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Sanitation and Faecal Waste Disposal in Shanty Slums of Douala, Cameroon

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Abstract:

City slumps are common in the world especially in sub-Saharan Africa which is faced with challenges of underdevelopment. The situation of slumps is preoccupying when there are environmental problems associated to swamps. This is the case of Douala where many neighbourhoods have marshy slumps. This article explores the environmental situation of Douala in relationship to sanitation; presenting the difficulties encountered by Douala settlers disposing human waste especially discarded matter like faeces. There is a struggle of the Douala residents between the socioeconomic status and the natural environment in relationship with sanitation leading to the tendency of a direct link between the swamps, marshes and waste disposal since the tendency is to eliminate wastes without enduring any cost. Swampy environments are triggered by low and level topography complicated by gutters blocked with solid wastes however the focus of this article is on human wastes disposal. The research approach used is qualitative with the use of in-depth interviews, observation, focus group discussion and documentary review. However, the continuous increase of slumps in Douala just like in many sub-Saharan Africa calls for further studies in the hygiene and sanitation related aspects in challenging environments.

Keywords: Sanitation, toilets, environment, faeces, swamp, slumps

1. Introduction

Wherever people gather, their waste accumulates. Despite the fact that there has been progress in sanitation hygiene with an improvement in health, many people still have no adequate means of disposing their wastes. This aspect is a growing nuisance for heavily populated areas, with risks of infectious diseases such as the very young, elderly and people suffering from diseases that weaken their immune defence. The accumulation of faecal contamination in rivers and other water features is not only a human risk but other organisms are affected, threatening the ecological balance of the environment. The discharge of untreated wastewater and excreta into the environment affects human health by numerous means (WHO report 2004).

More than a billion people currently live in slums with the number expected to increase in the coming decades. Majority of slums are located in urban centres in less economically developed countries (Ron Mahabir et al. 2016). Sanitation is an important aspect of socio cultural development because low sanitation index leads to host diseases. Reddy and colleagues argued that sanitation implies much more than defecation issues and that cleaning tasks are mostly carried out by women with little assistance from men so need to be involved when taking decisions in relationship to sanitation or designing programs. (Reddy, BS & Snehalatha, M. 2011)

1.1. Literature Review

One of the focuses of the millennium development goals is on everyday life in slums reflected in some of the researches and literature through interviews of women and girls on their daily coping strategies as well as experiences. Bapat & Agarwai (2003) carried out a study interviewing women on their challenges of using filthy toilets and in all types of weather in Mumbai and Pune. In eight South Asian countries, over a billion people are without safe sanitation in a study that was focused on the aspirations of thousands of thousands of women in different ages and physical abilities. FANSA 2016. Poor women working in an informal sector especially domestic cleaners, waste rag pickers have challenges of toilet facilities accessibility due to the fact that they have problems finding toilets (Dey and Wilk 2015).

Adolescent girls living in informal settlements in Bangalore when asked on what could be done to improve their lives, most responded that the needed access to safe toilet. The women deprivations these girls face due to lack of sanitation facilities in education, privacy, mobility in public places and harassment they face chronic communicable diseases (Nallaris (2015; p. 73). Abrahams and Mathews carried out a study where they asked 16 years and older girls how they perceived the risks of using toilets at school and how they negotiated such dangers. This revealed that the schools either had no toilets or filthy and very inadequate ones which were dark, smelly; blocked and broken (Abrahams & Mathews 2006, p. 752). The ground around these toilets was littered with used papers, soiled sanitary pads and excrement.

The world health organization (WHO) considers sanitation in a broad term used in the development of the needs of the society and a factor in the development of developed and developing countries.

The term slum is used in this report and in the millennium development goals describe in a general context to describe a wide range of low-income settlements and poor human living conditions. (Convened in Copenhagen in March 1995). "A slum is a contiguous settlement where the inhabitants are characterized as having inadequate housing and basic services. A slum is often not recognized and addressed by the public authorities as an integral or equal part of the city" (UN-HABITAT, 2003:10).

Historically, sanitation crisis in slums areas has mostly been perceived as either an issue of developing appropriate technologies or in recent years as an issue of creating demand for sanitation services. Many cities continue to experience population growth that far exceeds the ability and resources of local authorities to extend coverage of infrastructure or provide adequate level of sanitation services. This leads to considerable diversity in levels of service provision within various parts of cities. These range from areas with high incomes and high water consumption, which are connected to sewage systems, to empty toilet contents connected to cesspools or open drains to no provision at all (city" (UN-HABITAT, 2003)

In sub-Saharan Africa, 44 percent of the population uses either shared or unimproved facilities and an estimated 26 percent of practices open defecation while in Southern Asia, the proportion of the population using shared or unimproved facilities has declined to 18 percent but open defecation remains the highest of any area (39 percent). Sub-Saharan Africa presents some of the most critical challenges for improving sanitation, where population growth exceeds the increase in sanitation coverage. Between 2004 and 2010 the number of people practicing open defecation in urban areas rose by 3 million and the number of people serviced by unimproved sanitation systems rose from 145 to 183 (WHO/UNICEF, 2012)

To a certain extent, governments are unwilling to act as they believe that providing services and better conditions to the poor will attract more people and cause slums to grow further. This means slums actually grow as they remain serviced for long periods of time. Statistics on slum settlements are difficult to produce as by their very nature, they go unrecognized and unrecorded. Slum settlements are always found on lands with cheapest value, with unattractive physical features such as rocky soils, steep slopes, swampy and inundated areas subject to frequent flooding (Hogrewe et al, 1993; Schaub-Jones, 2006). This affects the cost of construction of latrine infrastructure.

