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Advancing Local Green Practices Towards Establishing Sound Material Cycle Society in Asian Cities

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ABSTRACT: “Sound Material Cycle (SMC) Society” and “Material Flow” both largely remain an alien concept for most cities of Asia’s developing countries, which routinely struggle to manage increasing daily waste within their municipal limits. However, the huge populace fuelling the growth of these cities has its own frugal ways and modest means which have catapulted them to the top spot in the world’s Green Index (study conducted by the National Geographic), making them the most environmental-friendly denizens of Planet Earth. To arrest this diverse reality, this multi-country research reviews urban expansion and analysis of lifestyles to ascertain changing material flows in domestic sectors as well as prevailing reuse and recycle practices, which may be considered as a precursor to the idea of establishing a SMC Society. Further, field realities from the selected cities of India, Indonesia, Viet Nam as well as Japan are being captured to arrest miniscule and oft-ignored dimensions of cyclicity of the materials at the household, community and city levels. Descriptive, qualitative and technical analysis of selected key material sectors (such as construction, packaging, automobiles, consumer electronics, etc.) of these case-study cities is helping to establish that cities are ideal candidates for promoting SMS pathways.

KEYWORDS: *reduce, reuse, recycle, material cycle, green-practices, urban areas*

Project Objectives

This study aimed at supplementing ongoing Japanese efforts to establish SMC Society (including 3R and Material Flows) in Asia while highlighting three unique elements for success; [i] Urban systems (because urban areas contribute to over two-thirds of the region's GDP); [ii] Green local practices (because communities are "key to success of SMC Society"); and [iii] Partnerships (because local government, NGOs, communities and academia must work hand-in-hand with SMC experts). The specific objectives include: (a) Stimulate multidisciplinary, context-based and community-centred basic ingredients for advancing SMC-Society vision in selected countries of Asia; (b) Substantiate scientific SMC research by combining inputs from natural and social science practitioners to demonstrate that SMC can help urban regions to achieve waste reduction/resource efficiency, move towards low carbon society and reduce pollution; (c) Identify, analyse and document "modest, frugal and green living practices" of citizens, find the challenges to these practices and revitalise them by participatory mechanisms and integrate them with SMC approaches in selected case study cities of Asia; and (d) Promote interaction and interest of "local academia-government-NGOs-businesses-citizens" in SMC by organising consultation meetings, providing better scientific information, sharing perspectives from Japan and progress from other case study areas for knowledge sharing/mutual

learning, and thereby gradually influencing national and regional policies.

Work Undertaken and Results to Date

This study is progressing through collaboration with local universities in India, Indonesia and Viet Nam. It was decided that the study should focus on the methods of segregating and regulating waste disposal. Attempts were made to document the possible practices that help in reducing the generation of waste. It was discussed that contribution of formal as well as informal processes shall be documented. Towards this, seven material categories of waste are documented in four stages from six sources. Overall material cycle will be analysed in these key-material sectors in selected case-study cities; textile, metal, glass, plastic, paper, biodegradable waste (including food, kitchen and garden waste) and e-waste. The documentation is carried out through these stages: generation of waste, reuse of waste, recycling of waste and disposing of waste. The study will document the generation of waste from six different sources including (1) household; (2) commercial and office establishments; (3) industrial waste; (4) hospital waste; (5) construction waste; and (6) waste from public/semi-public areas. Country-specific progress is as follows:

India: A pilot survey was carried out on households representing five income groups of Bhopal city. It has been observed that textile, plastic, metal, glass, paper and kitchen waste are predominantly generated



Figure 1. Focus group discussion on local green practices.



and majority of the waste segregated at household level. Door-to-door waste is regularly collected by Bhopal Municipal Corporation at the household level. Some of the practices used are very common in most of the Indian households while some practices are very rarely used. In addition, a focus group discussion was also held to further engage opinions from various stakeholders. Their views were taken into account to refine some of the pilot study survey questions.

Viet Nam: This study based in Hue city used a mixed data gathering methods in order to collect a robust dataset, including (a) secondary data collection; (b) key informant interviews (KIIs); (c) focus group discussions (FDGs) and meetings; and (d) a consultation workshop. In addition, a documentary film about locally-based green practices in the study area was made. Results from interviewed households show that, on average, each household generates about 3 kg of waste per day. Review of locally-based green practices showed that the city already has existing models to help reduce

the generation of waste. For example, the existence of informal sectors such as waste pickers, junk buyers and waste collectors involved in collection and recycling of waste shows that their work significantly reduces in amount of waste; it reduces a large amount of landfill for the city. In addition, it eliminates much of the costs associated with the transport, treatment and burying of waste.

Indonesia: Survey in Yogyakarta, a case study city, reveals that most volume of waste material is organic waste that is mainly produced by the construction and agriculture sectors. Since 2008, the local government has been trying to reduce the waste transported for final disposal. The new method involves the 3R practices. The “new paradigm” is based on the fact that their facility cannot transport all waste in Yogyakarta. In 2009, the government supported 3R practices by giving 150 composters in the river plain communities and 90 composters in all 45 sub-districts.

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PROJECT TITLE

Advancing Locally-based Green Practices to Realise Establishment of Sound Material Cycle Society in Asian Cities

COUNTRIES INVOLVED

India, Indonesia, Japan, Viet Nam

PROJECT DURATION

3 years

APN FUNDING

US\$ 120,000

PROJECT LEADER

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