

PEOPLE-CENTRED APPROACHES TO WATER AND ENVIRONMENTAL SANITATION

Implementing a decentralized sanitation system for the underserved urban community of Thongkhankham Nea Village, Lao PDR.

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Thongkhankham Nea village, is the largest slum community in Vientiane capital city. Although it is located in the core area of the city it is still an underserved community in terms of sanitary infrastructure. The probability of serving the village by a centralized sanitation system in near future is low. Hence a study was conducted to explore the prospects of implementing a decentralized system. The research results reveal that a decentralized sanitation system will satisfy the current needs and meet the affordability level of inhabitants. Therefore, a decentralized system is seen as a viable alternative.

Introduction

Rapid urban expansion and population growth are main reasons for the persistent gaps in demand and supply of sanitary infrastructure in the cities of developing countries. In some of these cities, adequately planned centralized sanitation systems are very rare to see. In the capital city of Lao PDR, the central sanitation system is of very rudimentary nature and that serves only a very small portion of the city. As a result even some settlements in the urban core area are under-served. Many inhabitants are compelled to make their own arrangements in the absence of a centralized system and this leads to severe urban environmental problems. Since there are no projects in the pipeline to rectify this situation, a need exists to implement alternative strategies at least as short/medium term solutions. This study attempts to explore the prospects of implementing a decentralized sanitation system in a selected urban community as a project to demonstrate financially viable and socially acceptable alternative to the sanitation needs of Vientiane. If proven viable, a demonstration project is planned to implement under the South-East Asia Urban Environmental Management Applications Project (2003-2008) of Asian Institute of Technology, Bangkok.

Rationale

Centralized systems are the most appropriate solutions for sanitation needs in large urban areas though they require colossal investments. The typical alternatives to centralized systems are individually arranged on-site systems. They vary from casual discharge to the immediate surrounding to disposal to properly built septic tanks constructed at the cost of the owner/user. Community level decentralized systems are not so commonly found due to difficulties in organizing communities to link to such systems on participatory basis. However, it can be argued that decentralized systems implemented for clusters of houses are better solu-



Figure 1. Stagnant water pools around houses are typical health hazards in Vientiane

tions for cities facing the problems of land and finance. If the community issues can be resolved and suitable plots of land are available, it is argued that decentralized sanitation systems can be successfully implemented through community participation.

Study Area

The total number of underserved settlement in the Vientiane urban area is not so large, but it seems to increase year by year. The percentage of population living in slum areas is 20%. Therefore, the sanitation problems of Vientiane are less compared to the problems of mega-cities such as Bangkok and Jakarta. Hence a very favorable situation prevails in Vientiane for the implementation of a decentralized system. The population is also very clearly organized as communities both in social and spatial terms. This is also a favorable condition to implement a decentralized sanitation system.

Thongkhankham Nea village is the largest slum community in Vientiane. It is located in the central core area of the city (Chantabuly district) and it is inhabited by 1574 people (443



Figure 2. View of the Thongkhankham Nea village in Vientiane City

households). It has a total area of 13.6 Ha. It is bounded by 3 major roads and it depicts typical characteristics of underserved communities in the city. Therefore, this community has very high visibility for the purpose of a demonstration project. Presently 67% of the households in the village use pit latrines, which even do not have soak-away systems. Many pit latrines leak and pollute land surface. Some parts of the village are not accessible by the waste collection truck. As a result piles of garbage are seen inside the village and particularly clogging drains. About 60% of the households are poor and the poor environmental condition of the village makes them even poorer. Therefore, this village was selected for the study to explore the prospects of implementing a decentralized sanitation system.

The objectives of the study were:

1. Assess the present environmental sanitation system used by local residents
2. Explore the prospects of implementing a decentralized

sanitation system to improve the environmental condition of the village in terms of social acceptability and economic viability.

