

# Analysis of faecal sludge management in the cities of Douala and Yaoundé in Cameroon

*The paper presents an analysis of faecal sludge management in the 2 largest cities in Cameroon.*

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## Abstract

This article focuses on the management system of faecal sludge in the cities of Douala and Yaoundé in Cameroon. Just like in other African cities south of the Sahara in general, the management system of faecal sludge in these two metropolises in particular is characterised by the non-participation of public authorities (councils and the government). This activity is strictly handled by private operators whereby households and enterprises manifest the desire for the service on one hand and the corporations and intermediaries provide the services on the other hand. They function in disorder and their prices vary according to the status of the customer.

Data collection was structured in such a way that the whole process could be understood from the start to the end passing through the intermediaries. To this effect, we proceeded to the counting of lorries at sewage emptying sites, enquiries on the scavengers and customers, direct observation on how its transportation is organized through the follow up of drivers during collection and transportation of faeces. This was followed by household enquiries living around each discharge site so as to evaluate their environmental and social impacts of the surrounding population.

From this study, it can presently be affirmed that government and council intervention limit to tax collection where the money is not even used back in ameliorating the activity. Scavengers operate singly though the settling of police officers, demands of state agents and urban council workers will never cease to exist.

In these two cities, the work of a scavenger necessitates organization and this can only be achieved through the reinforcement of legislation whereby they are grouped into an association in order to safeguard their interest.

## Introduction

This article presents the situation in the management of sewage in the Douala and Yaounde cities in Cameroon. These two cities alone play host to more than 50 % of urban dwellers in Cameroon with a population of 2.2 and 2.5 million inhabitants respectively in 2010. Douala is a flat coastal city with a very poor drainage system while Yaounde with an average altitude of 700 m above sea level is situated in the south Cameroon plateau. Generally, the drainage systems that are dominated by local latrines are so mediocre. Collective drainage network covers less than 0.5 % of the population of the two cities. Septic tanks on their own part are used by less than 20 % of the inhabitants. Such tanks are mostly found in planned quarters but are poorly constructed in most

cases, built by less trained builders in total disrespect of the norms prescribed by civil engineers.

These septic tanks, though not as deep as the traditional toilet, are emptied by professionals using tankers. The emptied faeces are transported to the outskirts of the two city centres where they are emptied on unmanaged sites with sometimes difficult accessibility due to the non-maintenance of the road.

The work of a scavenger is poorly organised in Cameroon because of legislative lapses and the lukewarm attitude of public authorities who only content themselves with tax imposition at the decanting sites and allow operators to operate in disorder. These public authorities do not impose fixed prices and these prices are in function of

## Key facts:

- In general, faecal sludge management in Douala and Yaoundé is poor.
- Although dump sites for faecal sludge are available in both cities no treatment is provided
- Service providers are only very little organised

the bargaining power of the operator. Though the prices are fixed according to the volume of the truck, they also integrate many other aspects.

## Materials and methods of investigation

This article centres on the evaluation of managing sewage in the cities of Douala and Yaoundé. Data collection was structured in such a way that the whole process could be understood from the start to the end passing through the intermediaries.

### Evaluating the organisation of sewage management in Douala and Yaounde

The perception in organising the management of emptied faeces in the two Cameroonian metropolitan cities has enabled us to present the situation, interpret the regulations in force in the domain and analyse the flow chart of institutions implicated in the domain so as to better understand the respective roles of the actors involved. In this wise, the different actors involved were identified, their level of implication analysed through a compilation of their flow charts either at the level of ministries, urban communities or district councils. This approach enabled us to better understand the roles state actors play.

Simultaneously, emphasis was laid on the identification and analysis of the practices of private operators who are professionals in the domain (mechanical scavenger, sewage intermediaries etc.). They were counted simultaneously at the discharge sites and stationing parks in the two cities. Furthermore, we analysed the conditions of becoming a scavenger through the *arrêté* of MINSANTE (i.e. *arrêté* N°0003/A/MSP/SESP/SG/DPS fixing conditions of opening, exploitation, renewal, suspension or withdrawal of accord of a private hygiene/drainage enterprise for a period of 3 years) and the accord that is delivered by competent services, the real authorisation to engage in the profession is delivered by the urban council in the case of Douala.

