EXECUTIVE SUMMARY

REPORT OF THE SITUATIONAL ANALYSIS OF FECAL SLUDGE MANAGEMENT SECTOR IN TAMBACOUNDA

(*Final report*)

CONTEXT AND JUSTIFICATION

In Senegal, the improvement of the lives of people through efficient and appropriate sanitation is a priority for the public policy of the Government and its development partners. However, political and strategic directions of the government have long advocated the "All for the sewer" to the detriment of individual draining systems, while about 75% of the population has individual draining system through the country. Significant efforts continue to be made by the National Sanitation Office of Senegal (ONAS) and have also helped to improve the offer of services of fecal sludge management.

Despite this, many problems are still recorded in the chain of collection and transport of fecal sludge in urban centers.

The region of Tambacounda being not spared to this situation, knows many difficulties resulting from the absence of regulated dumps with all that it entails as consequences for the health of the population, the environment etc. and a well known lack of organization in this sector . This is what motivated the intervention of USAID in the region through the Tetra Tech ARD that contracted with DIG structures to facilitate the establishment of an organizational and adapted device. The process begins with an inventory or a situational analysis of the sector.

METHODOLOGY

The methodology adopted is based on the following points:
- The bibliographical review
-The mapping of actors
- Qualitative survey
- Quantitative survey
- The Participant observation
- Routing
- The organization of a workshop on organizational planning

The application of this method has resulted in interesting and instructive results on the field of the management of fecal sludge in Tambacounda which could be summarized in the following paragraphs.

PRESENTATION OF RESULTS OF SURVEYS

Access to sanitation utilities

98% of people surveyed have latrines against 2% who use the neighbor latrines or just go to the bush. The most widely used technology in the management of excreta remains traditional latrines with 56% of households followed by VIP Latrines (26 %).

Draining system types

The mechanical draining system is predominant with 93% against 7% for the manual. On one hand 30% of latrines are emptied at least once a year and a relatively large proportion around 21% are drained twice a year. On the other hand there are 22% of households that engages in the draining every 2 years.

Determining factors in the choice of draining system

The study showed that several criteria may be involved in the choice of draining either manual or mechanical. According to the survey, the quality of the service appears to be the most decisive criterion for 26.2 % of households. The availability of cesspit emptiers come second with 21.8 %, followed by the cost 6.7 %.

Cost of draining

The rates set by the cesspit emptiers are: 3500 FCFA per cubic meter (m3) for the mechanics, and turn around 2000F CFA m3 for manual emptying. These rates are generally negotiable. Based on the routing results, It appears that sometimes the draining is charged 3.000F CFA per m3. If the number of cubic meters is important to drain it even happens a lump sum with an average of below 3000F CFA is applied. For example, a pit with a capacity of 7 m3 is drained for a price of 20.000F CFA or 6 m3 for 14.000F CFA.

For the administrative services or private institutions, the price is not determined by m3 but the minimum is 20.000F CFA for every draining activity despite the capacity of the pit.

Level of satisfaction of the draining services

It appears from the analysis of the level of satisfaction that the overwhelming majority of respondents, 87% say they are satisfied with the services offered by the cesspit emptiers.

Discharging of fecal sludge

Regarding draining, the cesspit emptiers dump the fecal sludge in the nature in defiance of every precaution to protect local communities and the receiving environment. The site of Saraguilel remains the busiest place of discharging with 36% of draining operations. The dumping place facing the regional hospital has 16 % of the activities of disposal of fecal sludge.

Draining service providers

The mapping of actors in the sector has identified three types of actors who are active in the chain of collection, transport and disposal of fecal sludge: private operators who manage small associations such as GIE or small and medium enterprises (PME) and that do the job as a secondary activity.

These are:

1 - Aidara & Fréres

2 - Apanguessou SUARL

3 - GIE Yellitaré

4 - Cheikhou Sakho

It is important to note that only Aidara & Fréres and Apanguessou SUARL trucks continue to offer their services to the population. The GIE Yellitaré occurs in the family setting level only and Cheikhou SAKHO no longer works.
Besides these operators are a total of 14 cesspit emptiers listed throughout the town: 21,42% manuals and 78.50 % Mechanical.