Moreover, faecal disposal raises normative questions on how one ought to rid oneself from something, including what should be discarded when, and where it has to go. In this sense, making wastes is what makes us ethical or not (Hawkins 2006). According to Veblen 1899), wanton disposal can be related to individual distinction of classes. To Lynch 1990; Foster 2002), it is an abusive relationship between society and nature. Barnes (2006) also pointed out that disposal of biological wastes to the environment can also spread pestilence and miasma stench. Eurocentric historiography of modern technology belies the uneven development of waste service provision, as a result, marginalised subjects may be held accountable for their disproportionate exposure to disease (Briggs and Briggs 2006), thereby obstructing the right to effective waste management (Zimmer et al. 2014).

When wastes management infrastructure is lacking, people and waste may mix in ways that threaten humanity and their dignity (Malkki 1995). Variety of cleanliness of lived*in spaces and bodies have become normalised and requires constant effort to maintain (Elias 1969; Hoy 1995; Shove 2004). If successfully managed and removed from inhabited areas, waste must go somewhere and be dealt with by someone. The most common way is dumping in bodies of water, streets where the primary goal is to get rid of it irrespective of what comes from it must be removed since it is a potential impediment to health (Reno 2011a:). Dumping can be understood as a logical counterpart to the basic rejection of things, the removal of waste. In Douala, Cameroon, Guevart and colleagues carried out a study on sanitation where they pointed out that drains are recipients of latrines and septic tanks of the inhabitants due to the absence of infrastructure of treatment of evacuated wastes making the careless deposition of faecal material the role. Guevart went forward to say that faecal waste constitutes a major route of dissemination of waterborne disease causing agents. He affirmed that in slums, 8 inhabitants on ten have temporal latrines like the ones we will see below (Guevart et al., 2006: 6). This study makes use of the medical anthropological approach which aims at uncovering the root causes of phenomena like that of careless faecal waste disposal.

1.2. Research Method

The research is qualitative. The qualitative research techniques used in this study are iconography, Direct Observation, In-depth interview, Spontaneous Interview, Focus Group Discussion, and documentary research. Purposive sampling was used where certain categories of informants were targeted in order to collect data that could cover aspects of our study. Our main informants were household managers as well as people on the street through. The Quarter Heads and some chiefs were also interviewed, the municipal authorities like mayors and collaborators were interviewed formally in all municipalities targeted. Content analysis was used to analyze the qualitative data. Qualitative content analysis goes beyond merely counting words or extracting objective content from texts to examine meanings, themes and patterns that may be manifest or latent in a particular text. It allows researchers to understand social reality in a subjective but scientific manner. The first is conventional qualitative content analysis, in which coding categories were derived directly and inductively from the raw data; this was a grounded theory approach.

2. Result and Discussion

The type of toilets may or may not be a determinant of the means of disposing its contents or the fate of the wastes. Toilet evacuation may not be a problem in rural areas as there is space for possible abandonment of filled pits and digging others. This is not the case in Douala due to limited space but the most preoccupying challenge is the swampy nature of many settlement sites. For instance, the law stipulates that everybody has the right to a clean environment as the state has to ensure that. The constitution of 02 June 1972 revised by the constitutional law of 18th January 1996 of the Republic of Cameroon stipulate that all persons have a right to a healthy environment; environmental protection is the concern of all; the states watches on the defence and protection of the environment. We will examine how the reality of the natural and social environment in Douala puts the observance of this fundamental human right questionable.

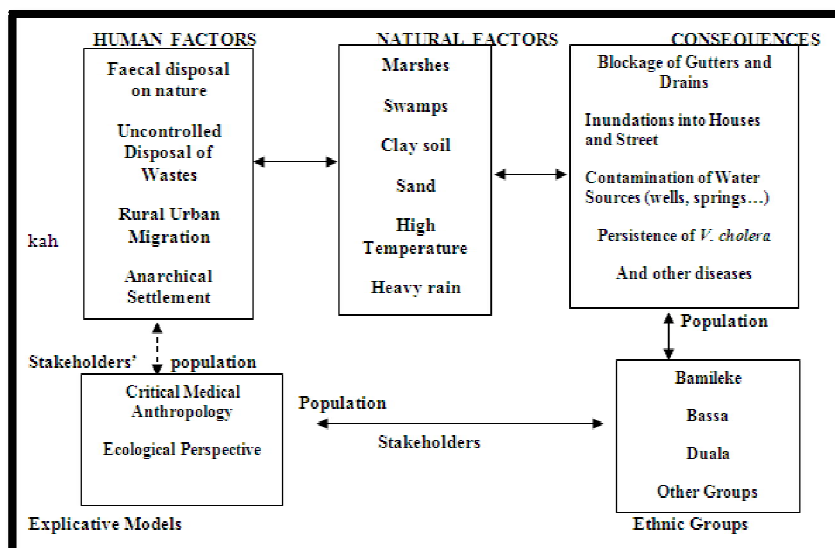


Figure 1: Model of Environmental Constraint of Wastes Disposal and Cholera in Douala
Source: Kah Evans

The schema above is an illustration of the manners of wastes disposal in Douala faced with the challenging environmental situation. The consequences of human factors aggravate the environment leading to a favourable environment for cholera. Details of the diagram will be seen in subsequent headlines.

2.1. Evacuation of Toilets into Gutters and Drains

With few exceptions, houses nearer water features are having perforated toilets. The toilets are burst beneath in order to allow outflow of excrements into the water. That is why all the waters are mixed with faeces having the possibility of contamination by virulent microorganisms like cholera and much more. This is because during heavy rainfalls this very waste inundates with water into roads, houses, corridors and farms. For instance, the lake of Makepe Missoke, the drains of Bisseke, Bonassama, Bessengue, Nylon and the gutters of New Bell, Mambanda, Grand Hangar and the tides of Sodiko. In some toilets, the outflow is continuous and in others, it is occasional. This is one of the recurrent complaints from residents during the study and the health care personnel; especially those concerned with hygiene and sanitation. Hundreds of such images were taken from all neighbourhoods meaning that the iconographic information has confirmed what was told by informants. The question now is why this trend of behaviours that is considered dangerous to health so widely spread within the city of Douala.