3. To recommend guidelines for a community based and participatory approach to improve environmental sanitation.

Methodology

The study was based on a questionnaire survey, stakeholder interviewa, and observations. The survey involved a sample of 110 households randomly drawn from 443 households. The sample covered all 24 units (clusters) of the village. The heads of sampled households were individually interviewed during a 4-week period in February-March 2004. The survey questions directed at household heads were centered on the current situation of sanitation in the village in general and house in particular, preference for a decentralized sanitation system, willingness to pay a user charge, and ability to participate in the construction and maintenance of a decentralized system.

Stakeholder interviews were based on a simple structured questionnaire. Interviews were conducted with the chief of village, womens union, youth union, social welfare society, and principal of the primary school of the village. Unstructured discussions were made with the deputy chief of Chanthabuly district, head of the district office of Communication, Transport, Post, and Construction, Director of the Department of Communication, Transport, Post, and Construction of Vientiane Municipality, Deputy director of the Vientiane Urban Development and Administration Authority, 7 villages, Deputy director of the Vientiane Urban Cleansing Service and Project Manager of the Vientiane Urban Environment Improvement Project.

Observations were made during both day-time and night-time on sanitation related behavior of villagers. Especial observation visits were made during the time of rain to record drainage problems and flood situation.



Figure 3. Lack of drainage system



Figure 4. Condition of a typical latrine

Findings

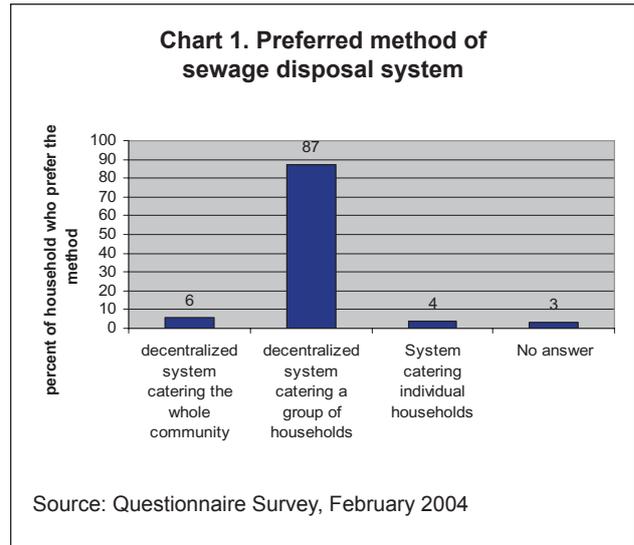
The analysis of data gathered from the household survey reveals that the dwellers are highly unsatisfied with the overall situation of sanitation in the village. Except water supply, all other forms of sanitary services do not seem to meet the expectations of the dwellers. Even water supply service to the village, which has been improved at recent times, does not meet the expectations of all dwellers.

As Table 1 shows, the highest priority for villagers is a sewage disposal system. Presently 67% of the households use a hole in the ground to dispose sewage and only 37% of the households have a sanitary latrine with a septic tank connected. The reasons for having poor sanitary arrangements are two fold. Firstly, most of the people have very low awareness on sanitation and hygiene standards required in residential premises. This is depicted in the way they handle food and do cooking often next to an unhygienic latrine. Secondly, even if they have awareness, they find it difficult to spend money to construct a hygienic toilet and an on-site system of sewage disposal. However, when the options of decentralized disposal systems were explained to them and proposed as alternative arrangements to a centralized system and on-site solutions, they were highly receptive to the proposal. There was an overwhelming preference for a system catering a group of houses (see Chart 1). More over, nearly 90% of the respondents expressed their willingness to spend their own money to construct a hygienic toilet if a group disposal system is provided to them. Only 16% of the household heads expressed willingness to share the cost of the proposed group system and most others believe that it is the municipality’s responsibility to provide an acceptable system to the village.

