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Possibility of Community Based Solid Waste Management Project in Chuchepati, Kathmandu

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Abstract—*The amount of solid waste is rapidly increasing due to urbanization. The situation is worse in least developed countries where most of the cities have unplanned urbanization. Due to rapid urbanization in Kathmandu Valley, Nepal Government is also having difficulty to cope with the increasing demand for proper solid waste management. It is difficult for Municipality alone to handle the solid waste management without the proper collaboration of respective community. This paper examines the challenges of implementing the community based solid waste management project in Chuchepati area. It is prepared after several rounds of discussion, interviews, observations and field visits of the Chuchepati area of Kathmandu valley. By exploring the experiences of community members and related scholars, we aim to investigate the possibility of transforming tradition waste management practices into community based solid waste management with the full support of local people.*

1. INTRODUCTION

The population of Nepal is growing at an annual rate of 1.35 percent, according to the census conducted from June 17 to June 27 in 2014. Nepal's population has risen to 26,494,505 over the past 10 years. Census has also shown Kathmandu with the highest number of population (1,744,240) with an increase by 61.23 percent from 2001. Nepal has one of the highest urban growth rates in South of Asia (Pokhrel & Viraraghavan, 2005). The haphazard urbanization process is important to manage as it could bring different environmental, social or economic problems. There must be a proper balance between the production and consumption. Due to unplanned urbanization, it's even difficult to fulfill the basic needs (Basyal and Khanal, 2001).

With rapid population growth, the amounts of solid wastes are also increasing. Management of the solid wastes generated is important. Due to rapid urbanization in Kathmandu Valley, Government is unable to cope with the increasing demand for solid waste management which resulted garbage and sanitation situation in a chaotic state (Basyal & Khanal, 2001). Wastes are seen thrown nearby the road side or dumped along the river banks.

Waste management is a complex task which depends on organization and different actors responsible for it like the public and private sectors (Schübeler & Countries, 1996). Municipality alone cannot handle the issues of SWM. Tight municipal budgets and scarce resources have made municipal SWM an environmental, financial, and social burden to the municipalities (ADB, 2013). In this regard, several organizations shake hand with municipality in managing the solid wastes in the urban areas. According to the Solid Waste Management Technical Support Center (SWMTSC), solid waste management includes monitoring, collection, transport, processing, recycling and disposal of wastes. Hence, municipality should strictly keep eye on the handed organization as they are following the set criteria or not. The management of wastes starts from its sources till its proper disposal. The waste hierarchy is important.

Private sector participation (PSP) in solid waste management can improve efficiency, reduce the need for municipal investment, and share risks associated with introducing a new technology or system (Water Aid, 2008). Therefore, it is necessary that proper sanitation behaviour is followed in this all process.

2. WASTE MANAGEMENT IN NEPAL

A research conducted by Asian Development Bank (2011) in Nepal has shown that the highest waste category was organic waste with 66%, followed by plastics with 12%, and paper and paper products with 9%. This indicates great potential for producing compost from organic waste, and reusing and recycling other materials, with only about 10% going to final disposal if resource recovery is maximized.

According to the Local Self-Governance Act, 1999, municipalities are responsible for managing solid waste. But the municipalities do not have the proper and skilled resources to manage the solid waste. Budget is allocated for this purpose but it is not used in the efficient way (Water Aid, 2008). In 2005, Sisdol in Okharpauwa was established as the land fill site. The agitation in the area is common. Due to poor management, huge proportion of wastes has to be transported to the landfill site. Solid waste management in Kathmandu serves as an example of failure in developing countries to effectively manage environmental hazards (Dangib, 2009).

While the enactment of the new Solid Waste Management Act in 2011 was a major step toward improving SWM practices in Nepal, it has not been effectively translated into actions and results on the ground (ADB, 2013). It is often seen that the waste collection and disposal are only linked with waste management in Nepal. The whole process of segregation, collection, transportation, processing and disposal are not guided in proper way. Though the waste collecting organization helps in collecting the wastes from households, the problem of waste management in Kathmandu hasn't been solved yet. In this scenario, ADB has suggested a concept in which the community people are engaged in SWM and gains income from it as well.

