



# NEWSLETTER

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**THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS**

## Dear Waste Management Experts

There are so many issues to resolve and develop in the field of SWM. One of the fundamental ones, particularly in developing countries, is the capacity development of persons/institutions involved. In this issue of our Newsletter, we introduce JICA's latest report "Supporting Capacity Development for SWM in Developing Countries".

As part of the series on Japanese ODA, the SWM Study in Dhaka City, Bangladesh is reported in this issue. Also, a fee collection system is an option for waste reduction in Japan. The article on Fukuoka City "For 3R realization" will present the prehistory of fee-collection introduction.

JSWME is going to hold the 16<sup>th</sup> annual conference from October 31 to November 2, in Sendai City, Miyagi Prefecture, in the North-East District of Honshu Island. The international relations committee will arrange an English poster session and the "Japan-Korea symposium on 3R Strategies" on the first day.

Prior to the annual conference, JSWME, co-host with NIES, Okayama University, JBIC and JICA, is planning to hold an Experts Meeting for networking of SWM experts in the Asia-Pacific islands region from October

28 to 29 in Tokyo. Experts from ten countries, including Korea, China, Indonesia, Vietnam and so on, are scheduled to discuss the issues on SWM in each country and the importance of experience exchange. The details of the Annual Conference and Experts Meeting are available on JSWME's HP

< <http://www.jswme.gr.jp/international/> >.

(Hideo Azuma)

## JICA's Study Report "Supporting Capacity Development for Solid Waste Management in Developing Countries" Published

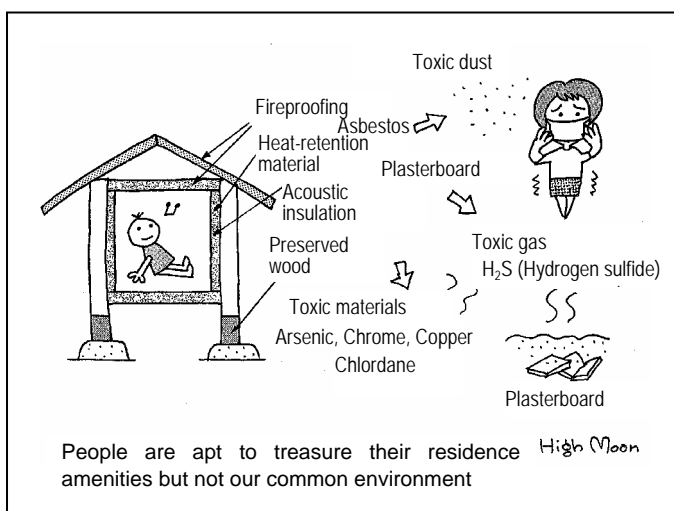
Japan International Cooperation Agency (JICA) published a study report entitled "Supporting Capacity Development for Solid Waste Management in Developing Countries – Towards Improving the Solid Waste Management Capacity of the Entire Society" in July 2005. This report is a translation of the second edition of the report in Japanese. English and Japanese reports are downloadable from the following JICA website:

<http://www.jica.go.jp/english/resources/publications/study/topical/waste/index.html>

The following is brief introduction of the report.

### 1. Background and purpose of the study

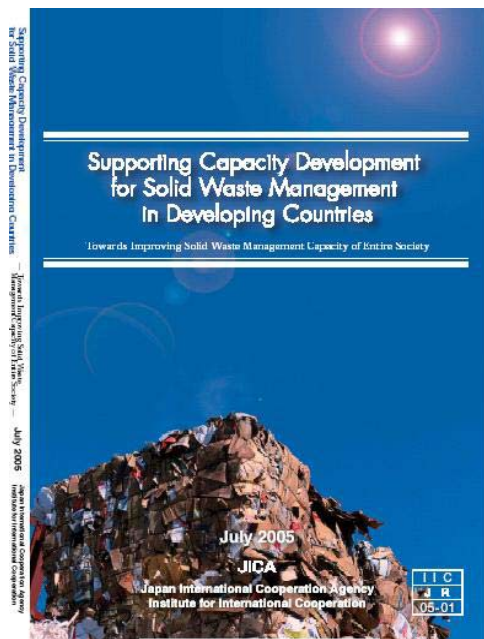
Waste is said to be "a mirror of society" since waste generation and disposal reflect a range of aspects of that society, such as its economic, historical, cultural, and environmental components. Solid waste problems in developing countries include underdeveloped waste collection systems and inappropriate final disposal, which are causing environmental pollution and placing an additional burden on those already suffering from urban poverty. Moreover, recent levels of economic growth and the subsequent introduction of mass consumption lifestyles from developed countries are aggravating these problems. Many developing countries continue to have high hopes of benefiting from the expertise and technologies in this sector available in Japan, which also grappled with an explosion of urban



Comments by High Moon: "We should take care of safe disposal of construction waste."