Regarding the organizational aspects, the evolution framework of these companies is not regulated. In fact, they do not pay taxes to the municipality and are left to themselves for the organization of their activities. They are not organized as a corporation and therefore have no designated interlocutors. This weakens them a lot.

The municipality and the technical services are aware of what is happening between the cesspit emptiers and the population but do not intervene.

The park available for these companies is not well off in terms of quantity and quality. In fact, it is only composed of 6 obsolete trucks (see photos) distributed among firms with 1 of 14m3, 3 of 8m3 and 2 of 4m3. Two broken down, so only 4 trucks are working (1 of 14m3 and 2 of 8m3 and1 of 4m3).

Truck seen from the back

breakdown truck

with regard to the staff, the number of employees varies from one structure to another. The organizational model remains the same; truck owners attach the services of a manager who supervise drivers and maneuvers.
These companies are facing difficulties in their work which can be summarized as follows:

- Lack of a station of fecal sludge treatment;
After emptying, truckers are oblige to unload the fecal sludge into sites that are not controlled but used by the population.

- Repeated problems of breakdown trucks.
The existing park is characterized by outdated equipment. This explains the repeated breakdowns of trucks.

- Sanitation utilities (latrines) to drain that does not meet construction standards making emptying very difficult or even impossible in some cases.

- Price rise of fuel

- Lack of controllers: the draining sector in Tambacounda is struck by the absence of any regulation of the activity of draining.

With regard to the financial aspects of draining companies, the survey has revealed a lack of formal accounting system, which is a huge challenge for any effort to understand the cash flow in the business. In fact, no operator operates on a well-organized system. It is rather a rudimentary management that prevails.

The attempts of reconstitution of some companies' accounts have showed a monthly profit of 250.000F CFA and an annual profit of 2.833.000F CFA.

With regard to expenses, operational coasts occupy 70.90% of annual expenses .Wages come in second place with 26.47%, and finally insurance and technical inspection representing 2.63%.

It should be noted that of all the charges, fuel (56.71%) is far the most important. This explains the decisive influence that its cost has on the pricing.

The financial profitability of draining companies depends on their size, being not able to have a developed operating account according to the basic rules of a formal accounting, through the routing we have followed a truck from another larger company which counts 3 trucks, to evaluate its weekly turnover.

The weekly turnover reported is about 355.000F CFA gross profit margin per week.

The activity of mechanical draining of households cannot afford to companies to make financial performance. That is why the providers take the draining activity as a secondary one.

<u>Evaluation of Fecal sludge market</u>
The survey has also led to assess the fecal sludge market. In essence, the quantity of daily production of fecal sludge in the town of Tambacounda is approximately estimated to 98 m3 or 35,770 m3 yearly.
Meanwhile, there is a real potential, 82% of vegetable growers have expressed their willingness to buy compost made from fecal sludge and sold by a structure. But the price should be affordable.
With the rapid urbanization and the favorable trend towards the realization of modern sanitation facilities, the market for mechanical draining enjoys a good room for improvement and has real potential to develop further.

<u>Level of knowledge of the legal and regulatory framework of actors</u>

The vast majority of respondents (91.3%) do not know the current regulations of the management of fecal sludge. But this is not the case for the 8% who claims to have knowledge of this law. But what they know about the existing rules revolve around two aspects that are: the prohibition of digging pits in the street and the norms to carry out excavation in the street.

This high proportion of ignorant of law raises concerns and could lead to a reflection on a campaign of mass sensitization.

At the institutional level, the actors we met have a vague knowledge of the laws specifically codes or statutes of Hygiene and Sanitation as a whole but do no master any of the specific articles or texts on the management of fecal sludge. Hence, the need to explore the possibilities to initiate training programs on legal aspects in favor of this category of actors.

The perception of population in the management of fecal sludge

Investigations on the issue of the perception of people on the management of fecal sludge dumping place showed that the overwhelming majority of people surveyed around 88.87 % say to be much disturbed by the dumping of fecal sludge in the street. The studies showed that the neighborhood play an important role in the method of fecal sludge draining.
The cultural beliefs strongly have an influence on the mode of disposal of fecal sludge.