### Monitoring sewage tankers and interview of customers

In the two metropolises sewage tankers were systematically identified at their discharge points (Nomayos in Yaounde and “Bois des singes” in Douala). The identification exercise was conducted for 3 months in Yaounde (November 2011 – January 2012) but this period was reduced to 2 weeks in Douala, given the fact that the Urban Council was already registering the number of trucks that empty their tanks at the “Bois des Singes” site.

The trucks registered were then selected using two criteria: frequency at the discharge site and the free and clear consent of the truck driver. In total 7 drivers out of 17 in Yaounde, being 41.2 % and 7 out of 49 truck drivers in Douala, being 14.3 % accepted to respond to

the enquiries in respect of this study.

Trucks were followed up at the convenience of drivers placed besides the driver from 6 am to 6 pm (12 hours for a day) for 8 consecutive days in Douala and 14 in Yaounde. Multiplying the number of days by two in Yaounde was due to the low frequency of emptying fecal material in the city. To this effect we established an observation scale for each truck to fill during the period of operation. The time sat at the carbine with the driver enabled our collaborator to familiarise with the driver in order to obtain maximum information on the functioning of the management system of emptied faeces and the practices of the operators.

During this period of the follow up of trucks, all the customers were interviewed who gave an appraisal on the manner in which this activity is carried out, that is the levies charged, eventual negotiations, the network of emptying sewage, relations with scavengers amongst others. In total 52 customers in Yaounde and 60 in Douala were interviewed.

### Sewage quantification and characterisation

A combination of two methods was applied in quantifying sewage. These consisted of 1) counting trucks at the entrance of emptying sites in Yaounde and Douala, and 2) their classification according to the volume of the tanker and household demand for sewage services. Rapid calculation led to the estimation of average dejection per inhabitant in the two cities. Considering population projection from the 2005 national census, we could estimate the weekly production of sewage in the two metropolises.

Characterising on the other hand is a practical operation which consisted of sampling faeces at the level of households as well as at the level of emptying sites during the process of emptying. Thirty samples, amongst which there were 11 at the level of households and 20 at the emptying sites, were sampled on the spot. All the bowls of sewage in Douala were conditioned and taken to Yaounde by bus where the contents were analysed. The laboratory analyses were carried out in the Department of Botany in the Faculty of Science, University of Yaounde I.

### Analysis of the management of emptying sites and their impacts on the surrounding population

A good knowledge on how this activity functions led us to the analysis of the emptying sites in the two cities. To this effect, transects were realised with exploratory limits during which photographs were taken to illustrate some important facts.

An investigation was also carried out on the population to determine the extent or poor execution of emptying on the inhabitants and the environment. Some 56 households were involved in this exercise in Yaounde

and 27 in Douala within a perimeter of 300 m around the emptying or decanting site.

Subsequently, focus groups were organised together with the riverain population, council authorities of the two cities and the local services of the Ministry of Public Health, Environment and protection of Nature etc. In the case of Douala for example, the convention of managing the “Bois des Singes” site was analysed signed between HONDAE CIG and the Urban Council (These two structures are linked by convention N°18/CUD/SG/DEGCO/2010).

### Materials and implementation

Engaging in this study necessitated the use of materials such as GPS for precise location, use of individual protection materials (gloves, helmets, boots and protection eye glasses), plastic containers for sampling, icebox, long ladle, bactericide gel, camera, questionnaire, guides with resource persons etc. This hypothetico-deductive and practical methods resulting in field verification led to the achievement of results with a high degree of accuracy.

## Management of sewage in Douala and Yaoundé

The collection and transportation of sewage  
About 18 trucks were identified in Yaoundé that belong to 9 enterprises involved in the sewage business. Among these, 3 trucks are owned by hotels which serve in emptying their own cesspits and other customers when need arise, while 3 others are owned by individuals. The volumes of these trucks vary between 8 and 16 m<sup>3</sup>. Yaoundé has two parking points for the trucks and these points are only known by potential customers who come there at their convenience to negotiate for services and prices with the drivers. Other customers get to them through intermediaries.

In Douala, the economic capital of Cameroon, 49 trucks were identified that are distributed in volumes (Table 1).

The 49 trucks are owned by 16 different enterprises (with a maximum of 4 trucks per enterprise). It should be noted that some district councils in the city also own sewage trucks (e.g. Douala 1 and 4 district councils). Nine other trucks are owned by individuals. There are no official parking points for the trucks in Douala but most of them can be found stationed behind the Guarantee bus stop in Akwa where they pay no parking fee. The problem of parking presently put scavengers and the Douala Urban Council in conflict.