Illustrated by Prof. Hiroshi Takatsuki (Taka-tsuki literally means "High Moon").

waste problems under government leadership with the



Front cover of the JICA report recently published.

cooperation of local communities during the high growth period following WWII.

As a donor, Japan should first accurately assess the issues and needs of each developing country and then explore the optimal form of aid to the country or society. This approach is essential to ensure that the outcomes of aid are more effective and sustainable.

In order to ensure that JICA's technical cooperation in solid waste management (SWM) is more effective and efficient, this study identified a wide range of SWM issues that developing countries are facing and presented them in a systematic manner. In addition, this study examined the directions and approaches that JICA's assistance can take in SWM.

## 2. "Capacity Development," as a central concept of assistance for solid waste management

The main theme throughout this report is "support for capacity development initiatives." This concept chiefly aims at helping developing countries with an endogenous and sustainable process for improvement. The report suggests that such approaches should be at the center of future development assistance in the solid waste sector. In other words, the report discussed future directions for development assistance in this sector based on the idea that the primary objectives must be to support the recipients in enhancing the SWM capacity of the entire society and in building sustainable SWM systems. The report focuses on how to position capacity development in the context of SWM and on how to provide better

assistance, including ways to put the concept of capacity development into practice, as well as considerations related to the actual implementation of projects. Development assistance provided by donors should focus on the provision of incentives and opportunities while ensuring ownership by the recipients.

## 3. Emphasis on the participation of and support from communities

Another important consideration is an emphasis on the participation of and support from communities. Although urban SWM services are generally delivered by municipalities, efficient and effective service delivery is difficult to achieve without the active participation of and support from local communities. This is demonstrated by waste collection services and recycling activities in Japan, and developing countries are no exception. It is clear that participation of the communities and agreements with them are now essential parts of waste service delivery in developing countries. It can even be argued that solid waste problems are social phenomena closely related to urban and economic problems (especially poverty). This report also focuses on the relationship between waste on the one hand and the society and economy on the other in discussing what is going on in developing countries.

## 4. Conclusion: To establish approaches to capacity development support in the solid waste sector

Capacity development support in SWM constitutes a key concept in exploring future directions for technical cooperation. This perspective is considered to be in the same vein as respect for ownership and cooperation for the support of self-help and self reliance, which are known as one of the characteristics of Japan's technical cooperation. In retrospect, some attributes of this concept can be found in JICA's past operations and experiences. However, these attributes are derived from the trial-and-error processes of individual projects; these processes have yet to give rise to the establishment of this concept.

In future technical cooperation of JICA, the objective of achieving the expected results effectively and efficiently through the adoption of the capacity development support approach in each project will naturally continue to be pursued. Simultaneously, efforts should be made to accumulate and summarize the experiences and lessons from these projects so as to establish a strong 'methodology on capacity development support' that is backed by actual practice.

(Sei Kondo)

## Japan's ODA on SWM :

### SWM Improvement in Dhaka City, Bangladesh

The Government of Japan decided to conduct "The Study on Solid Waste Management in Dhaka City" from November 2003 to March 2005 to formulate a master plan concerning solid waste management in Dhaka City with the target year of 2015 and to develop the capabilities and management skills of the personnel of Dhaka City Cooperation (DCC) through technology transfer during the course of the Study.

The Study area covered the jurisdiction of the DCC, which totals about 131 km<sup>2</sup>. Sites for new landfill facilities would also be included in the study even if they were located in the new urban area outside the jurisdiction of the DCC. The Study covered three types of solid wastes generated, namely, domestic waste, industrial waste, and medical waste. Liquid and gaseous wastes were not included in the scope of this study. The master plan had a one decade time-horizon with the target year of 2015.

Waste generation in Dhaka City is summarized below.

Table: Waste generation in Dhaka City

Item	Parameter
<b>Estimated generation</b>	Domestic waste: 1,950 t/d
	Business waste: 1,050 t/d
	Street waste: 200 t/d
<b>Generation rate</b>	Domestic waste: 0.34 kg/d/person

Source: waste amount and quality survey by the study team

The Dhaka City Corporation Ordinance is the basic law regarding street/drain cleaning, waste collection and transportation. According to Section 78 of the Ordinance, the DCC is responsible for secondary waste collection to remove waste from its dustbins/containers, and transport the waste to final disposal sites. Residents are responsible for bringing their waste to DCC's waste collection points.

For the cleaning of roads/drains and public spaces, the DCC deploys about 7,000 cleaners in eight zones while private firms deploy about 600 cleaners in two zones.