Willingness to pay for an improved management of fecal sludge

The survey results helped to get an idea on people's willingness to contribute financially to improve the management of fecal sludge. In fact, 61% have a monthly income not exceeding 50 000 FCFA, that is why they do not always agree to pay for draining. Various proposals were made for the rate according to their financial means. The majority, about 68.79 % agrees that the reasonable price to apply in order to improve the management of fecal sludge should not exceed 5000 F CFA.

Valuation

To conclude, the dimension of valuation that constitutes a central link to seat the value chain of drainage was discussed. Initiatives of enhancement have been developed by some farmers and SINVAD project. No experience with compost of fecal sludge has been reported in the context of the study. The farmers surveyed admit they have never had to engage in such an experiment.

PROPOSAL OF A MODEL OF AN IMPROVED MANAGEMENT OF FECAL SLUDGE IN THE DISTRICT OF TAMBACOUNDA

At the end of the study, recommendations will be translated in responsibilities and roles of all actors who hover around the sector in order to seat the bases of an improved system of fecal sludge management in the town of Tambacounda. The mayor is expected to play the central role of regulation and control, and bringing all stakeholders to comply with the rules.

DEFINITION OF ROLES AND RESPONSIBILITIES OF ACTORS

Households

As users of individual sanitation utilities and producer of fecal sludge, households are key actors in its management. It is crucial that they are called to express their needs and views and participate in the project of fecal sludge management.

Their roles can be summarized as follows:

- Use of operators approved by the City Council for emptying latrines when they are full;

- Payment of allowances to cesspit emptiers at the agreed price;

- Respect of the conditions of use of latrines to ensure proper maintenance and easy emptying after filling pits;

- Build individual sanitation utilities that meet the standards of construction;

- Establish community rules against wild fecal sludge disposal in the streets;

The Committee of District Development (CDD)

The community approach and the mentoring of households constitute a lever that we could rely on to begin the process of behavior change. The CDD that have a good network in the town could be catalysts through the following actions:

- Ensure the sensitization at the district level based on shift workers or facilitators selected among members;

- Serve as an interface between the municipality and other stakeholders and populations;

- Ensure the monitoring of the good practices of draining pits.

- Get involved in the operations, the system of collection, treatment and recycling of household wastes and fecal sludge.

- Initiate periodically human investment operations to complement SINVAD activities

Draining operators'

private operators

The main actors of the sector who have invested a lot of money and sometimes create significant jobs are expected to play a leading role:

- Get involved in the process of defining the criteria for certification ;

- Comply with regulations governing the sector of fecal sludge,

- Provide to field staff protective equipment (gloves, masks, helmets, boots);

- Set administrative and technical standards for trucks emptying;

- Train and educate staff trucks (cesspit emptiers) to best practices of emptying;

- Get organize in formal structure and develop strategies to find funding to renew and expand the dilapidated and inadequate fleet ;

- Establish a policy of pricing for the services of the draining;

- Ensure that competition does not undermine the organization of the sector because it is characterized by the lack of tools and mechanisms of regulation of competitions;

- Ensuring cesspit emptiers medical monitoring and vaccination against diseases (hepatitis , tetanus , etc.)

Mechanical cesspit emptiers

Their need to provide essential services for mechanical emptying is predominant in the municipality. To improve the system, these actors should:

- Respect the rules of conduct and behavior especially for drivers

- Wear protective equipment

- Avoid wild unloading operations . Evacuate only at the site set for the purpose

- Respect the emptying price fixed by all actors

- Pay the unloading fee if a station was open, In fact the study revealed that all the cesspit emptiers surveyed agreed for the payment of an unloading fee. The prices proposed are around 150F to 200F CFA m3

- Establish an association to better plead their case

Manual cesspit emptiers

Manual emptying being difficult to eradicate, that is why these main actors must be taken into account in any effort to improve the sector. Although this segment of the population is difficult to estimate because of the nature of the activity they perform, the fact remains that being essential actors, they also play an important role in the entire organization of the setting up of the system. This should be done through:

- Respect of norms and rules of draining

- Wearing protective equipment

- Integration into the formal system through their retraining in the world of mechanical emptying or in the area of processing and marketing of by-products

- Getting organized into a formal structure

Market gardeners:

