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**ENSURING AVAILABILITY AND SUSTAINABLE MANAGEMENT
OF WATER AND SANITATION FOR ALL**

**How the technical approach of projects impacts the
sanitation sector in developing countries such as Lebanon**

M. Ricau (France)

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The approach focusing on technical design and implementation is still implemented in most development projects. Combined to the lack of coordination between stakeholders, this leads to insufficient service provision. While sector stakeholders on an international level have been shifting to a new approach, most of the developing countries haven't yet made this qualitative transition. This particularly affects the sanitation sector. In Lebanon for example, despite the millions of dollars invested by donors during the last decades to improve the sanitation system, only 8% of wastewater is currently treated. This is partly due to the same problems that occur in most development projects. One of the solutions would be to adopt an approach based on users' access to the service, which would be supported, during implementation, by specific actions targeting the institutional and social aspects of the project.

Changing the paradigm

Problems in development projects

Development projects aim at improving the life of beneficiaries, by giving them better access to a defined service. However in certain cases, projects suffer from being designed based only on technical data, preventing them to actually respond to the needs of final beneficiaries as initially planned.

Indeed, for years development projects have been designed and implemented following a very technical approach. The focus was to improve facilities, without considering other parameters that determine the relevance and usefulness of a project. In this approach, the various stakeholders are usually not involved from the beginning, and the social, political and legal frameworks that influence the projects are not taken into account.

Concertation from the start between stakeholders allows discussions that can lead to compromises and to the acceptance of the terms of a project by all. The lack of concertation usually leads to a lack of interest from the parties that were not included in the project design. This creates a gap in the chain of a service, as the participation of all stakeholders from design to execution is necessary to implement a complete service. This leads eventually to incomplete or non-functioning services. As a result, in a lot of cases, the achievements that the project reached during its implementation phase don't last once it is over, when the service is supposed to work without the input of the project initiator.

Moreover, the lack of understanding of the legal, administrative and socio-economic frameworks which influence the project can lead to an irrelevant design. If the national laws are not taken into account, decisions contrasting with them may be made; if the social habits are not considered, the service implemented may not serve the people if it implies too much of a change for their habits. Also, political interests can hinder a project that would have not taken into consideration this dimension.

New guidance from international organisation

Over the last years, a will to address these complex issues while designing development projects has emerged. International organizations have tried to set up guidance to take into account these situations. For example, the UN human rights-based approach preaches in favour of a holistic view of projects¹. It

emphasizes the importance of involving all levels of stakeholders and defining the framework that determines the relationship between them when designing and implementing a project. Also, The Millennium Development Goals (MDG) and Sustainable Development Goals (SDG) on sanitation insist on having a global approach of projects. This means considering the project as a way to deliver a complete service: from the producer to the user, with no time limit, and through all the aspects it is affected by. It takes into account the different aspects (legal, institutional, social, etc.) of a project, all considered of equal importance as opposed to an exclusively technical approach. It can enhance the chances of the project to become sustainable, as often neglecting one single aspect can lead to the non-functioning of the service.

All these guidelines indicate that projects should focus their end results on the service access to users (results-oriented management, ROM). Unfortunately, on the national level in developing countries, this change of paradigm hasn't started yet. The success of a project continues to be measured in terms of technical performance or infrastructures instead of the number of effective beneficiaries of the service. Indeed, it is easier for decision makers to quantify the number of buildings that have been constructed rather than to count the population of users that have access to the service. Moreover, the projects are still mostly implemented without coordination between stakeholders. As a result, people's living conditions are not being improved because the achievements of projects don't last once the sponsor leaves.

The sanitation system is a good example of how this approach is not working for development projects, as the technical approach to projects translates into an infrastructure access-based approach. To sum up, it seems that for now, building latrines and wastewater plants is still more relevant than achieving a greater number of users.

An infrastructure access-based approach: the example of Lebanon

Context in Lebanon

The situation of sanitation in Lebanon is not acceptable. Despite the fact that 448 millions of dollars have been invested to improve the country's sanitation system between 1994 and 2008, only 8% of the wastewater is treated, meaning that 300 million m³ of untreated wastewater are discharged into the Mediterranean. Only 63% of the population has access to a proper sewage system and only ten out of more than fifty constructed treatment plants are working.

Institutional situation

One major problem of the Lebanese sanitation system is the unclear legislative and institutional framework. Officially, the Energy and Water Ministry (EWM) is responsible for making sanitation policies and strategies; the Council for Development and Reconstruction (CDR) is in charge of constructing sanitation infrastructures financed by foreign institutions; and the Regional Water Establishments (RWE) are in charge of planning, constructing and managing the sanitation infrastructures (sewage systems and wastewater plants) on their territories. But the RWE dramatically lacks of human and financial means, which doesn't allow them to exercise their mandate. As a result, the CDR usually manages the plants after constructing them. On the other hand, according to a large interpretation of the law, municipalities can implement their own sanitation projects.