The DCC uses three landfill sites, namely, Matuail, Berri Band and Uttara. Matuail is the only official site owned by the DCC; the rest (Berri Band and Uttara dumpsites) are private land. It is explained that the land owners have requested the DCC to fill the low lying land with solid waste. In response to their request, the DCC started disposing of solid waste there. The remaining capacity of the Matuail site is estimated at 1.1 million tons as of the end of 2004.

The recycling industry recovers 436 t/d of material in total. The amount recovered is the reduction of waste to be managed by the DCC. According to the estimate,



Photo: Waste collection experiment using newly introduced containers.

paper and plastic recycling contributes to a considerable reduction of waste disposal, while composting contributes very little to waste reduction although the compostable waste accounts for the largest portion of generated wastes.

The DCC budgeted Tk 2,670 million of their own account for the financial year 02/03. The problem of finance is that revenues collected were only 70% of the budgeted amounts on average from 2000/01 to 2002/03. This income gap compels the DCC to squeeze its expenditures except for salary/wages. The major source of revenue is holding tax, which accounts for 63% of revenue. The latest balance sheet of SWM indicates a growing deficit trend.

Some of the priority projects and programs indicated by the master plan need immediate commencement as follows:

1. The plan proposes to form a special organization and encourage residents through the movement envisaged by the organization to change their behaviour of waste discharge to well-managed primary collection. A Ward Solid Waste Management Plan will be formulated based on the result of workshops. Also, a community-level primary collection system will be developed.
2. The plan proposes the future composition of collection/transportation vehicles and the improvement of the collection equipment/system from the viewpoints of efficiency and cost-performance. The plan also proposes that the DCC should determine job descriptions for each section engaged in solid waste management.
3. The plan proposes to make the present landfill site into a sanitary landfill site and to secure and construct a new landfill site. Also a taskforce for the landfill shall be developed for improved landfill operation.
4. To enhance DCC's capability for integrated SWM, scattered functions should be combined in one department.

The DCC is now putting this solid waste management master plan into practice. Primary collection has been

improved in two wards by adopting the ward-based solid waste management. A Ward Clean Contest to encourage citizens was carried out, with led by a ward community organization. Moreover, the development of new containers and an experiment on waste collection were done. The fund to improve the landfill site was prepared and the procedure to construct the landfill has been processing. The Solid Waste Division (WMD) for the special purpose of solid waste management was established in the DCC and the appointment of new personnel was announced.

(Akio Ishii)

*Municipality on the Move*

**Towards 3R-oriented Society  
– Journey to Fee Collection System in Fukuoka City –**

Fukuoka city begins charging the local residents for domestic waste collection as of October 2005. To discharge waste, the residents need to buy plastic bags which cost 45 yen (45-liter-bag), 30 yen (30-liter-bag) and 15 yen (15-liter-bag) for burnable and noncombustible waste, and half that for glass bottles and PET bottles, thus encouraging waste minimization.

From 1992 to 1997, the amount of waste in Fukuoka city had increased more steeply than the population increase. Since 1998, it has decreased by about 10% due to such events as the change of the waste separation rule in 1997, but it has been rather stable in recent years. The city's population is estimated to continue increasing until 2025, and if waste continues to increase at the current pace, it will exceed the incineration capacity in about 8 years, and completely fill the final disposal site in about 20 years. In Japan, at the national level, a legal framework towards waste reduction was established through the enactment of The Basic Law for Establishing the Recycling-based Society and the amendment/enactment of the Waste Management and Public Cleansing Law and other recycling-related laws. Accordingly, it was also necessary for the city to change the conventional social system, where the material flow is one-way, to a society where a material cycle is pursued through the 3Rs, namely reduce, reuse and recycle.

In August 2000, a working group to study the establishment of a recycling-based society in the city was established as a private advisory body to the mayor. It was composed of members from not only academia but also NPOs, commercial establishments, mass media, attorneys, residents and many other groups. In the interim phase, the working group carried out a public opinion survey and a hearing survey of business entities,

and completed a final report in December 2001. The report proposed the establishment of a "Fukuoka style" recycling-oriented system, where domestic waste collection is charged, an environmental citizens' fund is founded with the collected fees, and activities of local people/enterprises having environmental initiatives are supported and promoted by the fund.

The city started to formulate a new basic waste management plan toward the recycling-oriented society and to elaborate the fee collection system, but there was a long process ahead. It took more than three years for the waste fee bill to be passed by the city assembly. In the meantime, there was the argument that waste recycling should be further promoted before fee collection, for example, introducing door-to-door used paper collection; and responsible bodies to accept recovered materials should be established. Furthermore, the city had held public hearings and received public comments for one year as the city considered it was important to hear the opinions of the citizens carefully and to ask for their understanding. The public opinions were controversial, but the majority stated that the fee collection was inevitable today; recognizing its implementation in nearly all the neighboring cities, although some stated that fee collection would do nothing for waste reduction but allow for the "double-dipping" of tax. Also, many requested a clear accounting of the revenue raised by the fee collection system and effective use for such as countermeasures against illegal waste disposal.

