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Foreign aid in waste management: A case Kathmandu, Nepal

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ABSTRACT

Four decades of reorganization of waste management in Kathmandu, Nepal funded by foreign aid failed to provide adequate services and led to the return of riverbank waste disposal by 1994. To assess the results of foreign aid in waste management in Kathmandu from 1970 to 2010, the researchers utilized qualitative and field methods and examined three major international projects sponsored by the governments of Germany, India, and Japan. Results suggest that German aid was too technical, undermining municipal capacity and burdening the city with a second waste disposal institution while failing to sustain its own infrastructure. The Indian project lacked focus and follow up programs and encumbered a poor country with outdated equipment that did not meet the local needs. Japanese aid depended on wrong assumptions, stressing costly landfilling that employed heavy machinery and upgraded equipment inappropriate for local conditions. The study recommends that Nepal institute bottom-up and participatory style of waste management that identifies where the resources will come from, who will manage them, and how they will be sustained.

1. Introduction

In Nepal, only three municipalities have some sort of formal management of municipal solid waste (MSW). One of the three, Kathmandu has a semi-formal solid waste management (SWM). Kathmandu has 35 wards, each of which is responsible for cleaning and organizing the collection and disposal of wastes, done by 1047 *kuchikars* (sweepers). Traditionally, the *Safai Adda* (sanitary office) established in 1919 assigned urban sanitation duties to *kuchikars*, who mostly come from *Podey, Chyame,* and *Halahulu* castes. This practice institutionalized street sweeping, collecting garbage from quadrangles and palaces, and dumping the wastes into rivers or open places. Though the *Safai Adda* was renamed Municipality Office in 1931, the *kuchikars* and public continued to follow the historical cleaning system. In this setting citizens were also directly involved in maintaining cleanliness in their neighborhood and quadrangles.

In 1950, Kathmandu Valley established three municipalities as its core city centers: Kathmandu, Lalitpur, and Bhaktapur (Thapa, 1998), and with this change, SWM responsibility began to transfer to these local authorities. Nevertheless, even as the local government assumed public solid waste disposal in the city, the deposition of solid wastes into the Bagmati and the Bishnumati rivers via municipal *kuchikars* continued. From that point, the public shunned participation in SWM.

In 1970, the Nepalese government commissioned a World Health Organization (WHO) expert to study SWM in Kathmandu (Flintoff, 1971) that was followed by German aid via SWM Project from 1978 to 1993. The SWM Project developed a national organization, the Solid Waste Management and Resource Mobilization Center (SWMRMC),[1] to carry out SWM in Kathmandu Valley municipalities, built a permanent facility-the Gokarna Landfill Site (GLS) situated 16 km northeast of Kathmandu, and constructed a compost plant in Teku located at the southern edge of Kathmandu city near the bank of the Bagmati River. See Fig. 1. The compost plant with a capacity of 15 metric tons per day of compost production from food and yard wastes was closed prematurely in 1990. The GLS that had been projected to accommodate comingled MSW from Kathmandu Valley municipalities for 200 years was shut down in 1993. These closures thus exacerbated the SWM problem in Kathmandu in early 1994.

The government then designated dump sites near the banks of

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[1] SWMRMC is now called Solid Waste Management Technical Support Center under the Ministry of Urban Development.

