"Our Environment is our Health"

Policy Brief

15 July 2010

From Waste to Worth

IN SUMMARY

- **High population growth and urbanization coupled with rapid economic growth greatly accelerates consumption rates in Asian developing country cities resulting to an increase in solid waste generation as well as to changes in waste composition.**
- **Urban authorities in Asia spend an estimated 50-70% of their revenues on waste management.**
- **The contribution of the informal sector toward recycling is now highly noticeable but their occupational health and safety are still largely neglected.**
- **The Waste TWG was created with the three-fold aim of ensuring environmentally sound solid and hazardous waste management practices, prioritizing municipal and medical waste management issues and providing useful information.**
- **While there have been observed good practices that use the 3R principles, many developing member countries remain overwhelmed with issues such as the lack of coordination, resources and capacity among many others**
- **Continued partnership, awareness-raising and capacity building for municipal and medical waste management need to be developed and effectively enforced.**

Overview

Solid waste management is one of the major environmental burdens, particularly in megacities of many developed and developing Asian countries. High population growth and urbanization coupled with rapid economic growth greatly accelerates consumption rates in Asian developing cities[1]. These consumption patterns have contributed to an increase in municipal solid waste generation and to changes in waste composition. This policy brief presents the status-quo and issues of Municipal Waste in 14 South East and East Asian member countries. It also provides background information on the medical waste status in these countries.

Urban authorities in Asia now spend an estimated 50-70% of their revenues on waste management[2]. Municipal solid waste generation and composition differs between developed and developing Asian countries. The quantity of waste generated in cities of advanced Asian countries is in excess of 1 kg/person/day compared to developing countries in Asia with roughly half that

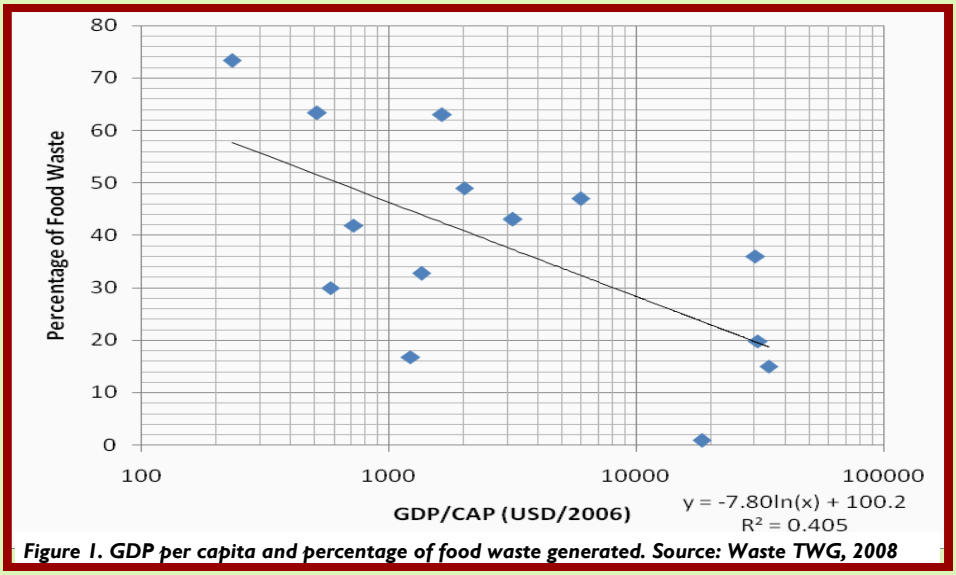

Figure 1. GDP per capita and percentage of food waste generated. Source: Waste TWG, 2008

amount (i.e., about 0.5 kg/person/day). On the other hand, the composition of municipal waste in advanced countries is highly inorganic and non-recyclable while cities of developing Asian countries generally have organic and recyclable municipal wastes. Despite the high potential for 3Rs of wastes in developing country cities, they are beset with problems that include the use of open dumps that create and spread health problems, contamination of underground water resources, decreasing capacity of sanitary landfills along with difficulties in establishing new dumpsites and rising costs of wastes disposal. Similarly, data on healthcare waste point to a lack of initiatives and actions toward its segregation – most medical/hospital wastes are disposed together with municipal wastes while others are openly burnt. Only a few local initiatives have been undertaken by non-government organizations ***continued in page 2...Overview***

Overview

while waste pickers are seen to play a key role in segregating, recycling and reusing these waste types equally exposing themselves to potential hazards.

While collection, transportation, treatment and disposal of municipal wastes are normally administered by the local government in most SEA and East Asian countries, the private sector is playing an increasing role in the construction and operation of municipal waste disposal facilities under lease and concession contracts. Informal sector contribution on recycling activities in many municipalities of developing member countries is also increasingly evident. However, there has been little effort towards addressing the associated health risks faced by these people. Most waste pickers, for instance, remain unprotected and therefore vulnerable while sorting wastes at open dumpsites.