Figure 1: Perforated Pit Toilets and Septic to Water in Besseke and Bessengue, Douala (Respectively)
Source: Kah Evansfigure15

From the Ecological perspective, the limited land and space do not give these people the possibility of shifting to dig a new toilet away from the previous one compared to the case of original village settings where many were living. An adaptive aspect of this constraint is the evacuation of the toilets by the hygiene and sanitation services, which they all know. Due to the lower socioeconomic status of most of these people, spending some money for toilet evacuation that can range from 20 000 to 10000 FRS is considered expensive. The pit toilet needs to be cemented for pulling to be possible. The situation is aggravated by the fact that toilets need to be deep so that it takes a long time before emptying the contents. The high water table in most zones in Douala, makes authorities to restrict toilets not to be more than three metres deep so as to avoid toilets mingling with the water table which is also served as wells and taps from boreholes. The situation has also made digging the toilets to be practically tedious making it difficult to dig deeper.

It is imperative to know if economic factors contribute to sending excrements directly to public water. During the fieldwork, we noticed a recurrent housing pattern. The fact that in Douala, there is often a drain, stream or any water feature in each neighbourhood, there is a gradual depreciation in the quality of housing from the tarred road to the water feature. That is the distance from the stream is directly proportional to the quality of the infrastructure. Starting from magnificent storey buildings nearer the tarred road to decaying plank houses toward water called carrabots. If we accept the fact that the quality of the house can be a determining factor to one's socioeconomic status, then one can attribute economic hardship to behaviour (if other factors are not taken into consideration). A lady said; "we have a toilet that we use water to flush and the content goes directly to the gutter and then to the stream. Others don't have toilets so defecate directly to the stream-River Wouri." (Deido, Jesophine, 59 years old) Guevart equally highlighted the issue of faecal wastes disposal in Douala as;

More and more these drains are carbuncles of latrines and septic tanks of the residents. In other words, the profession of emptying septic tanks is less regulated. In the absence of infrastructure of treatment of evacuation material, dumping of faecal materials is done anarchically on the environment and most often in the drainage system (Guevart et al. 2006:6).

Even though environmental constraints and economic hardship can make people to ignore costly sanitation exigencies, the cultural dimension also counts because spending to dispose human waste has not been the preoccupation in most Negro African societies. This explains why even those who are able to construct toilets (even flushing toilets) do not care to make a reasonable septic tank but prefer to benefit from the water feature around. Instead, they allow solid and liquid wastes to leak out of the sink to the street gutters as is the case in most neighbourhoods in Douala (more conspicuous in New Bell). If someone can spend hundreds of millions to construct a building then lack sufficient means to construct an adequate sink, then it is illusive. We cannot attribute such behaviours to culture alone because culture itself is adaptive and many cultural rules need accompanying measures to enable execution.

In all societies, there is need for authorities to coerce in order to ensure conformity. Why then do we still find such toilets in all municipalities in Douala? This draws us back to the Macro-epidemiological approach which says that the problem is not a simple the relationship between man, the environment and the culture but from the manner in which the society is organized and the relationship between the governed and the governors. We will highlight the attitudes of the municipal and administrative authorities. This shows that the fight against cholera and other water borne diseases cannot be effective through sensitization alone but a transformation in the system as a whole. When faecal wastes parade around someone's premises, reporting to the municipal authorities necessitates some payment; making the sanitation service less accessible to the population. The capitalistic, individualistic situation aggravated by corrupt municipal officers make the control of faecal wastes complicated.

Apart from toilets in houses and compounds in Douala that are not evacuated but allowed to empty their contents into water, there are equally many cases where the habitat is not accessible. Cistern lorry carrying out toilet evacuation cannot reach their toilets due to the marshes, bushes, enclave or simply anarchically constructed houses. Here, there is no sufficient space, the toilet cannot be dug deeper than two metres and there is no possibility for the toilets to be emptied using conventional methods. Therefore, the only choice now is other means that are not hygienically acceptable.

It is necessary to know the mechanism of evacuation of the toilets. Despite the fact that holes from the toilet beside the stream are quite conspicuous, it is very difficult to see excrements coming out from them; such that most naïve observers will not notice them and their roles as outlets of excrements. Following interviews and observations, we were able to have vivid picture of the evacuation process. When the toilet is dug, holes are deliberated left as we can see in the figure above. Bottles of mineral water, boards or a strong, flat materials are used from respective cases. When the toilet is used until it is full, the household arranges a day for toilet evacuation. Some use a bucket to empty a reasonable quantity of the excrement before arriving the blocked holes, which are then unblocked and the excrements are flushed out from the holes to the stream or drain or gutter. The cycle recommences as the toilet holes are blocked again. The situation of a slightly marshy environment and evacuation during tides is different because it is when there is a heavy rain or when tides are rising that the toilet holes are unclogged. As they would say "We have a toilet outside here (tyres toilet), here we can't dig much because there is water".

When the wastes are sent to the environment, during inundations caused by heavy rainfall like in Foret Bar, Mambanda and tides in Sodiko, the faeces find their way to houses and road as Odile, a female of 19 years old explained; "We have toilet with ties using water from wells. The quarter roads, during heavy rains excrements floats but one is obliged to move on them because we have no choice. This is because some people open the hole that was put beneath their toilets so as to allow excrements to flow out" (Foret Bar, Kalla Odile, 19 years).