To establish the network value of the productive sanitation, market gardeners appear as key actors in the management of issues related to agricultural valuation. Their involvement in the process is more than vital. However in return, they must:

- Ensure a safe reuse of treated fecal sludge for fertilization needs and according to the rules recommended in this regard;

- To get organize into associations to defend their interests and facilitate the establishment of a channel for the processing and marketing of treated fecal sludge;

- Fighting against any activity of unloading of untreated fecal sludge in the fields by truckers

Town hall

The major finding that emerges is that the management of municipal solid waste captures more attention from local authorities that the management of fecal sludge that seems to remain for the time being of little interest to the municipal team. It is necessary to break this trend. The mayor and his team should not be inactive with this situation of the management of fecal sludge at its administrative area. He should rather be at the center of any initiative of improving the sub-sector, because he is expected to play the central role of regulation and control, bringing as well all stakeholders to comply with the rules. For this project, a number of activities are expected from him and his team:

- Integrate the issue of fecal sludge management in urban planning through a collaborative process of diagnosis and planning as recommended in the Environmental Sanitation Approach Focusing on Households (AECM) for technical and institutional solutions indeed make sense if they offer effective responses to stakeholders, and are taken care by the responsible institutions (Koanda , 2006);

- Conduct an organizational audit of the sector

- Regulate the draining activity in developing rules that will oblige all operators to unload in the regulated and planned sites

- Close the existing sites and use a single site for the entire region. The idea of this transition site until the implementation of a station of treatment of fecal sludge is to mitigate environmental (infiltration and contamination of the water table, etc.) and health problems that the presence of multiple sites is causing;

- Provide equipped parking areas for parking emptying trucks .

- Establish a monitoring system for private operators

- Formalize and ensure the payment of municipal taxes by operators

- Develop criteria and lead all the certification process (working sessions and information workshops until the issue of the license) in collaboration with SUWASA and other actors

- Structuring the market of fecal sludge management

- Initiate regular meetings to assess the respect of the terms of agreement by both parties

- The implementation of all these provisions listed above favor the existence of a well-regulated and organized framework which consequently could facilitate the creation of new businesses of draining. This is of great importance to meet the demand and enhance the area. As the main force for the management of fecal sludge is mainly due to the spontaneous development of small private operators, more or less dynamic, offering adapted services to the needs and means of populations (Koanda 2006).

- Find partners for a station of fecal sludge treatment with the support of SUWASA and other partners

- Capitalization and dissemination of the experience

SUWASA

SUWASA as a pioneer in the search for solution to the problem of managing fecal sludge would benefit from continuing the process by setting up a series of accompanying measures that would turn around the following actions:

- Supporting the mayor in the selection and development of one unloading site that is regulated and controlled. Help the municipality in managing this site through a program of capacity building.

- Initiate an integrated project of drainage and hygiene promotion which aims to improve the rate of access to sanitation facilities and respecting construction standards (TCM , VIP, septic tank, washtub, simple shower, hand basin)

- Help the municipality to look for partner for the realization of a station of fecal sludge management. If funding is secured and available, ensure the involvement of households in the selection of the site and the technology. For the experience showed that the level of community involvement in the process of setting up treatment's station is very low for all ONAS projects. Only superficial sociological studies are conducted and the choice of technology is not done together with the population (source: integrated management of the sector of fecal sludge, 2007). This often leads to social tensions as evidenced by the experience of the population of Cambéréne who were against the construction of a station.

- Support the implementation of a certification process

- Support the conversion of manual cesspit empiers to integrate the formal system

- Support the establishment of a distribution network of treated fecal sludge or compost made of fecal sludge and household garbage

- Develop a program of capacity building towards:

    - The market gardeners about the techniques of agricultural improvement of fecal sludge (compost based on fecal sludge and household garbage). This may facilitate the management of household waste in the town, and also about the methods of environmental protection (fight against the misuse of chemical fertilizers, etc.)

    - The technical staff of the municipality on the control and maintenance of the unloading site;

- The municipal technical services in urban planning (infrastructure and basic services of drinking water and drainage of wastewater and excreta) and legal aspects of the draining .The skills required, the legal framework and expertise at the municipal level are often lacking;

- Cesspit emptiers in administrative and financial management (the basics of accounting to enable their transition from informal to formal) and in social and commercial marketing and on legal aspects of draining

- Design and implement an IEC program in collaboration with the municipality for the actors such as cesspit emptiers, CDD, households, etc.