On top of that, there is a huge lack of coordination between all these stakeholders: the municipalities and the Ministry don't communicate, and neither the CDR with the EWM and the municipalities with the RWEs. In its National Strategy on Sanitation Sector for 2012-2020, the EWM highlights the need for coordination between stakeholders and the importance of raising the awareness of users. However, no concrete actions have been made in this direction.

Influx of refugees

Currently, the refugees represent 25% of the population of Lebanon, producing an excess of 14% of wastewater. 80% of them live in apartments in urban areas and are using the existing infrastructures. But these don't function at full capacity, mainly because the sewer system is incomplete and all the households are not connected to the wastewater treatment plants. Therefore, the increase of population is not a risk for over-using the plants.

Moreover, refugees are not considered as long-term residents, and as such they are not taken into consideration in the sanitation planning effort. Newly planned treatment plants are designed with a thirty-year population projection, considering that the refugees would have left Lebanon by then.

The fact is that the current situation where a large amount of non-treated wastewater goes into the natural environment is worsened by this new dimension, which has a great impact on potable water access and leads to pollution of surface water body and of the Mediterranean Sea.

The influence of the confession-based political system

There are eighteen different religious confessions in Lebanon, each representing a set of interests. They have a governmental representation based on their representation of the population. As a result, there is not a global interest for the whole population in state decisions. This does set a difficult starting point to have equally good public service for all users, and it makes it more difficult to have concertation between all the confessional representatives. However, this can be overcome and should not hide the real issue for public service: political interests and economic problems. The country is very centralized, with little decision and economic power left to municipalities. With a weak and poor state, which have difficulties correctly managing the country, this leads to inefficient public service.

Because of these confessional and political dissensions, it is very difficult to ensure concertation between stakeholders, and this is one reason why the CDR projects focus solely on technical aspects of projects. It tries to refrain political actors from using the project for their own interests and thus, it makes it easier to get the acceptance of all stakeholders. This approach can lead to effective implementation of projects; however it has its limits especially when it comes to the efficiency and the management of infrastructures.

Why the projects don't work

The technical approach

Despite the changes in international organizations, the technical approach is still largely implemented in the sanitation sector in Lebanon. One major obstacle to the improvement is the infrastructure access-based approach of most projects, rather focusing on the construction of sanitation systems instead of shedding the light on the access to the service. They define their objectives in terms of increased treatment capacity of constructed wastewater plants, or in terms of number of people who will be theoretically connected to the sewage system. But the real number of people who will be using the sanitation system is not considered.

The infrastructure-based approach leads to an improper implementation of the projects. Plants are constructed but not connected to the sewage system that is itself in poor conditions, or unfinished, and not connected to all the households. As a result, not enough wastewater reaches the plant in order for it to work at least at its designed capacity. As a consequence, the operational kick-off of the plant can be delayed for years; meanwhile the technologies and buildings deteriorate and need to be rehabilitated to be functional again. On the contrary, there are also newly constructed sewage systems that are not connected to any treatment plants. The untreated wastewater is then discharged in the natural environment, with a very high concentration of pollutants. In both cases, users don't have access to a complete sanitation service.

The main reason for this situation is that the sanitation projects are technically implemented without having their finances secured for the next phases, as the construction of the sewage system or the secondary treatment plant. For example, the CDR constructed plants, letting the municipalities in charge of the sewage system construction from the houses to the plant. However, this part is the most expensive and the municipalities don't have enough resources. As a result, they took several years to complete the sewage system and the treatment plant deteriorated in the meantime.

In addition, the lack of attention on how the plants will be managed once they are constructed is another recurrent problem. According to the legal framework, the RWEs are supposed to take care of the exploitation, but they have no human nor financial means to exercise this role. This leads again to constructed plants not being used for several years, because there is no skills or funds to exploit them. Sometimes the CDR takes on the exploitation of the big plants for the first years. Then the same problems arise. Some municipalities also decide to take over the exploitation, mostly for small plants, although it is not entirely in their legal rights. Since they usually don't have the skills in intern, it take several years for them to learn how to correctly manage the plant.

Lack of coordination

In addition to these issues, the lack of concertation between stakeholders creates other problems. Projects stay in stand-by for years because one stakeholder doesn't agree with the terms of the project. Sometimes citizens or municipalities stop the implementation of the project fearing it might impact negatively their

well-being. One solution could be to involve them in all phases of the project, from planning to implementation as they are the most affected by it.

On another level, some plants have been constructed with the expectation that the municipality will take the hand on the management. But since the municipality hasn't been associated with the design, it is usually reluctant to manage the plant and very often doesn't have the funds or the skills. This echoes the problem of planning the management part before starting the construction.