According to Nyachhyon (2006), waste management includes the generation, collection, processing, transport, minimization of the production, the reconceptualizing of waste as an economic resource, mobilizing the communities in the process, and protection of human health and environment.

3. COMMUNITY PARTICIPATION

According to Anschutz (1996), community participation is taken as a crucial aspect of solid waste management. Local bodies alone cannot meet the challenge of keeping towns clean and livable. Community participation needs to be ensured through information, education, and communication campaigns to enhance citizens' awareness of 3R and better SWM (ADB, 2013).

Community Management is the management of a common resource or issue by a community through the collective action of volunteers and stakeholders (Wade, 1987). In community management, the community people use the local resources available. Community-based collection schemes often collapse when a motivated member of the management or a few competent individuals working on a voluntary basis withdraw from the scheme (Pfammatter & Schertenleib, 1996). Since, the people are busy within their own work, it is often seen that they cannot give time for managing things at community level. But a concept has risen as linking the community involvement with the income to see the result. In this regard, Asian Development Bank (ADB) has forwarded the concept of Community Based Solid Waste Management Projects as the activities carried out by the members of communities to clean up their neighborhood and/or to earn an income from solid waste. In this way, the communities are also clean and the community members also earn income from the wastes.

4. SCENARIO OF CHUCHEPATI

Chuchepati lies about 6 km from central Kathmandu. The respective ward adjoins Jorpati VDC in the east, Ward No. 7 in the west, Kapan VDC in the north and Ward No. 7 and the Bagmati River in the south (KMC, 2001). We got opportunity to talk with various people engaged in solid waste management in Chuchepati area of Kathmandu valley. For interview section, following were our key informants:

- A staff from Didi Bahini Mahila Samuha
- A staff from Dikshya Nepal
- A staff from Pariwartan Nepal
- A staff from ward no. 6
- SWM Experts

Didi Bahini Mahila Samuha is a local committee of women of Chuchepati. Didi Bahini Mahila Samuha is actively participating in cleanup activities in the Chuchepati area. The organization was formed around 7 years ago and currently consists of 43 female members. It has done dozens of cleanup program in coordination with Pariwartan Nepal, Ward office and Clean up Nepal.

Pariwartan Nepal is a private company working in solid waste management in Chuchepati area. It has extended its working areas in Thamel and Singha Durbar as well. Pariwartan Nepal is also currently engaged in Rudramati Cleanup. Besides Pariwartan Nepal, Dikshya Nepal also collects wastes from around 100 houses in Chuchepati area.

5. CONCLUSION

The solid waste management practices in the Chuchepati areas were praiseworthy (beside segregation) however it was not linked with income generation. The community members had to depend totally on the waste collectors.

The trainings and awareness campaigns are needed in the Chuchepati area. The concerned organization should disseminate the information as how community members could be economically benefitted by participating in community based solid waste management practices. Linking income with the solid waste management has shown great possibility of sustainability of project in the Chuchepati area.

There was good team work and coordination between different organizing working in the area. The first step in solid waste management is source segregation. Due to lack of simple task of segregating wastes at the house, the waste collectors had to do the same work at their collection centers which was total waste of time.

As the ward officials said, there is lack of action plan and required resources which is creating a huge gap between the community and government officials. Community based solid waste management project study came out with three key findings as:

- Protects environment
- Strengthen the economic condition of the community members
- Sustainability of the project

A community collection center can make work easier in Chuchepati area. The responsibility of waste collection center

could be handed to local club (in this case may be Didi Bahini Mahila Samuha). Community members should segregate non degradable waste and bring to the collection center in alternate days. The organic waste can be used to make compost via bin method. Then, scrap vendor will buy all those non degradable wastes. In this way, community member would earn money. Certain percentage could be allocated to local clubs for managing those all. The remained wastes (medical and others) need to be transported to disposal site in municipality vehicle.

A good example could be Dhankuta Municipality of Eastern Nepal. The municipality is making a good income for the past three years by selling the waste materials collected at the Dhankuta bazaar area. For this, the municipality collects papers, plastics and aluminum products separately and sells it up to Rs 12 per kg. The municipality has become successful to be in the top 10 position among the municipalities across the country in Environmental Impact Assessment due to waste management (Republica, 2014). Same approach should be introduced in Chuchepati community as well.

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