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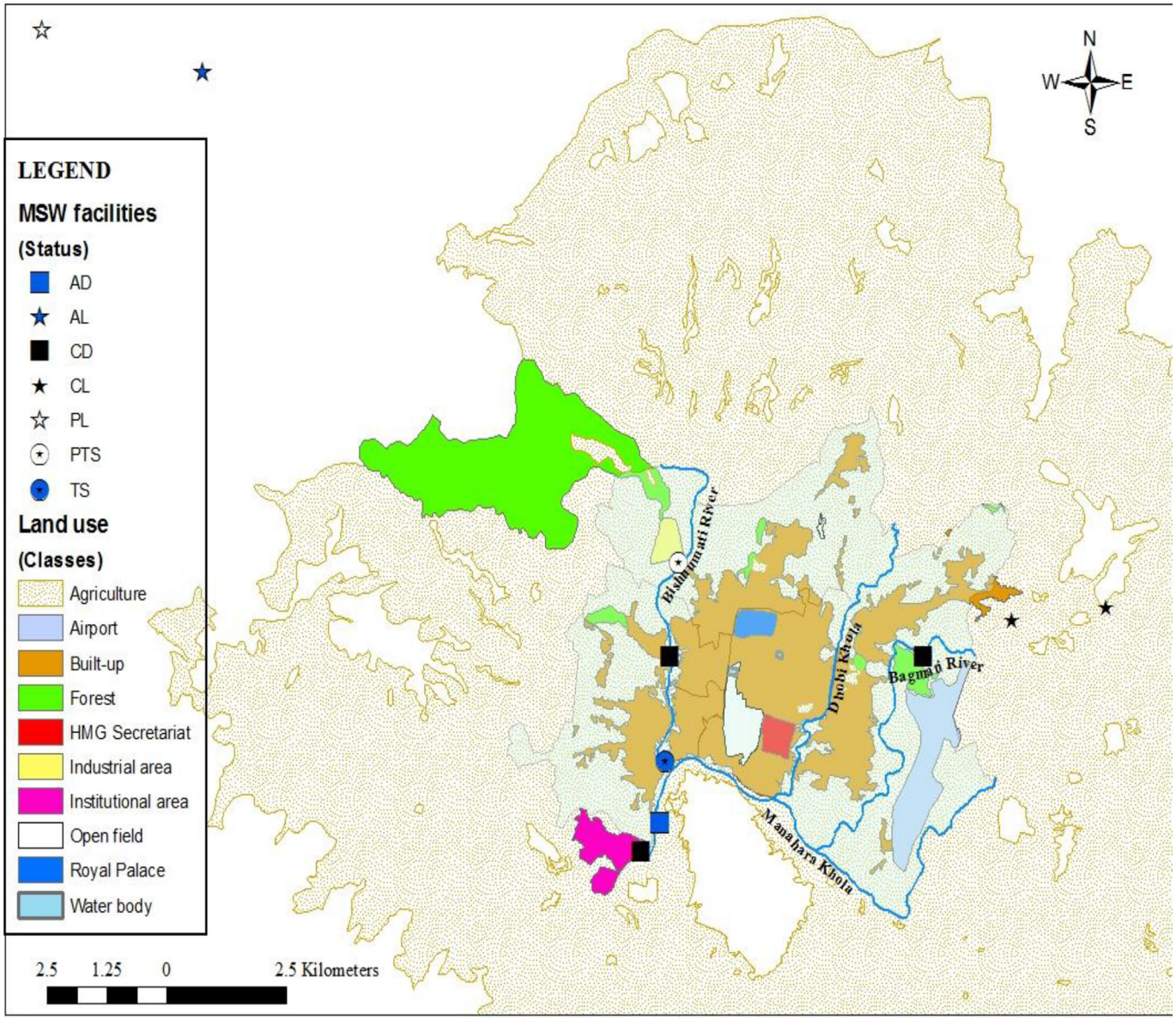

Fig. 1. Location of MSW facilities for Kathmandu city (Dangi, 2009). AD = Active dump, AL = Active landfill, CD = Closed dump, CL = Closed landfill, PL = Proposed landfill, PTS = Proposed transfer station, TS = Transfer station.

the Bagmati and Bishnumati rivers that served as the only disposal facilities for over ten years. At the same time, India provided a large consignment of equipment and a handful of countries contributed some indirect aid in the 1990s. As these aid packages proved unhelpful, the government secured assistance from Japan to develop a permanent landfill, Banchare *Danda* (hill) Landfill Site (BLS), 28 km from Kathmandu in Okharpauwa village in Nuwakot district (Fig. 1). A nearby temporary landfill, Sisdol Landfill Site (SLS), began operation in June 2005. The development of this region as a lasting landfill is contingent upon the government's ability to complete local development work. More on local development work can be found in Dangi (2009).

Despite the temporary landfill's operation, the MSW problem appears chronic in Kathmandu. The method of management is technology driven, which disregards a cradle-to-grave approach in SWM and consistently pursues landfilling even though 71% of waste (household) is organic (Dangi, Pretz, Urynowicz, Gerow, & Reddy, 2011). This has driven the unit management cost above that of most developing countries, i.e. US$2.71/capita/annum or 1.01% of Gross National Product (Dangi, 2009).

To examine the outcomes of foreign aid in SWM in Nepal mostly between 1970 and 2010, the researchers utilized qualitative and field methods and studied three major international projects in SWM provided by the governments of Germany, India, and Japan. The paper is organized into five sections. This includes introduction, methods, foreign aid in SWM, conclusions, and recommendations.

2. Methods

The field study conducted from June to August 2007 investigated 336 Kathmandu city households from four strata that were defined and modified after a pilot study. The details of the methods used in the pilot study, conducted from December 14 to 31, 2005, can be found in Dangi, Urynowicz, Gerow, and Thapa (2008) and Dangi, Cohen, Urynowicz, and Poudyal (2009). Field study results dealing with waste generation and characterization and methods