The three ways of emptying sewage presented for Yaoundé equally applies in Douala. However, manual emptying here is a lucrative activity where some people have specialised in it. These specialists mostly intervene after mechanical sucking has taken place in order to remove solid waste in the pit that cannot be removed mechanically (sand and other objects).

In Cameroon, the work of a mechanical scavenger is guided by an accord issued by the Ministry of Public Health, but in Douala one would notice that out of the 16 enterprises and 9 individuals operating in this business, only 4 are in possession of the ministerial authorisation and 9 function with an authorisation from the Urban Council. Such a situation clearly illustrates the lukewarm attitude of local and national authorities in controlling the handling of faecal material.

The management of sewage in Douala and Yaoundé faces the problem of lack of institutional and legislative coordination. There is no centre that can actually boost the development of this activity but there are centres whose objectives are to extract as much money as possible even if nothing is reinvested back in the activity. That is why the urban councils, district councils and state de-concentrated services go out in the field to collect taxes from the scavengers. Repeated inspections without concertations with the actors or programming of their passage in the field appear as inconvenience to the scavengers who revolt and are pushed to carry out clandestine activities at nearby depressions. To this effect, the nervous attitudes of the controllers who organise patrols at the convenience hinder the smooth functioning of the sewage corporations in the two cities.

Additionally, legislative texts and the in-adaptation of existing ones hinder better organisation of sewage handling in Douala and Yaoundé. One should equally denounce and deplore the existing texts which expose scavengers and especially drivers to risks of contracting diseases. These people handle faeces without wearing EPI such as gloves, boots, working attire, protective eye glasses, helmets, scarfs, etc. The texts in force do not oblige them to respect minimum hygiene conditions or carry out regular medical check-ups. Today the reformulation of texts in regards to the treatment of sewage in Cameroon is imperative which has to be taken seriously.

Inadequate financial means is another handicap to the scavengers. Most of them are owners to their enterprises and they operate with old trucks that are subjected to constant breakdowns. During transport of faecal material, the cover of some sewage tankers remains

**Table 1: Distribution of trucks according to their volume (in m<sup>3</sup>) in Douala**

Volume of truck	4	6	7	8	8.5	9	9.5	10	12
Number of trucks	1	6	1	16	4	4	1	10	6



**Fig.1: Location of the rubbish dump in Nomayos (in red) (Berteigne, 2012).**

open and the faeces fall along the road rendering the environment. Inadequate financial means and administrative inspections hinder necessary reparations.

In Douala, the average age of sewage tankers is 28 years. They are mostly second hand trucks whose first registration dates back to the 1980s in Europe. In Yaoundé this average age stands at 22. During the peak periods of activities, scavengers over work themselves since there is no relay personnel. This has a consequence on output and safety.

**Management of dump sites**

The collection and transportation of sewage in Yaounde are carried out by sewage enterprises while land has been provided by an individual as rubbish dump. This dump is managed by the villagers of Nomayos and Mbankomo Council who charge a levy at each discharge. In Douala,

the evacuation of faecal material is haphazard. Hundreds of cubic metres of sludge collected from individual and public toilettes as well as septic tanks are disposed of in the wild without treatment.

The dump site of Nomayos in Yaounde

Located at 1 km along the Yaounde-Douala highway, the Nomayos dump is linked to the main road by a track which is plied by trucks on daily basis. Close to this site is the Avo'o River in which faecal material is emptied. It should be noted that this river forms part of the Nyong river system which is exploited upstream for portable water distributed in Yaounde and Mbalmayo (fig.1).

In effect, the exposed sewage that flows at the neighbouring swampy area are untreated (Fig. 2). An attempt to manage a decantation can by the scavengers themselves did not yield satisfactory results.

In Nomayos village, a management committee whose objectives is to safeguard the interest of the riverain population was put in place to manage the finances obtained from levying sewage trucks. A solidarity fund was created that could assist the villagers in times of need. The management of this fund generated conflicts that led to the closure of the site for two weeks in June 2012. In spite of these conflicts, the village committee continued holding sessions in order to manage the income generated from the Nomayos site. The money raised is not reinvested for the maintenance of the site by the Mbankomo Council. Worst still this money is used by a few individuals for their personal interest as the municipal tax collector confirmed.

