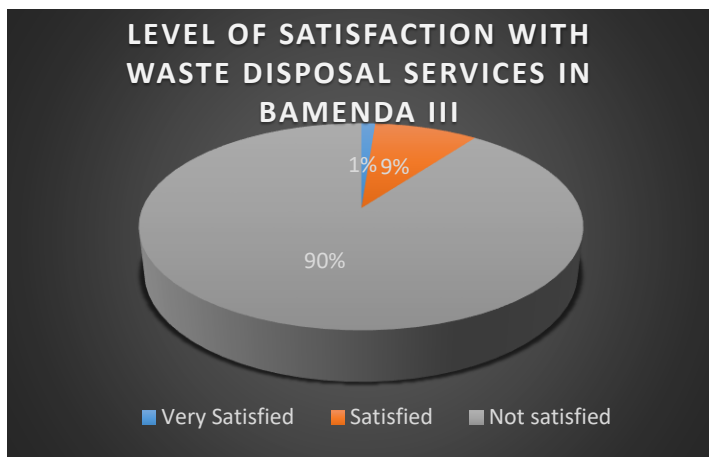
They are not emptied frequently; the dirt keeps piling up and filling the whole area for a long period of time. The graph below explains how household waste is disposed.



56% of the population in the study area do not separate waste before disposing of it both the bio and none bio degradable waste is joined and emptied in an open land field. During the dry seasons fire is set on this waste in the open air which burns continuously and pollutes the environment. Meanwhile 42% of households accepted to sort before throwing due to the fact they empty in their farms and in the house pit, public bin, rivers and other sources. And 2% do not have a specific place where they empty their waste.



According to our survey, 52.2% of the inhabitants in the study area dispose their waste in and around public waste bins. On the other hand, 27.5% do empty in their farms as manure, 8.2% empty in household pit and 6.6% in water bodies. Also, the people’s culture of sending children to dispose of waste is a challenge. Most often these children do not drop the waste into the trash cans and as such waste is always littered around the trash cans on the ground.



Our results indicated that 90% of the population is not satisfied with the disposal of waste in the city, this is because of the manner in which the situation of waste is handled in the community, bins always full, those who go to empty waste always dump it carelessly on the ground while those in charge of discarding it to the disposal dump sites are ineffective therefore leading to poor waste management in the city. 9% of the population is satisfied with waste disposal, due to the fact that they throw and empty bins in their farms and in the house pit.

Field challenges:

While in the field, the volunteer questionnaire administrators encountered some challenges:

1. Due to security concerns, many did not want to disclose their identity. This shut the door for discussions and administration of the survey. Some did not want to give a listening ear, meanwhile others wanted to be sure that there are not spies who want to get information from them before talking, just to be sure that the information is given to the right persons.
2. House hold ownership: some of the people we saw home gave us partial information as to some certain questions because they were tenants and haven't actually lived in the house for more than 5-10 years which is an appropriate time duration for most household toilets to be dislodged
3. Some volunteers didn't understand the questionnaire well as this was not their domain of specialty. Efforts were made to administer in pairs to support each other in such cases.

Despite all the challenges encountered in the field, the survey was a success, and the areas where we planned to collect data from were covered.

CONCLUSION

Findings from the survey revealed that out of the 184 households that were surveyed, 29.76% had dislodged their sanitation system some of these HH dislodge after 10years, 6 years 15 years, more or less and others do empty regularly as often as it gets full, meanwhile those who do not have the means abandon the site and dig a new pit. When the septic tanks get full the houses involved usually use a manual service to empty or call for the team involved in dislodging. 98% of households that were surveyed had at least a toilet though under terrible conditions, with each having either a pit toilet or a water closet and even both, just one household did not have any of them. The almost absence of a fecal sludge dislodging and management system in the municipality is a call for concern regarding the rapid population increase of Bamenda III inhabitants and infrastructural construction indicate that in less than 2 years we will surely experience the worse situations if nothing is done right now.

Another challenge was the poor management of solid waste which is a general issue in our city both from the individuals and from our City Council. There is poor disposal and poor collection of waste as well from the council who are in charge of collection at the different disposal sites. Waste separation is not being done in our country for now as 56% do not sort their waste as they feel it's the responsibility of the council to take care of their waste, therefore there is an urgent need for the population of Bamenda town to be properly educated on the importance of sorting waste into biodegradable and non-biodegradable before dumping. This will facilitate the collection of the degradable waste for manure and the non-degradable waste for recycling and other uses, thus preventing the pungent smell which always comes out from the decomposition of these biodegradable waste affecting the health of those living and selling beside these dump bins. As a means of managing the pressure on the public bins, there is also a need for the population to be educated on the importance of them managing waste at home while dumping only the ones that they cannot manage. This can be in the form of teaching each house holds on the importance of having a dump pit for biodegradable waste, while only the non-degradable that households cannot manage are deposited at the public dump pit. This will reduce the waste on the street and the rivers which at times often cause flooding as it reduces the river channel (for dirt dump in rivers). So, it's like a chain when one party does not perform its duty properly the other is affected leading to a serious situation, we are currently facing today in Bamenda town.

RECOMMENDATIONS

Based on the survey conducted in the study site,

1. We strongly recommend sensitization on fecal sludge and solid waste management or campaign in our community.
2. The survey could be extended to the whole city of Bamenda if more funds could be allocated and a sample size determined for the city. This would thus be a larger sample size, to prepare a city-wide plan rather than a plan that could serve Bamenda 3 sub division alone.
3. There needs to be a city wide or sub divisional pilot policy on waste management from households backed by city level collection system.
4. There should be community capacity building programs on bio-gas harnessing from fecal sludge waste to give way for collection and processing plans within the pilot terrains and city subsequently.
5. Communities should be assisted with bore holes so as to have frequent flow of water to maintain the hygiene conditions of the toilets and homes.
6. Government could subsidize the charges demanded from household owners to dislodge their toilets.
7. Educate the public on how to manage waste, the importance of separating waste, its advantages through webinars, workshops, seminars, and awareness campaigns run by and in conjunction with the city council and sub divisional councils.
8. Advocate for waste collection by the council for proper creation of wealth through new recycling services. This is not being done and knowing that waste is wealth, this is an unexploited opportunity that needs strong wisdom, vision and collaboration to implement progressively for a better city.
9. Provide different types of bins to households and to the city as part of the Council's responsibility of keeping the community clean and as a complementary exemplar for the readiness to collect household waste for proper sorting and recycling business.
10. Recycling of waste into different components (biogas, plastics buckets, containers ties etc.) is a sure unexploited source of wealth and growth for the community that should attract investments right now to set up. We do not own or have systems we don't set up.

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