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social innovation

AfriAlliance
MOOC#2
Final
Assignment

Title: *Flood risk reduction through appropriate household waste management and removing waste into the drainage networks: A case study of Moundou (Chad).*

Name of Participant: *MOUNGOUE DJANNI HERMANN*

DESCRIPTION AND BACKGROUND

Moundou, the second largest city in Chad, has nearly 180,000 population. Divided into seven districts, since 2012, the city has been administered by an elected Municipal Council of 29 people. Center of the Economic of the South region, the city has a certain number of huge manufactories (CotonTchad SN, Breweries, Tobacco factory).

The problem of rainwater sanitation has been present for more than 10 years in various strategic and programming documents. In 2013, sanitation was defined as a major national strategic axis in the "National Development Plan". Subsequently, the National Sanitation Policy and Strategy (NSPS), adopted in 2013, defined 5 axes of sanitation strategy. Among them:

- the gradual establishment of urban and semi-urban sanitation facilities in the main Chadian cities;
- Strengthening national, regional and local capacities.

At the regional level, the Urban Reference Plan URP (2011) as well as the Priority Investment Program (PIP) have integrated a component for the improvement of rainwater sanitation. The National Sanitation Policy and Strategy, which is based on the SDEA (Water and Sanitation Master Plan), aims in particular to develop and maintain viable solutions for the drainage functions.

In 2014, the Ministry of Rural and Urban Hydraulics of the Republic of Chad commissioned, with EU funding, the production of Master Plans for Rainwater and Wastewater for the city of Moundou, one of whose objectives was to "Contribute to reducing floods and sanitary and environmental problems linked to sanitation. In continuity and coherence with these documents, the Ministry of Water and Sanitation, with AFD (French Developing Agency) funding, launched the Flood Control Project in Moundou in March 2016.

The SDEA indicates that 47% of the surface of the municipality of Moundou is in a flood zone, which has an impact on health and the environment and affects around 80,000 people. These floods occur mainly during the rainy season and are due to several natural phenomena (rise in the level of the Logone, overflow of Lake Taba or Lake Wey, rainwater).

Faced with these hazards, Moundou must face an unfavorable physical environment. The city is largely located at a low height and in the flood field of the lakes and the Logone.

In addition, the topography is not very marked (<0.5%) which limits the natural evacuation of rainwater and causes the formation of stagnant water pockets. The canals are frequently clogged with waste, which increases the risk of overflows and reduces the capacity of these structures. The proper functioning of the drainage channels is therefore dependent on the proper management of solid waste: it is necessary to regularly clean the rainwater drainage network and to put in place alternatives so that the population no longer throws waste there. The municipality which is in charge of urban sanitation has the responsibility of ensuring the proper management of its hygiene and sanitation service, which also includes waste management.

The town hall's hygiene and sanitation service rely on district maintenance workers, supervised by district hygiene and sanitation delegates, appointed by the regional health delegation. The municipality also relies on the BCCA (Coordinating office of sanitation committees), which coordinates neighborhood sanitation committees for removing waste and awareness operations. These voluntary structures, made up of voluntary population of the districts, are weakly organized. They operate more by punching actions than by a logic of sustainability, for lack of material, human resources and a more efficient organization. These sanitation committees are brought together under the structure of the CA (Sanitation Committee) Coordination Office, whose honorary president is the city's mayor.

The sanitation committees are involved in cleaning the markets, collecting waste and removing waste into the drainage channels.

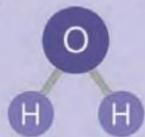
Abstract

In Chad, since the 2000s marked by numerous laws on decentralization, the waste service is the responsibility of the municipalities. Although invested with this news prerogatives, the city of Moundou, the second city in the country with more than 165,000 inhabitants, encounters many difficulties in effectively managing his service. She accumulates many unsanitary conditions: persistent wild dumping grounds, polluted banks of the Logone river, poorly maintained roads and canals, waste discharged into uncontrolled land, etc. Therefore, all the links in the solid waste sector are facing difficulties: the garbage collector are not structured and throw their waste on the track public or along the Logone river, small dumps have been built but are not evacuated and the municipal landfill is little used, undeveloped and not controlled.

In addition, the municipality encounters great political, economic and technical difficulties: it receives state subsidies drop by drop, it has globally damaged rolling stock and a reduced payroll since the restructuring of 2017. Structuring and organizational efforts are underway but it will probably have to wait for a national economic upturn before the situation got any better. Thus, the short-term challenges today for Moundou are therefore:

- Organize and test an articulated household waste collecting system
- Make different investments depending on the system envisaged (for example, create transit areas for household waste).
- To have an improved landfill
- Define and implement the measures for the implementation of the mechanism: capacity building of actors, information, awareness, etc.

The success of waste management in Moundou will largely depend on the willingness and the capacity of the municipality to fulfill its role as leader, to mobilize all the stakeholders and the funding necessary to set up an efficient service and sustainable waste management.



TECHNOLOGICAL SOLUTIONS

“Inappropriate solid waste management is one of the major causes of flooding risk (a)

The main challenge of this activity component goes beyond the simple cleaning up of the 46 km of drainage channels during the duration of the project. It is also a question of providing the Town Hall of Moundou with a methodology which enables it to ensure the maintenance of rainwater drainage works over the long term.