This draws allusion to the economic crises and suppression of sanitation services. If the services of the sanitary officers were not suspended in the early nineties due to the economic crises, people could be obliged to maintain some sanitation

standards. Poverty cannot be the only reason for this behavior but anarchy as some people build anarchically such that sanitation tanks cannot have access. So, they prefer that their toilets should be evacuated by nature. However, others, whose houses are quite accessible, do not want to spend money for sanitation services.

2.2. Hanging Toilets

Hanging toilets are quite common in Douala either in shanty neighbourhoods where water is covering the environment temporarily or in permanent basis. Below, the figure illustrates this practice. Explanations on its construction were given; one of them was that of Marie Paul in Sodiko as; To make toilet, we put a curtain like a door blind and pint some sticks such that faeces goes directly into the water. Marie Paul, (Sodiko Deriere Gare Routier).



Figure 2: Hanging Toilet in Mambanda
Source: Kah Evans

In shanty neighbourhoods of Douala where there are constant floods and tides from River Wouri, such toilets are common. We can see that the sticks are simply there to ensure no direct contact between the people and the excrements and the curtain serves in ensuring that they are shield from passer-by.

If we look downward on the right side of the picture, we will see a pool of water which is the Makepe Missoke Lake. It is perhaps easy for us to qualify such a behaviour to economic hardship as we all see the houses in deteriorating planks. In fact these are the commonest toilets here and all the houses are in carrabots (plank house) with some already inclined. The nearest neighbour of the owner of the toilet above has constructed a toilet that is deep, well cemented, like a tank and the owner talked of possibility of emptying it using the sanitation services. During a discussion with the respective residents, it was discovered that, it was the will to sacrifice some money to construct a good toilet that was lacking. This has enabled us to know that the environment and economic hardship cannot all the time be responsible for poor toilets. Perhaps we cannot hesitate to mention the fact that educational level also has a significant influence in the type of toilet constructed to a certain extent as Christophe said he attended the University for two years whereas the neighbour is a holder of the primary school certificate; CEPE now call CEP. This premise can be acceptable if people are having same economic means and similar environments.

When there is floods such excrements come back to the house; even to that of the neighbour who has sacrificed some money to construct a real toilet. In neighbourhoods that are officially recognized as settlement sites, there is the possibility of reporting a neighbour for nuisance but in Makepe Missoke for example considered as a no settlement zone make the people to be obliged to stay quiet for no one is sure to remain there. Therefore, reporting to the authority will be exposing them and shortening demolition time earlier promised. Such toilets are quite common in Bonaberi due to closeness to the River and streams of most neighbourhoods where floods from rain and tides are common. Perhaps to them it is an adaptive method by defecating without being in contact with the excrement but they forget that it still comes back to them during inundations. We could talk of the control by the authorities but astonishingly, most of these zones are forbidden to settlement. Most of them see authorities or sanitation agents only during cholera epidemics.

2.3. Tyres Toilets

We have seen toilets hanging on sticks previously but another type of toilets is that made with tyres. Two to four tyres are put on each other for the reception of faecal wastes of which a bored board or nailed planks serves as the foot stand. Such toilets are often enclosed by a blind or a hut. As we see the figure above the white curtain which turned to black serving as the door of the toilet was jerked for the photograph to be taken. Contact between the user of the toilet and faeces are prevented. Since there is no hole beneath the soil, when there is heavy rainfall leading to a flood, the tyres are gently pulled so that faeces are allowed to be carried away by the water. Here the destination of wastes is not the problem but the main purpose is to liberate the toilet. After the flood or tides, the tyres are put back to their original positions. It is a kind of syncretism where tyres manufactured for vehicles are used as toilets. As Kemfack in Sodiko, a hair dresser and housewife just like many others in marshy neighbourhoods of Bonaberi, Bessengue, Missoke and so forth said, "We have a toilet but it is too shallow having tyres because we cannot dig deeper since there is water".

Apart from faecal contact through floods and tides, each time the toilet is to be emptied; there is contact with the faeces as testified by many of the owners. Even though the ecological theory talks of the relationship between the environment and the culture of people, the manner in which the people make use of the environment is determined by their socioeconomic status.

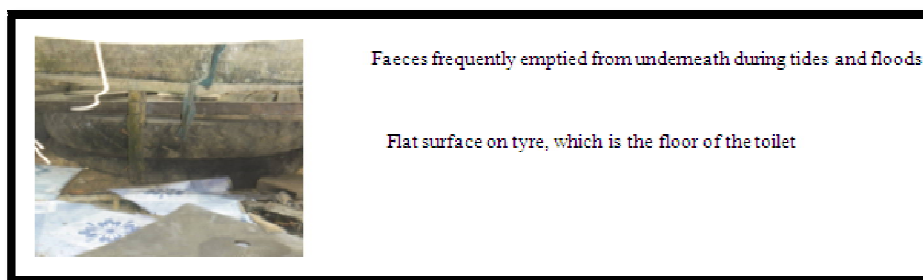


Figure 3: Tyre toilet in Grand Hangar
Source: Kah Evans

This is explained by the fact that these tyres have been constituted environmental elements due to the huge importation of second handed vehicles. They are used as receptors of soil or gardens or flower containers to people of the higher socioeconomic status. In addition, if the people were followed up by the authorities, they would have assorted to better toilet facilities rather than using the cheapest means. Such toilets are common in quarters nearer to streams and River Wouri. This implies that all the Municipalities of Douala, particularly in the shanty neighbourhoods have such toilets since all have the water features like Bonaberi, Missoke and Bessengue. Guevart wrote;

Faecal wastes constitutes a major risk in the dissemination of water bone disease- organisms, amongst which is *Vibrio cholerae*; this explains why there are frequent epidemics. In the large spontaneous neighbourhoods, about 8 inhabitants on 10 have fleeting toilets, called here «latrines sur pilotis». This is a shallow reservoir of human excrement having a dam of evacuation that they open periodically to empty the contents to the large or small drainage systems on open air. (Guevart et al., 2006).