Another problem happens when municipalities make the decision to independently implement a sanitation service and build a treatment plant to respond to real sanitation needs in their city. Being on the front row concerning this topic, they take advantage of the unclear legislation, and decide to design their own projects. However they don't have access to policies and strategies defined by the EWM as there are no communication channels between both. They don't have information about potential projects scheduled on national level for their territory. As a result, they might implement a project that overlaps with another one already planned by the CDR. They also miss-out potential economies of scale in projects, like mutualising the wastewater treatment with other municipalities on the same watershed, which might have benefitted them if they had been advised by the Ministry.

Towards a project leadership focused on institutional and social aspects

With a change of paradigm, as seen on the international level and as presented in the National Strategy of the EWM, the various challenges could be responded to efficiently, by implementing an approach based on service access. So as to manage these changes in Lebanon, the phases of sanitation (and especially management of the plant) would have to be thought ahead of the implementation of the project and the stakeholders would have to coordinate more with one-another.

Moreover, the example of Lebanon shows that a technical approach to sanitation projects is not sufficient to ensure their success. There is a need for a global view of projects, with service access as main objective. In addition to enabling concertation between stakeholders and taking into account the context in which the projects evolves as mentioned above, there are other solutions to ensure the success of the service access approach.

Participative approach

Projects have to focus on a participative approach, based on the demand and information of the users. Users should be involved in the decision making processes, based on the information and solutions provided by the project sponsors, and with the support of other stakeholders. Informing the users correctly should be mandatory in order for them to make informed and relevant decisions. In addition, projects should be implemented only if there is a demand emerging from the users. Usually, projects are implemented when there is an identified need (by NGO or sponsors), such as a difficulty to access potable water, environmental risks, etc. But this doesn't ensure that the beneficiaries actually want this improvement or are aware of its importance for their well-being.

The design of a project should be focused on what improvements the users want to see made, even when it is not the most technically efficient. This would ensure acceptance and interest from the users, and as a result, ensure the effectiveness and sustainability of projects. For example, against what is usually economically advised, the implementation of onsite sanitation is favoured in some parts of Lebanon because it is more in accordance with the people habits. That is why the demand analysis and facilities' utilization strategies are crucial during the design and planning stages of any sanitation project.

New type of project leadership

Projects will also need to focus more on institutional and social aspects of project leadership. This includes identifying the stakeholders and enabling concertation between them, so they can influence the project towards responding to their need. They will then better accept the results of the project and this will ensure its lasting. Knowing social habits and demands of the beneficiaries will ensure the relevance of the project and will lead to a better design and implementation. As a result, the project achievements will last longer.

Taking into account all these aspects implies that more time is needed to complete a project, however, it will ensure a better service provided to the beneficiaries.

Lesson learnt in Lebanon

Few sanitation projects are completely successful in Lebanon in terms of service access. However, some are developing a new approach, with the implementation of recommendations described above.

The Federation of Municipalities of the Higher Chouf worked towards implementing a complete sanitation system for its region, because they were not part of the CDR plans. Through various funding, they were able to coordinate the construction of the wastewater plants and the sewage system. Then the federation took over the management of the plant, before handing it to the RWE of Beirut Mount-Lebanon. With the acceptance of the users, the water bill was raised in order to increase the financial sustainability of the project. This project was a success thanks to the inter-municipal work of the federation, the concertation between the local and national stakeholders and the drainage basin approach on a multiple-federations scale.

In Bcharré, a major area for water resourcefulness, the CDR requested from the French Development Agency to implement a pilot project of reed-based filters for one neighbourhood of the city. Concertation could take place between the stakeholders and with the population of the administrative Caza. While property problems were faced, they were solved thanks to the collaboration of stakeholders and the construction of the sanitation system could be finished. The management of the station is handled by the constructor for the first months. It will then be handed to the federation of municipalities, with an agreement signed between them and the RWE of North Lebanon.

Even though these two projects are perfectible, they show the importance of coordination and collaboration between stakeholders. More are the donors and the local institutions that are willing to pragmatically rethink about their approach to sanitation development, and are in favour of jointly organized actions.

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Note/s

¹ A programme guided by a human rights-based approach takes a holistic view of its environment, considering the family, the community, civil society, local and national authorities. It considers the social, political and legal framework that determines the relationship between those institutions, and the resulting claims, duties and accountabilities.

Contact details

Marine Ricau is an engineer specialised in sanitation and waste management, working in Lebanon for the consulting firm Hydroconseil

Marine Ricau
Beyrouth, Lebanon
Tel: +961 76 34 16 19
Email: ricau@hydroconseil.com
www: www.hydroconseil.com