The consequence of this anarchical disposal is that the site, the loader of the organic matter, as well as plastic waste are polluted enormously. The polluting effect is aggravated by uncontrolled dumping. It was observed, however, that when the access road to the site becomes impracticable, the tankers dump the sewage directly into a water body just at the entrance to the site. The outlet or mouth of this stream is a lake where many of the



**Figure 2 : Sewage disposal at Nomayos**



**Figure 3: Location of the Douala dump site (in red) (Berteigne, 2012)**

village people come to fish. At times, the tankers empty the waste on the way to the site.

The “Bois des Singes” dumping site in Douala

Huge quantities of sewage are actually collected in the town of Douala, transported and dumped in a place called ‘Bois des Singes’. The collected sewage is dumped in nature without appropriate treatment, thereby creating severe public health risk, sight and olfactory nuisance and contaminating water.

This zone, which is situated within mangroves and close to the Wouri Estuary, the main river that drains the town of Douala, is known as the green zone following the urbanisation plan of the town. That is, a zone prohibited for house construction, although that is not the case today as people have constructed there and are living under precarious conditions due to interaction pathogens in the sewage, with neither electricity nor potable water. Within a radius of 300 m around the site, we found about 26 already inhabited houses and many others under construction. This dump site is situated in the south of

the town and unlike Yaounde, this site is found within the urban space of the town of Douala (figure 3).

Unlike the Nomayos dump site in Yaounde, the Douala dump site has been carved out and managed by the Douala Urban Council (DUC) since 2003 (Competing, 2007) and the site is managed a private body (HONDAE CIG) that signed an exploitation convention with DUC. An obligatory ccess fee of FCFA1500/trip is the lone condition required from those dumping sewage in the site. Part of this fee (75 %) serves as running cost of the operator, while 25 % of the royalty is deposited with the DUC to ensure maintenance of the site and the access road in theory.

DUC built a ferry-boat for the reception of sewage, which suddenly went bad. The sewage is actually dumped before the ferry-boat and it flows towards the mangrove, which is situated below the site (figure 4).

Although the volume of sewage dumped in the ‘Bois des Singes’ site is twice as much as that in Yaounde, the revenue generated in this site is too little (23000 EUR). Some scavengers refused to pay the fee on grounds that DUC does not maintain the access road to the site as stipulated in the protocol accord signed with HONDAE CIG.

The impact of this dump site to the surrounding population is enormous and the rate of squatting in the site by the surrounding population is high. In the field, we observed that 126 inhabitants had already occupied 26 houses within 300 m round the site, while 112 other houses were under construction. If nothing is done, the population living around this site will move up to 900 by the time the rest of the houses under construction must have been completed (Figure 5).

All land occupation in this site is recent in the sense that the first households censored in the site were constructed in 2009. 89 % of household occupants around the site



**Figure 4: Dumping lorry at the entrance of the ferry and the outlet of the sewage**



**Figure 5: Concrete foundation (on the left) and an earth-filled one in a valley (on the right)**

affirmed to have witnessed poor health during the last two weeks before the passage of the researching team. After enquiry it was observed that the most affected were women (41 %) and children (27 %). This morbidity rate is twice as high as that observed in Besseké zone (40 %), a neighbourhood in Douala IV Council characterised by spontaneous settlement and which is very far away from the sewage disposal site.

### Costs of the service

The prices of draining sewage are relatively high in Yaoundé. The average cost (based on 130 responses) is 88000 FCFA (134 EUR) when it is the toilet of an individual that is to be drained (knowing that the minimum wage is 28500 FCFA). The price increases when the toilet drained belong to the administration or enterprises.

It should be underscored that some scavengers were reticent to give this information. As earlier said, the scavengers often depend on hotel, which are owners of tanker Lorries and the price for draining the toilets of these hotels is 20000 FCFA. The average price for draining a toilet was then calculated after reducing this amount. The price for draining a cubic meter of sewage in Yaoundé is 17000 FCFA/m<sup>3</sup>.

Toilet draining prices in Douala are lower, ranging from 15000-40000 FCFA (average 33000 FCFA). These prices are two to five times lower than those charged in Yaoundé for several reasons.

- The distances between the customers and the dump site are quite reduced on the average than in Yaounde, the political capital, thereby engendering a logical reduction in fuel consumption.
- The volumes of septic tanks in Douala are generally smaller with reduced depths. Thus, less fuel is consumed by the suction pumps.