2.4. Curtain Covered Bush Toilets

Settlement sites that are bushy, marshy and considered too harsh for human settlement as the residents themselves complain, toilets that are simply characterized by a very dirty curtain aimed at hiding the nudity of the users are quite common in Douala. Two residents who are housewives of 24 and 29 years old respectively during an in-depth paired interview in Makepe Missoke of the Douala V Municipality said; "We are tenants here renting each room for 4000Fr a month. That is our toilet there, in fact it is not a real toilet since it is just a blind covering the place. We bathe and defecate there".



Figure 4: A Bush Curtain Toilet in Missoke (Kah Evans)

If we are allowed to classify, then we will say from what we can call a toilet, it is the last category because there is no specific place there for defecation. As we can see, the shield is one dimensional and could merely serve to prevent the user from being seen when being called by nature or goes to bathe. The grass that leads to the lake is the toilet that any portion of it is chosen each time. As there are many households there, in some compounds, the bush is partitioned to each household while in others anyone can take any direction. Here, we cannot consider the returning of excrements to houses during floods but permanent contact with faeces due to defecation on open air.

In fact, this is how most societies were in Cameroon before the Sanitation inspection controllers who finally disappeared from the scene during early nineties because of the economic crisis. We can easily talk about cultural impact on the personality manifested in such practices but it is more a kind of *laissez-faire* characterized by the context where political authorities are more interested in obtaining and keeping power rather than the wellbeing of the population. This grievance has been given by the residents of Douala as well as the collaborators of these authorities. If the landlord could buy a plot for five hundred thousand and construct temporal houses for rent, then he could likely construct a pit toilet. Such toilets are very common in neighbourhoods where there is grass and swarms and in places where settlement is not allowed. The 1998 Sanitation Law (loi n°98/005 du 14 avril 1998 portant régime de l'eau) emphasizes on environmental health. This law fixes the legal framework of water regimant and general dispositions in relationship to safeguard of principles of environmental management and the protection of public health. Article 4 of this Law forbids the acts that can alter surface water quality, underground water or the sea or any nuisance of public health as well as the aquatic life. Article 6 stipulates that all physical or moral persons, or installed property susceptible to result to the pollution of water must take necessary measures to limit or cancel the effects.

The realities on the ground give us the impression that this law is far from being pragmatic. Most often, due to the fact that socioeconomic situation of most of the Douala residents faced with the challenging environment, had to settle on land that is either too swampy or settlement-forbidden. In fact, their stay is considered temporal though decades pass despite demolition threats.

2.5. Socioeconomic Determinant of Toilet Facilities

There is no doubt that the type of toilets people use are related to their socioeconomic status but our attention is drawn by the fact that there is a direct link to cholera propagation as extremities are quite common. In fact, all the Municipalities of Douala have zones with toilets that directly or indirectly empty their contents to the surrounding "We have constructed a small hut with an outlet directly in the water. This serves as a toilet. Such a toilet corresponds to our types of houses and economic situation. If we built our house with permanent materials like cement, we will also construct toilets and why not build a sink"

The socioeconomic situations of some informants in most of the Douala Municipalities were preoccupying. This made us to draw allusion to Karl Max theory of social class as people's differences in socioeconomic status are linked to inequality to access to the quality and quantity of factors of production or survival. One of the most advocated informants was Françoise, a housewife and daily saving collector at Makepe Missoke Valley who said; "we are not children of Ahidjo or Mbia but from very poor parents; this is where we could afford to stay. It is true that most houses don't have toilets but we could barely succeed to construct houses; having no means to construct a toilet."

Françoise just like some other informants were quite vocal about the poverty situation in which they found themselves in. This makes them to struggle by all possible means to survive. In reality when we look at the means of subsistence of these people having such toilets we may not opposed the people's objection. Most are call box workers, bike riders, petit businessmen and women as well as low waged workers in enterprises. If the people say their type of houses correspond to their toilets, it is difficult to oppose their opinion when we see inclined degrading plank houses immersed in water. In fact, none of informants ever talked of being happy with the houses and environments in which they found themselves. Meaning that even if we blame the laxity of the municipal and administrative authorities on allowing people to have toilets that empty their contents to the environment, the miserable conditions of the occupants like feeding for example will make one to have sympathy.

The suggestion that the socioeconomic status reflects one's type of toilet may not hold in some cases. The toilet below is owned by someone having a carrabot house but decided to invest in constructing a better toilet. That is the plank house behind on the left indicating that poverty may not be responsible in all cases. In reality, such cases are rare because people tend to want spending less in waste disposal.

It therefore implies that we do not deny the fact that the economic situation of people reflect the type of toilet facilities they have but that there is the general trend of people not wanting to spend much in toilet facilities. The way forward is simply a rigorous and consistent control of toilets in Douala and coercing where necessary.

Although many people seem to be indifferent in respecting sanitation roles, some seem to have awareness in toilet facilities and health risks. As Nchapa, a housewife in her thirties in Makepe said, "I have a pit toilet which I have built with cement although we are living in a carrabot house, when we dug, there was water which was removed; though water cannot lack inside but it is very deep". (Makepe\Missoke, Nchapa, aged 30, owned house). This implies that the notion of economic hardship related to toilet ownership is knotty because of the complexity but the responsibility of the authorities to check people's behaviours is important.