The waste fee collection system in Fukuoka city is one of the political instruments for promotion of the 3Rs and the establishment of a recycling-oriented society, aiming to (i) clarify waste generators' responsibility, (ii) ensure the equity of financial burden, and (iii) motivate the citizens to reduce and recycle waste. While it imposes part of the waste management cost on the public, it sets up the environmental citizens' fund to assist the activities of citizens/business entities and support the "Fukuoka style" system. The next issue will be on how to make the system, which was developed in citizen participation, effective in practice through an evaluation and verification process.

(Kimiko Matsuda)

**Journal of the Japan Society of Waste  
Management Experts, Vol. 16, No.4 (July 2005)**

Recent issues of the Journal of JSWME contain the following articles. The articles are written in Japanese

with the abstract in English.

Paper

***Emissions of Semi- and Non-volatile Organohalogen Compounds from Flue Gas of Waste Incineration Facilities***

Yuichi Miyake, Mika Kato and Kohei Urano

***Choosing a Siting Plan for a Waste Disposal Facility for Wide Area Management: A Study of Public Preference Formation***

Toshiaki Sasao and Takahiro Tsuge

***Preparation of a Catalyst from Waste Wood that has been treated with Preservative***

Tetsuya Otake, Masahiro Shishido, Norio Andoh and Masao Kobayashi

***Decomposition of CFC-12 by Molten Alkaline Hydroxide Compounds – Confirmation of Decomposition Performance with Laboratory-scale Experimental Apparatus -***

Yuichi Shoji, Nozomu Sato, Shinichi Ishii, Keiichi Yamamoto and Shukuji Asakura

***Low Temperature Solidification of Lime Cake and its Humidity Regulating Characteristics***

Hidenobu Itoh, Hiroyuki Toyama, Fumihiro Uneta, Masami Futamata, Junichi Takahashi and Masami Kishi

***Microbe Utilization of Carbon and Nitrogen During Composting***

Takeki Maeda and Juzo Matsuda

***Toxicity Assessment of Fly-ash Eluate by Japanese Medaka (*Oryzias latipes*) and Bivalve Mussel (*Mytilidae* sp.)***

Ko-hei Sumitani, Shosaku Kashiwada, Takahiro Kubota, Kae Osaki and Yoshiro Ono

***Phosphorus Recovery from Excess Sludge with Subcritical Water Process and Magnesium Ammonium Phosphate Process***

Mitsuhiro Arakane, Tsuyoshi Imai, Sadaaki Murakami, Masami Takeuchi, Masao Ukita, Masahiko Sekine and Takaya Higuchi

***Safety Evaluation of the Sterilization Effect of Intermediate Treatments for Medical Waste***

Mingyu Piao, Isao Aoyama and Masaru Tanaka

***Study on Quality Deterioration Mechanisms and Impurity Removal Methods for Waste PET Bottles***

Katsumi Hirano, Keitarou Kanehama, Yusuke Innami, Maki Hoshino, Takeshi Konishi, Shigeki Toyoda, Motoyuki Sugano and Kiyoshi Mashimo

**Waste Management Research**

**Vol. 16, No.4 (July 2005)**

Preface

***The Starting Point of Waste Management, Nightsoil Disposal***

Yoshio Yagi

Special Issues: Mercury and Environment

***Mercury Toxicity and its Health Effects***

Mineshi Sakamoto and Hirokatsu Akagi

***Preliminary Estimation of Mercury Emission Inventories for Japan's Air***

Akiko Kida and Shin-ichi Sakai

***Mercury Behavior and Control Technology in the Coal Combustion Process***

Hiroshi Moritomi

***Behavior and Control of Mercury in the Waste Combustion Process***

Masaki Takaoka

***Substance Flow of Mercury and Fluorescent Lamp Recycling***

Misuzu Asari, Kazuki Fukui, Shin-ichi Sakai and Hiroshi Takatsuki

Current Members of JSWME as of September 30, 2005  
(The figures in parenthesis indicate the difference from May 31, 2005)

Regular Members	3,409	(56)
Students	312	(33)
Non-Japanese Member	101	(11)
Public Institutions	111	(1)
Supporting Members	176	(3)
Individuals of NPOs	4	(1)
Total	4,113	(105)

**NEWS LETTER NO.54, October, 2005**

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