- The state of access route to the disposal point is better thereby reducing maintenance cost.
- Competition among scavengers in Douala is relatively higher (as many as 2.5 times more tanker lorries than in Yaounde although the populations are almost the same). In effect, some scavengers practise price cuts, reducing them to as much as 15000 FCFA per trip.
- Dumping fee is only 1500 FCFA with no access tax, unlike in Yaounde where each tanker lorry pays 50000 FCFA/month.

Average draining price per m<sup>3</sup> is 8500 FCFA in Douala, or half of the price charged in Yaoundé (17000 FCFA). In Douala there is greater price dispersion around a mean, which is 35000 FCFA per draining trip. A reconstitution of exploitation cost of scavengers based on data got from 7 tanker lorries that responded to the survey instruments in Douala and Yaoundé respectively, showed that average draining cost in Douala is 28000 FCFA per trip and 55400 FCFA per trip in Yaounde. The net surplus saved in Douala is only 7300 FCFA as against 33300 FCFA in Yaoundé. We can therefore affirmed that the steep competition between operating scavengers in Douala and their poor organisation profit households, which benefit sewage draining services at lower costs. This conclusion may vary slightly in the sense that in Douala, customers need to request the services of a scraper after the passage of the tanker if they want to completely get rid of sand and other debris that remain in the septic tank after draining.

### Sewage production and collection

#### A considerable quantity of sewage produced is not drained

Specific sewage production as of lower value quantification is 0.69 km/inhabitant/day in Douala and 0.74 km/inhabitant/day in Yaoundé. On the average, the standard deviation is higher in Yaoundé (Table 3).

**Table 3: Sewage production in Yaoundé and Douala (Berteigne, 2012)**

Locality	Indicator	Drained volume (m <sup>3</sup> )	Specific sewage production (kg/inhabitant//day)	Number of days separating two draining periods
Douala	Mean	<b>7.38</b>	<b>0.69</b>	<b>1451</b>
	Standard deviation	2.34	0.80	1062
	Maximum	12.25	3.36	200
	Minimum	4.11	0.09	2700
Yaoundé	Mean	<b>7.26</b>	<b>0.74</b>	<b>1885</b>
	Standard deviation	3.73	0.71	2699
	Maximum	13.75	1.86	8760
	Minimum	2.106	0.04	60

**Table 4: Quantity of sewage produced in Yaounde and Douala (m<sup>3</sup>) (Berteigne, 2012)**

Town	Computed quantity at dump site (m <sup>3</sup> )		Specific production (m <sup>3</sup> )		Request for sewage draining	
	Gross	With uncertainty	Gross	With uncertainty	Gross	With uncertainty
Yaoundé	730	900	1850	1350	2300	1260
Douala	1785	2271	2444		3423	

Depending on the method of evaluation used, total sewage production in Yaoundé varies between 1850 and 2300 m<sup>3</sup>/week. In Douala, this production varies between, 2444 and 3432 m<sup>3</sup>/week (Table 4).

Upper value quantification in Yaounde indicates that there is a consequent deviation between the potential quantity of sewage produced in the town and that collected and dumped in Nomayos. In Yaounde, only 2/3 of sewage in septic tanks is drained. This can be explained by many factors. First of all, field observation was done during the dry season, whereas, all stakeholders in the sector acknowledge increase of activity during the rainy season. In addition, a growth rate of 5 % per year was attributed to the entire population of Yaounde, whereas, even if this value was to be true, it would hold for the neighbourhoods at the outskirts of the town and not the centre and the old neighbourhoods where the population is relatively stable.

In Douala, on the contrary, the volumes calculated at the dump site were coincided with the potential production evaluated using the specific production method.

#### **Sewage produced mainly by households**

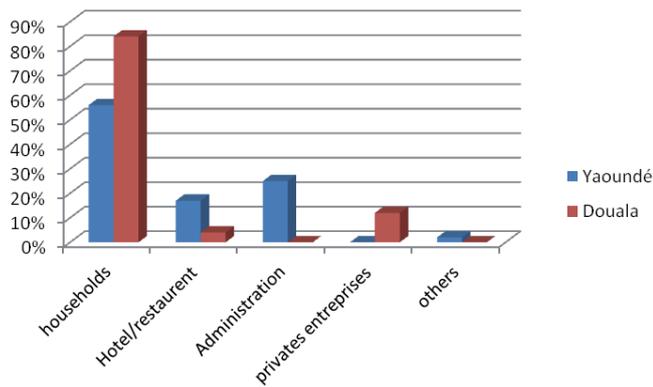
Households are the main customers of manual sewage draining in the two towns: 56 % of the customers in Yaoundé and 77 % of those in Douala (Figure 6).