2.6. Toilets Ownership and Use

Toilet ownership and use is important in cholera issues because the toilet is a potential means of cholera contamination even when there is less suspicion

2.6.1. Sharing of Pit Toilets

One important aspect of cholera just like other contagious diseases is the sharing of toilets; whether in places where there may be no suspicions due to apparent hygienic conditions. There are compounds under rent where there are ten or more households using the same toilet. The situation is worsened when the toilet itself is in deplorable hygienic and environmental conditions. Although congestive settlement is a characteristic of many neighbourhoods in Douala, New Bell is more outstanding in these aspects. Some people barely afford to have land to construct a camp for rent with just one toilet to be shared amongst all the occupants of the houses. This was the data obtained in the FGD in New Bell as; "In our case, our toilet is very full with water inside, in a large house having seven different households living in with each household occupying a room and with health risks but we bear it because looking for a house needs much money to advance..." (New Bell FGD). Here we actually saw the state of a toilet in question, due to the very high water table and marshes in that area. The toilet is having water inside and on the floor of a house in which mostly couples are living with their children. Here we see the risk of cholera before any case is announced. They were so preoccupied by the fact that they were potential victims of cholera and related infectious diseases.

The astonishing fact was that this house is not owned by these people. The issue was why was it not easy for them to quit and look for a better house or room. They said that they were involved in economic activities and jobs that merely provide them what to survive on. In addition, with the scarcity of houses in Douala, any house to be rented needs an advance payment of many months, which they cannot have that amount; so are obliged to stay there in such deplorable conditions. We can say that we have almost departed from the time of ignorance in cholera causation because many of the

people in question are barely holders of the CEP and others not. Yet, they are quite aware of potential health risks posed by their environment. The Bamoun background in which most of the occupants of the house question cannot really be the major obsession but the socioeconomic situation in which these people find themselves.

Many compounds do exist, though the environment is not challenging, only one toilet is shared amongst all the occupants of a camp. Like the case of a compound in Oyack|Nylon. We have a pit toilet used by the whole compound of five households (Atangana, 41, Oyack). Cholera is easily shared in in such a compound, as was the case when one lady there was infected by cholera.

2.6.2. Solidarity in Toilet Usage

In Douala, there are many houses without toilets where there is neither grass nor water where people can easily send out their wastes. The situation becomes crucial in congested neighbourhoods such as New Bell where there is very high population density. Hamsatou for example has neighbours from two houses sharing their toilets with, adding to the four households living in the compound. As she said the others did not have toilets, the 26 years old Hamsatou from the Bamoun origin said, my brother, we are Africans, there are many people who are having no toilets but we still share ours with them...

There is no doubt that solidarity is more viewed in certain aspects amongst the Bamouns and the Hausas who are in great numbers in New Bell mostly due to their commercial activities. The Islamic background also plays an indispensable role due to the spirit of helpfulness in the doctrine. One motivating aspect of this behavioural trait can also be accounted by the origin of this religion in an arid region where nature is too hostile hence the need to be one's brother's keeper. The ability for followers of Islam to portray their doctrine can be explained by the regularity of religious meetings and prayer sessions as well as a doctrine embedded in their traditions. This explains why in most Muslim communities, it is difficult to differentiate their traditions from their acquired religion.

This solidarity can be adaptive to cholera control if we consider that the people who beg others toilets could defecate on the environment. However, this also encourages people to build without thinking about a toilet because the neighbour will not allow the others in difficulties without aid. The disadvantage to cholera control here is that the more many people share a toilet, the more they are exposed to cholera in a case where one of them is infected. Situations like this can only come under control if the authorities are present to control. Perhaps we can talk of the difficult economic situation where people simply derive survival strategies by obtaining a very little plot of land to construct on whereas there is no possibility of constructing a toilet. Nevertheless, the culture of investing much for waste disposal is pending because in Western cultures for example, a kitchen has a toilet, a bed room same and so on. There are public buildings here where the toilets have been in ruins for months or even years without being repaired and users have no choice than to beg that of the nearest neighbours.

2.6.3. Defecation on the Environment Due to Non Ownership of Toilets and Ethnic Groups Villages in Douala

Some people may defecate on nature just to portray a deviant behaviour that is provocative. However, in Douala, there are households that depend on defecating on their environment because they do not have a toilet but at least the water or bush to do so. A 31 years old Fungam, housewife, by the time of research was having a four days old child. "We and most people here are having temporal toilets ; that is by nature because each time you dig you see water, so it is not only difficult to dig deep or build tanks". (Mambanda, Fongam). Here, the justification of not having a toilet was due to the swampy nature of the environment. In reality, the environment is hostile to human settlement but if they could do, more adaptive mechanisms could have been adopted. In fact, just like many others it is the last house with marshes and grass as neighbours.

The health care personnel in their own part think that sensitization is the only means to change these behavioural patterns, as the Sanitation technician of the Logbaba District Hospital, the personnel of the Douala III Council located in Nylon said:

"There are quarters that do not have toilets, they were sensitized; especially Ndokoti and CCC where many have built in anarchy without providing adequate toilet facilities. Where they are living, is a drain, they do not worry themselves to dig toilets, they defecate in a bucket throw in the water. Many people were not ready to receive sensitization agents thinking that it was political activities". (Sanitation Technician in a Council)

As we have earlier highlighted, the problem is complex because of the present economic situation of majority of the people in such neighbourhoods in Douala and the culture of discipline. In the other hand, there are people who do not want to provide minimum basis sanitation facilities to themselves and tenants and others who are economically feeble aggravated by the challenging environments in many cases. This is where we talk of Medical Hegemony because in reality the cholera problem is elsewhere (inequitable distribution of resources) rather than the disease itself because human behaviour is unable to be controlled by the authorities and the socioeconomic situations make people to adopt survival strategies that are detrimental to their health.