Proposing such a methodology implies taking into account several dimensions:

- **a technical dimension:** proposing technical solutions adapted to the local context (silting up, rainy season, etc.),
- **a financial dimension:** take into account the limited financial resources of the Town Hall. To do this, it is necessary to reflect on several scenarios for the management of drainage works, including recourse to the private sector,
- **a social dimension:** changing the behavior of the inhabitants of the city who, in the absence of a solid waste management service, use the drains as a landfill.

CAPACITY DEVELOPMENT



Capacity Development (CD) is conceived as the inherent responsibility of people, organizations and societies themselves in which support by external parties can play an important role (Vallejo and Wehn, 2015) (b)

Training modules will be developed for the different stakeholder groups:

- the municipal services of the Town Hall will be trained in technical monitoring (including maintenance of cleaning equipment), administrative and financial aspects.
- CA members, or sanitation agents who are not part of the CA, will be trained to respect health and safety rules during sanitation operations.

The cleaning agents will receive safety equipment (boot, glove, masks, etc.) and sanitation equipment.

Depending on the needs identified in the diagnosis, the purchase of equipment to lift the slabs covering the drains will also be made.

The appropriation by the municipal technical services of the toolbox, transferred to the community, will be carried out through support and a continuous training process during the headquarters missions of the two NGOs.

From the diagnostic phase, interviews with all project stakeholders will be conducted by the project team, to identify their training needs. Following this, a training plan will be designed, highlighting the needs by category of actors, as well as the training provided for in the terms of reference:

- The municipal executive, decentralized services and a few elected officials will benefit from ad hoc technical training on planning, public procurement procedures, service management according to the progress of the project, The municipal technical services will benefit from daily support, appropriate training and tools on the management / control of the service, awareness campaigns, etc.
- The BCCA, the members of the CA and the operators of the service (in particular women) will be trained on the functioning of the service, the awareness campaigns, financial management, etc.

SOCIAL INNOVATION



GOVERNANCE STRUCTURES

“Governance is essentially the processes and institutions through which decisions are made » (Lautze et al., 2011) (c)

Steering

The project plans to bring together a steering committee made up of both the Ministry of Water and Sanitation through its regional delegate, the City of Moundou, and the project coordination unit; this steering committee will meet once every six months in Moundou.

Activities planned for the steering committee:

- Project progress (Reports and planning)
- Amendment / validation of strategic choices
- Monitoring of project indicators

Operational and financial monitoring:

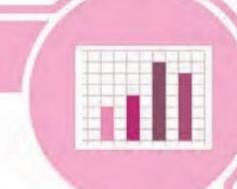
Quarterly progress meetings will be organized with the City Council (in particular its technical staff) and NGO as lead partner.

Operational and financial monitoring of the entire project will be carried out by NGO, starting with the project manager for the technical part and by the administrative and financial manager.

A verification of the accounts will be carried out monthly, accompanied by a management control for all the verification of compliance with procedures, procurement ...

Regular monitoring will be provided in the project area by the team in place coupled with supervision and support missions in the field by the various experts mobilized on it.

BUSINESS ROAD MAP



A capitalization strategy will be developed by the group to also meet the objective of transferring skills to the municipality and stakeholders.

To do this, we will conduct this capitalization according to two objectives:

- allow the passing of control between the project and the institutional actors and those that will be created (such as the garbage collector);
- draw lessons at sectoral level on good practices in terms of rainwater sanitation and the household waste management in Chad.

Then we will set up a capitalization system under 2 axes of work:

- capitalization of experiences
- capitalization of tools

It should be noted in the context of capitalization, that two deliverables integrate this dimension, namely the manual for the use of the various monitoring tools and the Guide to stormwater sanitation services, the role of each actor.

On the basis of these elements, our methodology is divided into three main stages:

o Step 1 (activity 1.1): carry out a diagnosis aimed at identifying the actions to be implemented to improve the management of the rainwater drainage function. The diagnosis will make it possible to propose different scenarios to the City Council, developed in consultation with the stakeholders;

o Step 2 (activity 1.2): train and equip municipal services and CA to carry out actions to maintain drainage channels. At the same time, awareness campaigns will be carried out with residents to explain the purpose of the sanitation operations and to raise awareness of good hygiene and sanitation practices.

o Step 3 (activity 1.3): launch the first sanitation campaign. The implementation of the scenario chosen by the local authorities will necessarily imply carrying out an initial sanitation operation of all of the 46 km of drains. This will make it possible to test the management mode of the network maintenance, starting from a completely cleaned network, and to refine the methodology over the duration of the project. Regular reviews will be carried out to adapt the maintenance scenario for the drainage works, with the support of the "storm drainage" expert. Support will be provided by the team on site to ensure the responsibility of the Town Hall.

- (a) Final Technical Report CRRP2016-07MY-Ishigaki: Appropriate Solid Waste Management towards Flood Risk Reduction through Recovery of Drainage Function of Tropical Asian Urban Cities , 2018 .
- (b) Vallejo, B. and Wehn, U. (2016) Capacity Development Evaluation: The Challenge of the Results Agenda and Measuring Return on Investment in Capacity Development in the Global South, World Development, Vol. 79, pp.1-13, doi:10.1016/j.worlddev.2015.10.044.
- (c) Lautze J., de Silva S., Giordano M., Sanford L., (2011), Putting the cart before the horse: Water governance and IWRM, Natural Resources Forum, 35, 1-8.