In Yaoundé, restaurants and hotels represent 17 % of the customers or the third highest proportion after administrations and households. Administrations

represent close to 25 % of the sewage draining customers in Yaoundé. In Douala, on the contrary, administrations did not feature among the customers during the time of study. Companies and others such as restaurant and hotels made up 12 % of the customers. This observation is justified by the economic and administrative functions of the towns of Douala and Yaounde respectively. Following the type of sewage draining works, the draining of septic tanks is the most common in the two towns (Figure 7).

In Yaoundé, 90 % of sewage draining works are on septic tanks, followed by latrines and public toilets at a marginal proportion (less than 5 %). Septic tanks are by far the most drained and this can be explained by the cost of draining. In effect, it is clear that owners of septic tanks are among the well-to-do households, cesspits are often a reserve of inhabitants of semi-structured or completely spontaneous neighbourhoods. This last type of toilets is often drained manually or is abandoned by the owners when they are full. Besides, cesspits in Yaounde are very deep, and therefore have a life span of more than 15 years. Draining of cesspits in Yaounde is difficult since many of them are stuffed with solid non-biodegradable objects that are aspirated with difficulty.

In Douala, on the contrary, besides septic tanks (77 %), a proportion of pit latrines (23 %) are drained. These latrines are not deep and are generally wet due to risen underground water, all of which facilitate manual draining. Following the quantity of excrement produced and the sewage dumped in Nomayos in Yaounde or in 'Bois des Singes' in Douala, there exist a considerable



**Figure 6: Distribution of sewage producers in Douala and Yaoundé**

volume of sewage in the two metropolises that is not dumped in the cited sites, or which scavengers dump illegally in depressed zones, thereby increasing pollution pockets in these towns.

### Analysis of the poor functioning of the sector

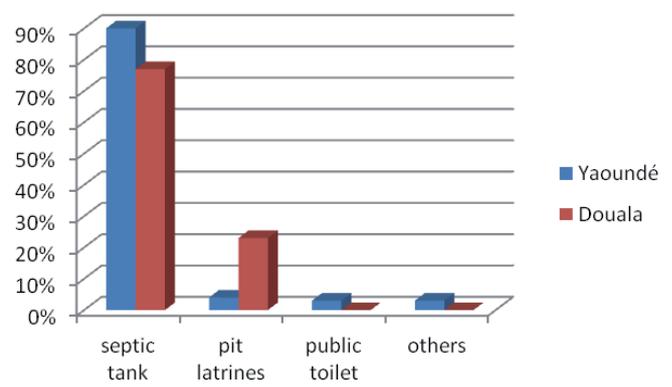
#### Management of sewage by diversified and less organised actors

In the two cities of Yaounde and Douala, a multiplicity of actors called “scavengers” intervene to ensure the functioning of the sector. They operate as individuals focusing on the gains to make and expected interests.

First of all, we notice the presence of bosses who are amateurs that have succeeded to render the trade of scavengers a profitable business from which they can even feed. These are greedy business people who want to make a fortune or voracious civil servants who invest in buying lorry tankers, evading administrative procedures and recruiting drivers who help in running their enterprise. The name enterprise is just for convenience as the headquarters is often the home of the boss who is interest in the daily returns.

The drivers-owners of the lorry tankers are sole proprietors of their enterprises. They are at the head of their own business where they reap their essential allowances. They are keen about the good functioning of the sewage management sector and they are attentive to all information emanating from State or municipal services.

The drivers of the tankers are the nerve centre of the sewage draining enterprise. They embark on the search for customers and ensure the transportation of sewage up to the dump sites. They serve as a link between the boss and the customers. They charge and collect draining money, which they subsequently hand to the bosses. The motor-boys are the stuffing asses. These are labourers who carry out odd tasks such as adjusting and rinsing the tubes, opening and closing the cesspits,



**Figure 7: Types of sewage draining works in the two towns**

opening the sluice valves at the dump sites, etc. they are permanently in contact with the excrement and are exposed to disease attack. In the course of time they turn the stool without being irritated and without putting on individual protective equipment (IPE). Gloves, protective glasses, boots and mufflers seems useless to them; being in direct contact with excrement without IPE, a motor-boy gets set to open the sluice valve of a lorry tanker that is ready to dump sewage at the “Bois des singes” site in Douala (Figure 8).