In recognizance of the abovementioned issues, the Regional Ministerial Forum on Environment and Health selected solid and hazardous waste as one of its priority areas. Member countries agreed to further promote the 3R – reduce, reuse and recycle – principles through regional cooperation under the 3R Initiative. The Asia 3R (Reduce, Reuse and Recycle) Conference held on October 30 - November 1, 2006 in Tokyo, Japan discussed four topics including Partnership and International Cooperation for the promotion of the 3Rs, Medical Waste management, Municipal Organic Waste Management and E-Waste Management. On 11-12 November 2009, the Regional 3R Forum was inaugurated, and the Tokyo 3R Statement was agreed by Asian countries. [The Tokyo 3R Statement is a statement that facilitates the implementation of 3R-related activities in Asia including the establishment of the Regional 3R Forum in Asia][3].

The promotion of 3R principles and its practices in the region is progressing very well. A survey conducted among the member countries showed that developing member countries like Cambodia, Lao PDR, Thailand and the Philippines have good practices in terms of composting municipal wastes. On the other hand, municipal waste separation at source is successfully practiced among the developed member countries of South Korea, Japan and Singapore. These same countries have effectively enforced their established policies, laws and regulations on solid waste management due, in part, to enhanced capacity and availability of resources.

Thematic Working Group on Solid and Hazardous Waste

The Thematic Working Group on Solid and Hazardous Waste (Waste TWG) was initially formulated with 13 member countries (list of members presented in page 4) as well as 9 partner organizations and experts from regional and international organizations. The 14th member – Republic of Korea – joined in 2008.

The workplan of the TWG on Solid and Hazardous Waste (Waste TWG) has three objectives: (1) ensuring environmentally sound management of solid and hazardous waste; (2) prioritizing issues by analyzing the status-quo of municipal and medical waste management of member countries; and (3) providing useful information. The Department of Waste Management and Recycling, Ministry of the Environment of Japan is the Chair of Waste TWG. Waste TWG developed a work plan, which was approved by member countries during the 1st Ministerial Regional Forum. Then membership to the TWG was finalized.

The first Waste TWG meeting was held on 28-29 February, 2008 in Singapore where it was agreed that member countries create their own inter-ministry/agency steering committees and identify their national focal points. On 1-3 December 2008, the second Waste TWG meeting was held in Siem Reap, Cambodia, back to back with the Second Workshop of 3RKH (Reduce, Reuse, Recycle Knowledge Hub). The meeting i) reviewed the reports on the status-quo and issues of municipal and medical waste management; ii) shared good practices and lessons learnt on municipal and medical waste management; and iii) discussed and identified appropriate recommendations.

Based on the above-mentioned developments, The Waste TWG is also supporting two selected TWG member countries in the implementation of demonstration projects on Municipal Waste.

An alarming rate of solid waste generation trends can be seen parallel to urbanization, industrialization and economic development.

The First Meeting of the Thematic Working Group on Solid and Hazardous Waste, 28-29 February 2008 in Singapore. *Source: Guilberto Borongan*

The Results

In its attempts to address solid waste management at a regional scale, the Waste TWG first established baseline information and data on solid waste management in member countries.

Municipal waste management: A survey questionnaire, which is prepared by AIT-UNEP RRC.AP, on the status quo and issues related to municipal waste management in the 14 member countries in Southeast and East Asia was developed and circulated for member countries to fill up. The survey initially asked member countries to provide its own definition of municipal waste. It then identified the figures in terms of waste generation and composition. Then it examined the current management practices, policies and regulations and aspects of municipal waste management including: 1) economic instruments, 2) technology, 3) partnerships, 4) informative measures, 5) informal sector, 6) stakeholder participation and 7) capacity-building. Information collected through the municipal waste questionnaire, which was completed with the participation of national agencies and institutions was the main basis for the report on the status-quo and issues on municipal waste together with data gathered from reports and research studies.

Medical waste management: Similarly, AIT prepared a questionnaire on medical wastes, and circulated it to member countries. Answers were gathered and a report on the status-quo, issues and recommendations on medical, toxic and hazardous waste management in member countries was also developed.

Second Meeting on Thematic Working Group on Solid and Hazardous Waste December 2-3, 2008, Siem Reap, Cambodia

The Waste TWG uses at least two sites to disseminate information - the regional forum website and the 3R Knowledge Hub (3RKH). Both are updated regularly with reports and proceedings of meetings and other activities.

The Waste TWG in coordination with respective partners in Cambodia and Philippines implemented the short-term demonstration project on capacity building and awareness raising on 3Rs and waste management. Cambodia's pilot project raised awareness of major problems related to unsound management of scrap-cloths in introducing potential mechanisms to sustain environmental and economic values. The Philippine pilot project promotes 3R's in SWM in the country by recognizing the importance, and building the capacity of, informal waste sector i.e. Waste Pickers.