There are people who do not have toilets and a bush to defecate on and so adopt the use of plastic bags in defecation. They tie and dump on the surrounding, as testified in New Bell and it is common in many slums. Apart from not wanting to build toilets as earlier mentioned above, there are people whose toilets were demolished like in Bisseke where houses were broken in attempt to retrace the drain that was obstructed by anarchical construction. In a FGD in Bonassama;

"When there are tides or inundation, many people having toilets benefit to empty them into the water. As for our houses, we do not have a toilet because it was demolished alongside many houses. It was to liberate the drainage

extending to Grand Baobab around Bonassama. In fact all the people living beside the water are not having toilets as they profit to send their wastes into the water.”(Bisseke FGD).

Therefore, in attempt to solve the problem of inundations, other problems of depriving people from their toilets were created (FGD, Bonassam-Bonaberi).

The case of shore of River Wouri below the Deido food market, there is a quarter there constituting mostly of slums where majority of them do not have toilets but defecate on the small stream flowing toward the River bank. As a woman in her fifties during an in-depth interview said;

“As you can see, majority of the people here do not have toilets but just defecate in the small stream. they have to go further nearer the River bank and those who have toilets all the contents are released to the stream. As you can see my toilet, it is directly located on the stream, this is how all toilets are here” (woman, 59, Deido).

It should be noted that majority of the population of that area are the Douala. We could be indicted for pointing only on the Douala in relationship to hygiene and sanitation deficiencies but here these are people who are the natives of the land and are also in such conditions. Indeed, as they are living there, reasons for some were that their family land was sold, loss of job, some illness and others loss of parents. The livelihood of this quarter is quite peculiar as many of the food items they consume are from the river and their economic activities are related to the water such as sea foods of plants and animal types and cutting of water trees for wood and construction.

The Ecological theory is considered here in terms of similarities in cultures and the environment mostly at the level of waste disposal. One common characteristic in such neighbourhood is low socioeconomic status; meaning that when people are in the same environment and having the same socioeconomic status, they are likely to be similar in many aspects. We will say that most of the much-affirmed vulnerability to cholera by some tribes is mostly related to their capability to settle in a more affordable yet deplorable neighbourhood due to the culture of flexible adaptability, hard work and economic motivations. This is explained by the fact that hospital records of cholera cases are equally high in such neighbourhoods. These include for instance Deido at the Wouri banks mostly occupied by the Douala; Logbong and part of Cité SIC mostly occupied by the Bassa and Nylon, Missoke by the Bamileke (each ethnic group has more than 80% of the total population of mentioned neighbourhoods).

2.6.4. Marshes and Toilet Digging

We have already mentioned the environmental constraints of digging wells in most parts of Douala. This figure below shows the overflow of water just after digging for less than one metre in Bisseke. This is a hole to construct a septic tank that is being dug. Water is gradually removed and the hole is immediately refilled. This shows how tedious the exercise can be but it is very serious here because Bisseke is found at the close banks of River Wouri; making the water table to be very high. The situation is however different in parts of Douala quite far from the river or in slightly inclined zones like Logbaba of the Douala III Municipality.



Figure 5: Overflow of a Pit Still Being Dug for Aseptic Tank in Bisseke, Bonaberi
Source: Kah Evans

From our discussion with the sanitation technicians in Municipal Councils and Hospitals, the solution to such high water levels can be the construction of septic tanks that are more underneath and above the ground surface instead of messing the environment. Nevertheless, this adaptive method can be applicable to those having reasonable financial resources and not those who are already in “set to fall” plank huts. This situation is really challenging in zones of Douala nearer the Wouri River like Bisseke of the Douala IV Municipality where the figure above was taken. Here, we are able to establish a link between human wastes disposal and health. It should be taken into consideration that this hole was being dug at the upper side of the quarter toward the tarred road. Right inside, the situation is critical. Houses are right inside mud and water limiting the possibility of digging a toilet or tank.

Mindful of the crucial environmental situation and difficulties in digging toilets in Bisseke and other related neighbourhoods in Douala, one cannot really say this places are not fit for human settlements. Eskimos do survive in the poles where there is snow throughout the year and human beings also live and survive in semi deserts where water is extremely scarce. Land recovery has been done in many places of the world like the case of Holland for example. Furthermore, these zones are not harsher than some states of the United State of America like New Orleans for instance where hurricanes are recurrent rendering people homeless. Without exaggeration, we cannot hesitate to underline the fact

that nature is kind in the Sub Saharan Africa with less extreme climates and natural hazards because the levels of the economies as well as the socioeconomic situations of majority of the people and the culture of environmental adaptation are relatively the lowest in the world.

Instead of the authorities rejecting settlement requests from the people yet they construct. The policy of land recovery and settlement control could be a contributing adaptive measure other than not authorizing houses construction in such zones with the pretext that they are harsh. Yet, people build there in daily basis and they become the main target for cholera infection and propagation in Douala and in Cameroon as a whole.

Wastes of human origin like excrements for instance are disposed to the environment without any treatment or precaution in most zones heavily infected by cholera in Douala. Decret n°68/59/COR of 30 April 68 on construction: « Ce décret pose les bases de la législation camerounaise en matière d'eau et d'assainissement. Il contient des dispositions en matière d'évacuation des eaux pluviales, des eaux usées et des matières fécales ainsi celles liées aux ordures ménagères »

2.6.5. Bucket Use in Faecal Disposal

When we go to some compounds and houses in Douala, we cannot find a toilet but the question here is where they send out wastes, one could easily say in the bush, but there are many settlements where there is no bush around as the place has been completely occupied by houses. In neighbourhoods that are open; with a relative settlement- favourable environment as compared to most duelling sites in Bonaberi, like Bessengue of the Douala I Municipality that is considered by many as urban, use the famous Mbopi Stream to empty excrements. Buckets are used by some people to defecate and thrown into the stream as a woman in her late thirties in Bessengue of the Douala I Municipality said:

In our compound, there are more than five households. We do not have toilets. As you can see that fenced hut, it is not a toilet but a place where we enter and defecate inside a bucket and then throw into the stream. This is where we also bathe ourselves.