There are intermediaries who go after allowances. They enter all corners of neighbourhoods to propose sewage draining services or use their human relations to capture as many customers as possible whom they take to the different drivers following their bargaining power or dealings. They constitute an important link in the life of the sewage management sector. Carefully flattered by the drivers, they do not hesitate to practise higher bid and at the same time, they make profit from the customer and the driver who pays him the stipend that was negotiated in advance.

The customers captured by scavengers are no other than owners of houses whose toilets are full. They are constantly searching for better services at a cheaper



**Figure 8: Opening a sluice valve of a tanker at “Bois des singes”**

price. In Yaounde and Douala, every household has a potential sewage draining service provider.

Purported landlords of the dump site, particularly in Yaounde, generate substantial income from this activity due to the simple fact that they use a piece of vacant land, which they claim ownership, whereas it is actually State land. In effect, for each trip, the driver pays a fee of 5000 FCFA in Yaounde to dump the sewage collected in the town, while in Douala, it is 1500 FCFA. The purported landlords are bent to participate in environmental pollution. Besides the purported landlords, in Yaounde, the people of the village of Nomayos have organised themselves to equally benefit from the fallouts of the untreated sewage that is dumped in their village. They share the dumping fee paid to the Council of Mbankomo and quite often do not hesitate to organise strike actions. Last June, they blocked the site for two weeks, forcing scavengers after serious negotiations to increase the fee to 15000 FCFA/trip.

The municipalities are locally represented by urban council and the rural councils. Their role is only to sign authorizations acknowledging permit to carry out the activity when solicited. They also benefit from the taxes paid by scavengers in the sites of Nomayos in Yaounde and 'Bois des singes in Douala without carrying maintenance in return. These local councils partially ensure the parking of scavenger's trucks and the circulation of these trucks within the town.

The State assumes just its regulatory role and sporadically regulates the profession of scavengers by adopting some laws. Through the deconcentrated services of the Ministries of Environment and Nature Protection and of Sustainable Development, it organises sporadic inspection missions to the dump sites. These missions are not backed by any real intention to have mastery of the sector, or as a strategy through which the sewage management sector could be restructured and organised. No one doubts the fact that growing interest attached to environmental issues each time, instigates the government of Cameroon to adopt consequent legislative texts the following years to re-orientate development initiatives of the sector geared towards the treatment of excrement in urban milieu.

It should be underscored that, in the field, the sewage management sector is characterised essentially by the absence of synergy between the stakeholders. In effect, urban and rural councils at the periphery act in disperse ranks, in isolated manner and do not have concerted interventions. Under such circumstances they phase out in the field, undermining the effectiveness of their actions. This is the same situation with State specialised services.

Corporate organisations that scavengers have attempted to form up to now, be it in Yaounde or Douala, have been weakened by internal squabbles

and the lack of will power of the members. Due to the weakened nature of these bodies, they have never been represented at the level of the administration or the promoters of sewage draining societies.

#### **A sector characterised by multidimensional problems**

Suboptimal organisation of sewage management in the towns of Yaounde and Douala allows for the emergence of side problems, which hinder locally, the development of this activity. From the analysis, some of them are of interest.

The sewage management sector in the two towns is characterised essentially by poor organisation of the sector due to laxity of the managing authorities of these agglomerations. In fact, there exists no structures that co-ordinate the activities of scavengers. Consequently, only few of them fulfil the required administrative formalities. In Douala, for instance, only four enterprises have obtained approbations from MINSANTE, which allow them to operate legally. In Yaounde, no sewage draining enterprise has been approbated. At moment, it suffices to acquire a lorry tanker to go about the trade with all ease in the two big cities of the country. Thus, it is understood that the sewage management sector is not regulated by the competent authorities.

The difficulty in managing sewage in the two metropolises of Cameroon engenders anarchy in the prices paid to scavengers, problems of managing dump sites in Yaounde and Douala and instigates intentional dumping of faeces in depression zones. Following inability of the State to manage sewage adequately, the current dump sites are real microbial breeding grounds and these microbes spread the polluting matter to the immediate and even far off environment.

The poor organisation extends to the scavengers who evolved in isolated or dispersed ranks. As such, they are powerless and cannot withstand the pressure from their bosses, police harassment, cheating attitude of customers and bottle necks of State agents.