- Follow the reuse of by-products of fecal sludge process

- Support and advice to stakeholders

- Conduct an environmental impact study on the area of the management of fecal sludge. It would be interesting that SUWASA embarked on this study to draw up an inventory that will serve as a reference to objectively measure the impact an improved management system could have at the commune level

- Develop an advocacy program. In other words, getting the message to political decision makers that the efforts made on the draining system improve public health, reduce poverty and create jobs. The advocacy can be done through communication channels (newspaper, TV, radio, etc.) And pressure groups such as (civil society, communities, traditional and religious leaders). To promote the cause of fecal sludge management; the CDD and other stakeholders who are busy on the area of water and drainage through this platform offer credible partners that could help to carry out this work and get positive results.

- Capitalization and dissemination of the experience

Platform of actors

The platform appears as a unifying framework for all actors of water and draining system that operate in the region of Tambacounda. Its involvement is necessary to serve as a sounding board and a forum to initiate advocacy. Indeed, it could play a bridging role to better take in charge the issue of fecal sludge management by the actors and authorities.

Regional Office of Environment and Classified Institutions (DREEC)

The close relationship between the management of fecal sludge and environmental issues require that this technical department of the government be first and foremost associated in the process by:

- Establishing the conditions of collection, transport , unloading and dumping of fecal sludge in collaboration with other stakeholders;

- Collaboration with the sworn officers of the sanitation service for the control of hygienic practices in general and in particular for the draining of septic tanks;

- Fix the terms of valuation of fecal sludge ;

- Monitoring the respect of environmental standards for fecal sludge mainly at planned sites

- Support / advice private operators and cesspit emptiers in the certification process

Hygiene Service

Given the broad side of hygiene and the central place it occupies in the chain of value of drainage, the departmental brigade is highly challenged to play its sovereign role. It is under this scheme to ensure :

- The application of Article L22 of the hygiene code prohibiting to throw waste water, to put urine and excrement on the public highway

- The application of Article L63 of the hygiene code , which states that "violations of hygiene are assessed by the officers of the judicial police, the hygiene officers and the sworn officers of hygiene services,

- Fight against manual emptying

- Sensitization of the population in collaboration with the CDD on good hygiene practices in the field of drainage

- Supervision and control of the arranged and planned unloading site in collaboration with the technical services of the municipality and the DREEC

Police Department

Police through its elements of road traffic is an actor in permanent contact with truckers. It is expected to perform the following actions:

- Application of Article 63 of the hygiene code indicating that violations of hygiene are assessed by the officers of the judicial police, the hygiene officers and the sworn officers of hygiene services,

- Fight against police harassment on the road ;

- Check of safety equipment on trucks (warning triangle, signal cones, fire extinguisher, etc.)

- Check for the respect of norms of certification by truckers

Regional Service of Sanitation

In performing its mission, the Regional Service of Drainage could provide support / advice and respect of rules and regulations.

CONCLUSION

The sector of fecal sludge management in Tambacounda is marked by its informal characteristic. In fact, private operators offer their services to the population in a non-regulated environment. Municipal authorities and other stakeholders (technical services of the State and others) are all spectators.

The draining business generates indeed profits but it could also know better financial cost effectiveness because there is a real potential and an important request. Mechanical emptying being the most predominant model has a great potential.

It should be noted that the viability of draining enterprises is necessary to ensure the continuity of services delivered to the people. The financial balance, the improvement of their revenue by the professionalization, and institutional and legal environment are the determinants factors of sustainability.

The sector would benefit from developing the link of a valuation to lay the bases for a productive drainage system with agricultural reuse through composting based on fecal sludge and household garbage.

People who are aware of this situation are all driven by a desire to invest humanly and financially to improve the system. Their involvement in the whole process of change appears to be vital to any effort of improvement of fecal sludge management.

In summary, the alternative for a better care of the fecal sludge management sector in the region of Tambacounda would be through the establishment of a well-regulated and organized system where all the actors will play their roles fully and under the control of the municipality which is likely to ensure the central role of regulation.