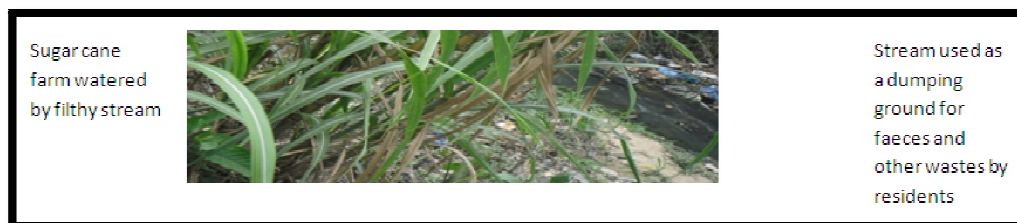


Figure 6: Mbopi Stream Used by Some to Dump Human and Household Wastes
Source: Kah Evans

This compound is inhabited by tenants with the landlady staying there too. When we look at the infrastructure, they are constructed with cement with an average rent per room is 12500 FRF CFA. The environmental aspect is not severe as the water table is a bit low from the wells observed. The issue is the refusal to invest for hygiene and sanitation facilities. Once people see a house, they just want to enter without bothering for sanitation conditions due to the high demand for rent houses. There are some who thought the front's fence was a toilet and only discovered it when they have already paid their rent for more than five months.

What is preoccupying in the bucket toilet issue is the nearness of the sugarcane farm to the toilet stream that is often overflowing to the farm and some nearby houses. It is clear that sugarcane is consumed uncooked; showing the possibility of contamination. More so, these sugarcanes are cut and sold to the public whereas some people cannot be self-immune due to non-exposure to cholera bacteria; having the tendency to start cholera episodes soon. We should also know that from statistics of the Deido Health District, Bessengue was among the first three most infected neighbourhood due to the presence of the Mbopi stream which is directly linked to waste disposal and, agricultural activities as well as floods.

The fact that most all the occupants are from some chiefdoms and does not necessarily imply that their culture does not encourage toilet use. Instead, they are persevering in harsh and insanitary milieu because of their cultural traits characterized by the quest for economic wellbeing. The occupation of one member calls for others leading to urban tribes due to the solidarity manifested in social grouping and economic and social security associations, what they call tontins. The issue here concerns most of these houses and compounds. They do not have toilets due to administrative laxity and also partly because of the distance existing between political and administrative authorities. The people are encouraged by the complicity of the tenants and neighbours of such houses.

2.6.6. Toilets and Conflicts

Toilet facilities are major aspects leading to conflicts especially among neighbours in Douala due to the constraints of waste disposal as human wastes disposed on nature. For example, they find themselves loitering around house B as such complaints have been recurrent in the study. One of them was gotten during a Focus Group Discussion at Nkolouloun, New Bell in Douala II Municipality;

We have the toilets that leak. Toilets are very near to wells. We have a neighbour whose toilet is full so they use plastics. Toilets are a source of conflict in many neighbourhoods in Douala due to the many challenges already highlighted. Toilets overflow to others houses or verandahs making the vicinity unpleasant due to the pungent odour. This problem is so recurrent in New Bell and the situation is worse because most of the houses are owned by influential people. As this

lady said, they were reported for messing the surroundings with their overflowing toilet but when asked where their toilet was asked, they were speechless. Here, we are faced with two categories of people; one having a toilet and other not. We can therefore say that the former is preferable to the Municipal Authorities than the latter. All of the residents were sanctioned with the latter more severely. This was also emphasized on during a FGD in New Bell just as elsewhere as;

There are bags to defecate and we deposit beside our houses. The very people went and reported me that my toilet is leaking. When the council came and asked for their own toilet, they couldn't show. So they were fined by the municipal authority and we were asked to evacuate our toilet."

Apart from the tension caused by the problem of toilet facilities in Douala, one significant thing is revealing the reasons for residents to persevere even in harsh environmental conditions even though they could react. Since most are in similar sanitation all in situations of default. There is reluctance as we can see that both houses are owned but are faced with the problem of toilet facilities. It should be noted that conflicts are higher in communities that are multi-ethnic than when it is composed of people of the same tribe. In Makepe Missoke made up of Bamileke, Nylon, mostly made up of Bamileke people (though a Bassa-village), many parts of Bonaberi constituting of people from the South West Region and some sections the Bamileke around Mambanda, Bisseke, Sodiko and the Douala around Bonabappe, Bonassama and so forth, Deido a Douala village and so forth. Although New Bell has a large Bamoun and Hausa community, there are many from diverse origins due to the commercial status of the neighbourhood.

3. Conclusion

Conclusively, the waste disposal strategies pose a problem in Douala due to a change in the notion of neighbourhood. Typical villages have houses hundreds of metres apart whereas in Douala, one's back door is another's front door; demanding a more sophisticated housing relationship with hygiene and sanitation. They are determinant aspect whose absence do not only favour disease transmission but can also result to the propagation of dormant cholera bacteria to an epidemic or sporadic level. Some people leave their respective places of origin, settle in Douala, and keep on with initial practices that are justified in one hand by the difficult economic situations of many and in other hand the persistence of old habits. This characteristic is present in all the municipalities of Douala and more in particular neighbourhoods. Unfortunately, villages are being conceded to the metropolis, making health situations to be deteriorated. As environmental sanitation is often a major cause of cholera and related diseases.

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