In addition to these organisational problems, are not negligible financial problems. To start sewage draining business, it requires that a promoter invests heavily in the buying of a lorry tanker; acquire administrative documents such as insurance, technical inspection, packing permit etc. Quite often, the promoter is forced to resort to loans either from banks, thrift and loans or various relations. Datelines for repayment are always moments of agony to the promoter. The amounts gathered, however, are often enough to buy only second-handed lorry tankers of more than 20 years, which often witnessed break downs thereby making it difficult to respect the terms of the agreements contracted when the credits were got. Amateurism of the promoters of sewage draining corporations is a torn in their flesh. Quite often, they are less prepared to manage an enterprise and as such do



**Figure 9: Access route to the dump site of Nomayos in Yaoundé**

not have a viable business plan with confusion setting in between managing their personal revenue and that of the enterprise. This attitude is justified by the many interruptions of activities observed every year or the non-payment of driver due to lack of liquidity.

In addition to the aforementioned issues, we can include the inability to manage the access roads to the sites, an issue that hinders appropriate dumping of sewage. Access to the Nomayos dump site is almost impracticable due to permanent presence of pools of water (Figure 9).

### **Attempted solutions to ameliorate sewage management in urban milieu of Cameroon**

The daily management of sewage in Yaounde and Douala, characterised by *laissez-faire*, is not adequate to ensure sustainability of the activity despite its importance in the regulation of urban life. Counter actions ought to be taken in order to ameliorate the current situation.

As a matter of urgency, the State and the two urban councils need to concert in order to identify the main problems plaguing the sector and manage them following the required norms and to secure appropriate dump sites for these two metropolises. This action will lead to the build up of a large treatment system that will serve for the reception of faeces and to the putting in place of a mechanism for treating the sewage before disposing it into nature, as well as managing the access road. These basic issues, undoubtedly call for a better handling of the sector through reinforcement of legislation, the putting in place of modalities to protect scavengers who are in permanent contact with the pollutants, and the organisation of the profession of the scavengers.

Such intervention from the State will surely lead to a better internal organisation of the scavengers of each town into a corporation. In the past, attempts to bring scavengers into an association were not brought to fruition. The initiators of the project lacked the required

charisma and wanted to safeguard their immediate interest as individuals. Scavengers in the two towns today are expressing that wish to come together in order to defend their common interest, uphold the principle of equity in the treatment of customers by all exploiters or operators in the sector, and ensure the protection of use rights in terms of tariffs practised and to offer quality services. Conditions for taking this measure are provided for by law n°90/053 of 10 December 1990 where it allows for liberty of association in Cameroon.

One of the major problems in the management of sewage is access to funding, which is very necessary in the running of the enterprise when the lorry tankers have serious break downs. This often causes the tankers to be down for long affecting the bosses as well as the employed staff. We can envisage a mechanism through which a relationship is created between banking institutions and scavengers where loans are granted and guaranteed by the State under certain conditions.

### **Conclusion**

Human settlements produce excreta that is either disposed in nature or stocked in cesspits. This human waste is repugnant since it is known to be highly polluting and is the cause of many infections. It can lead to serious illness if poorly handled. This is effectively what is happening in the towns of Yaounde and Douala. In these two agglomerations, excrement that collects in various cesspits, is at times drained by professionals and dumped in sites that are not maintained at urban periphery. This poor disposal constitutes a danger to the surrounding populations who inhale the pungent odour, use the sewage as manure in their farms or come in contact with it while carrying out their daily chores without foreseeing the consequences that can ensue.

The scavengers themselves are no longer inure to the excrement. Due to repeated manipulation of the sewage, they become accustomed to it and easily accommodate the

situation. They rarely make use of IPE and this exposes them to many infections, some of which are incurable. The management of sewage requires the intervention of the State and the municipalities, not only to collect taxes, which are often poorly used, but after all, to create enabling conditions for the dumping of sewage in well maintained sites. In this regard, those managing urban affairs ought to:

- put in place realistic and practical modalities for draining and dumping of sewage in urban milieu;
- favour the grouping of scavengers into associations for the defence of their interest;
- put in place a concertation plate-form between the local stakeholders of the sewage management sector in urban milieu; and favour intensive communicational actions;
- maintain the dump sites following the norms regulating waste disposal at the peripheries of the two big towns;
- regulate the contract between customers and the scavengers by pasting the accepted prices in public places; and
- adequately treat sewage before dumping it into nature.

An adage says that sanitation is the dignity of man! Despite its established importance, this burning issue does not seem to be currently preoccupying to authorities managing urban affairs in Cameroon.

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