Number	Sanitation system	Rank
1	Sewage disposal	1
2	Sullage disposal	2
3	Solid waste disposal	3
4	Storm water drainage	4
5	Sludge disposal	5
6	Pest control	6
	Water supply	7

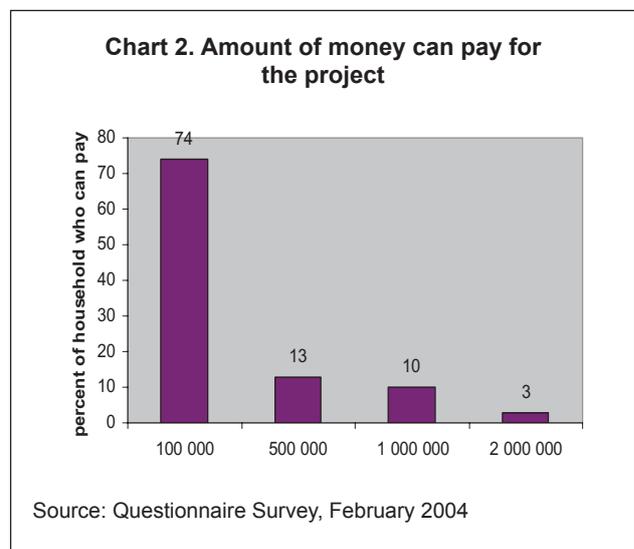
Source: Questionnaire Survey, February 2004

The discussion with the village organizations revealed that they could fully participate in improving the overall sanitary condition, if the village is selected to implement a demonstration project. Willingness to pay a monthly user fee for essential services such as water supply, garbage disposal and wastewater disposal were as high as 97%. However, the amount that they are willing to pay does not exceeded 2.000.000 kips in most of the cases. Although most respondents were not willing to contribute a significant amount to the construction cost of physical works, many of



them were willing to provide labour for construction and share the responsibility of maintenance. However, nearly 75% of the respondents showed willingness to contribute 100,000 kips to the cost of construction if a group sanitation system is implemented (see Chart 2). This was an indication that a participatory method of sanitation improvement on the basis of cost-sharing principle is a viable idea in this village. Moreover, it was an indication that a community-based method can make the people responsible for improving and maintaining their living environment and thereby change their environmental and improve hygienic practices.

Similar analysis on the viability of a decentralized system for wastewater (gray water) disposal proved that it can be implemented on participatory and cost-sharing principles. However, with regard to solid-waste disposal and storm water drainage the analysis revealed that the villagers prefer direct responsibility of the local authority.



Conclusions

Decentralized sanitation systems are suitable for developing countries, because they involve technology that is manageable by users themselves. A country like Lao PDR will find it difficult to invest in colossal sums of funds to implement centralized systems that are more suitable for developed countries.

On the other hand, the recent administrative reforms in Lao PDR consider the central government as the policy maker, provincial authority as the planning agency, and district authority as the implementing agency and communities as partners in development. This shift in paradigm requires communities to become active participants instead of passive recipients. The survey revealed that it is a practical idea to make them partners in development, but the capacity of the communities may inhibit the extent of participation.

Since the urban development and environment policy of Lao PDR favor decentralized administration and decentralized infrastructure solutions and the responsibilities are increasingly delegated from central government authorities to local governments and community organizations, the idea of constructing decentralized sanitation systems for underserved communities are not only viable as demonstrated in the study but also preferred by the authorities. Therefore, implementing decentralized sanitation systems for underserved communities through participatory process has a high potential as an acceptable solution for poor urban communities. There is also a potential to recover part of the operation and maintenance cost through user charges though the potential of cost sharing in construction is slim. This infers that the local government should implement an

enabling policy for environmental improvement and continue with their obligations in investing on public utilities and amenities until such time that the affordability of people is increased. Being a city with a large number of poor people the situation is not ripe enough to venture into public-private partnerships as practiced in some neighboring countries. It is also of paramount importance that the local government takes serious efforts to improve the awareness among people on environmental sanitation in general and hygiene in particular. The idea of people-centred approach to sanitation improvement in under-served communities is appropriate and viable if the awareness among people is raised through the involvement of the local authorities.

References

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