Conclusions

- Increasing Population and urbanization growth, rapid economic growths, as well as changing consumption rates and patterns, have contributed to the increase in municipal solid waste generation and to changes in waste composition and consumption in Asian developing cities.
- There are marked differences between developed member countries and developing member countries in terms of waste generation and composition as well as in good management practices.
- The management of municipal wastes is decentralized in most member countries with collection, transportation, treatment and disposal normally administered by the local government.
- The private and informal sector is playing an increasing role in many elements of municipal waste management including 3Rs but their full potential and/or needs have not been fully recognized.
- Municipal waste management problems currently faced by most member countries include illegal dumping, limited knowledge on technological solutions and processes, limited resources (such as recycling facilities, landfill plan and area), lack of coordination among national and local authorities and other sectors in the formulation of policy measures, too little revenue from waste collection fees and lack of knowledge and experience of waste management workers.
- There is also a lack of initiatives and actions toward healthcare waste segregation in developing country cities – most medical/ hospital wastes are disposed together with municipal wastes while others are openly burnt.
- The Waste TWG was created with three objectives; ensuring environmentally sound solid and hazardous waste management practices, prioritizing municipal and medical waste management issues and providing useful information.
- Member countries have notable waste management practices that employ the 3R principles, such as waste separation at source and composting but more needs to be done in order to improve municipal and medical waste management.

The effect of neglecting the environment is said to cost an average 5% of the GDP[4].

Recommendations

- The Waste TWG and member counties need to recognize the relevance of establishing data and information management systems for municipal waste management at various levels – local and national – in order to justify the action points and activities made at the regional level.
- There is a need to develop and implement awareness-raising and capacity building programs for municipal waste management. These include information and communication activities and trainings.
- Recognizing the emerging roles of various stakeholders (e.g., private and informal sector), dialogues, partnerships and cooperation need to be established and enhanced for effective implementation of the 3Rs.
- In order to address some of the major issues currently overwhelming developing Asian country cities, there must be continuous sharing of good practice information and knowledge. Access to technology, resources and funding is also necessary.
- It is essential to consider the composition and source of municipal as well as medical wastes so that appropriate management strategies can be planned accordingly.
- Governments need to enhance their efforts toward addressing solid waste management problems. They must recognize and develop integrated solutions adapted to the circumstances and targeted to the issues that beset them in order to tackle the problems more appropriately and effectively.
- There is a need to increase awareness of new technological developments (e.g., in incineration) and good management practices using the 3Rs from the agencies and institutions involved (e.g., hospitals) down to the community at large.

Footnotes

1. Imura, H.; Yedla, S.; Shinirakawa, H.; and Memon, M.A. (2005). Urban Environmental Issues and Trends in Asia – An Overview, International Review for Environmental Strategies, Vol. 5, pp. 357-382.
2. World Bank. 2005. Waste Management in China: Issues and Recommendations, May 2005, Urban Development Working Papers, East Asia Infrastructure Department, Working Paper No. 9. Available at: http://siteresources.worldbank.org/INTEAPREGTOPURBDEV/Resources/China-Waste-Management1.pdf (Accessed on 30 October 2009)
3. United Nations Centre for Regional Development. Website: http://www.uncrd.or.jp/env/ (Accessed on 15 December 2009)
4. Asian Institute of Technology. 2008. 3R in Asia: a Gap Analysis, Bangkok, Thailand

Solid and Hazardous Waste Thematic Group Members

CHAIR

- Department of Waste Management and Recycling, Ministry of the Environment

MEMBERS

- Department of Environment, Parks & Recreation, Ministry of Development, Brunei Darussalam
- Ministry of Environment, Cambodia
- Institute of Solid Waste and Department of Environmental Pollution and Health, Chinese Research Academy of Environmental Sciences, China
- Ministry of Environment, Indonesia
- Ministry of Environment, Japan
- Ministry of Public Works and Transport, Lao PDR
- Ministry of Housing and Local Government, Malaysia

MEMBERS (continued)

- Ministry of Nature, Environment and Tourism, Mongolia
- Ministry of Health, Mongolia
- National Commission for Environmental Affairs, Myanmar
- National Solid Waste Management Commission, Department of Environment and Natural Resources, Philippines
- National Institute of Environmental Research, Republic of Korea
- National Environment Agency, Singapore
- Pollution Control Department, Ministry of Natural Resources and Environment, Thailand
- Department of Health, Ministry of Public Health, Thailand
- Pollution Control Division, Vietnam Environment Protection Agency, Ministry of Natural Resourses and Environment, Vietnam

REGIONAL & INTERNATIONAL PARTNERS

- Asian Institute of Technology, Thailand
- Institute for Global Environmental Strategies
- Mitsubishi Research Institute
- Overseas Environmental Cooperation Center
- Pacific Basin Consortium for Environment and Health Sciences
- Society of Solid Waste Management Experts in Asia and Pacific Islands
- United Nations Centre for Regional Development
- United Nations Environment Programme
- World Health Organization

JOINT SECRETARIAT

- United Nations Environment Programme
- World Health Organization