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# NEWSLETTER

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**JAPAN SOCIETY OF MATERIAL CYCLE AND WASTE MANAGEMENT**

## New Year Address

Happy New Year.

As we look forward to another year, we recognize that already a year has passed since the Japan Society of Material Cycles and Waste Management was established as a corporation.

With next-quarter elections for our executive board is nearing, this year under the new chairperson, the Society will expand its activities in earnest.

It is essential for the Society to have steady operational resources to carry out sound and sustainable activities, but we must repeatedly consider if we will secure income through membership fees--making our primary effort to "increase membership"--or contrarily, to discard the notion of ever-increasing growth and adjust activities consistent with our revenue, despite the risk of atrophy in what we aim to achieve.

In this regard, as the year begins, I would like to call upon all of our members to ruminate upon the mission of the Society.

1. To provide an academic position for society through actively spreading information, proposing and raising issues and contributing solutions to waste problems.
2. To provide a comprehensive academic organization which aspires to offer society practical knowledge based upon an extensive academic foundation through close communication with society-at-large, with participation from citizens to a variety of stakeholders as part of, and beyond, its membership.

3. To construct partnerships within the international academic community and join efforts in the development of a material-cycle society and contribute to solving waste problems.

We are living in an era of rapid change of the world around us, and our academic organization is also undergoing a generational shift. The mission of the Society, as given above, will rely on a clear position on its ability to assemble together the strengths of individuals, corporations and organizations through exchange and cooperation. In particular, I am looking toward the younger generation to continue in stepping up their proactive efforts to these ends. In addition, it is necessary to further apply the advice of senior members in the operation of the Society.

As my greeting to all you in the New Year, I sincerely wish for the further development of the Japan Society of Material Cycles and Waste Management.

I hope that we can rely on your continued support this year.

(Kazuo Yamamoto)



Author: The marine litter is composed of the wastes from various countries.

**The 6th Meeting of the Society of Solid Waste Management Experts in Asia & Pacific Islands held at Nagoya University**

The sixth meeting of the Society of Solid Waste Management Experts in Asia & Pacific Islands (SWAPI) was held at Nagoya University from September 16<sup>th</sup> to 18<sup>th</sup>, bringing together experts from twelve countries and regions, with the aim to form a network of waste experts in the region.

This year for the first time the meeting was held at the same time as the Japan Society of Material Cycles and Waste Management (JSMCWM) Annual Conference. This joint effort was added to by introducing a new international session--presentations combining short speeches and posters--attended by a number of SWAPI members and in close coordination with JSMCWM.

At the experts' meeting, proposed charter was presented to establish a governing structure for SWAPI, and experts from each country reported on the progress of organizing waste experts in their countries. There were also presentations on individual research plans, such as grasping reliable data, hazardous waste management, biomass waste, sanitary landfill, plasma technology, waste to energy and energy recovery, greenhouse gases and CDM, and appropriate technology for SWM, as well as presentations on publication activities, including the upcoming book Municipal Solid Waste Management in Asia and Pacific Islands and a special collaborative issue to the JSMCWM English-language journal.

On the 18<sup>th</sup>, the International Symposium featured two keynote speeches on the theme of "Network Building in Asia and Pacific Islands," and six presentations under the theme, "Landfill Management and Global Warming in Asia and Pacific Islands," followed by a lively question-and-answer session and sharing of ideas between foreign experts and other members of the Society. There were a total of 150 symposium participants, including Society members and those from the Korea Society of Waste Management.

Furthermore, on the morning of the 17<sup>th</sup>, there was a visit to two sites operated by Daiseki Co., Ltd., an

industrial waste management company, and a recycling station in Nagoya City area citizens' group to introduce Japan's on-going efforts to reduce waste and recycle.

The 7<sup>th</sup> Meeting of Experts, to be hosted by National Taiwan University and the Environment Resource Institute, among others, is planned for September 15<sup>th</sup> through 18<sup>th</sup>, 2010 in Taipei, Taiwan.



(Haruo Matsumura)

**Japan's ODA on Solid Waste Management:  
The Master Plan on Solid Waste Management for  
Boracay Island and the Municipality of Malay**

**1. Background and Purpose**

Boracay Island belongs to the Municipality of Malay (abbreviated, MOM) in Aklan Province and has been developed as one of the most popular tourist resorts in the Philippines. Since the number of tourists has increased year by year, the amount of solid waste generated has rapidly increased. Consequently, the municipality's solid waste management has become a critical concern. Thus, to solve such issues and to improve the conditions of solid waste management (SWM) in the municipality, a JICA Study titled "The Master Plan on Solid Waste Management for Boracay Island and the Municipality of Malay" was carried out from March 2007 to March 2008.

The objectives of the Study were as follows.

- 1) To formulate a 10-year SWM Plan for MOM
- 2) To conduct a feasibility study for priority projects

3) Through the course of the Study, to strengthen the capacity of municipality staff and the National Solid Waste Management Commission (NSWMC) to carry out SWM

## 2. Contents of the Study

The study covered the entire area of MOM, including Boracay Island and a northern part of Panay Island. There is no available area for the development of landfill site on Boracay Island but there is in Panay Island. However, Boracay Island is a main source of waste generation, so sea transportation of the solid waste generated there is necessary.

There are small scale recycling activities including composting by *barangays*, which are the smallest administrative unit in the Philippines so consideration was given to the great potential in diverting a large amount of waste that would potentially be land-filled since some private sectors participate in the source reduction and segregation activities, even during the study period.

In this context, the waste diversion rate, which is the target parameter to reduce the amount of waste which goes to a landfill site, was set as a high value to prolong the life of a new sanitary landfill site (SLF) as well as to reduce the transportation cost. The basic strategies of the 10-year SWM plan for MOM are given in the table below.

Through the preparation of the 10-year SWM plan, it became apparent that there were some issues related to the laws and regulations of SWM in the Philippines. The annotated outline prepared by NSWMC for preparation of a 10-year SWM plan contained some relative redundancies. The study team proposed the simple structure of a 10-year SWM plan which was applied to the 10-year SWM plan. Another issue was that the definition of the waste diversion rate was not clearly defined. The calculation methods of the waste diversion rate were then proposed for milestone years.

During the study, the capacity of counterpart personnel (C/Ps) in regard to planning, design and confirmation of feasibility and so on was developed through actual participation in the waste characterization survey, time and motion survey and

discussion with the study team. In addition, a technical transfer seminar with neighboring cities in Aklan province and the target cities for “the Project on Establishment of Ecological Solid Waste Management System in Three Cities in the Philippines” was held to share the experience and knowledge of the Study.

Components	Strategies	
Source Reduction	Reduction of all possible residual waste	- Prohibition of using specific packages - “My bag” campaign
	Reduction of bio-degradable waste	- Promotion of home compost - Promotion of livestock feeding
	Promotion of reuse and recycling of reusable or recyclable wastes	- Introduction of deposit system - Introduction of group recycling
Intermediate Reduction	Development of centralized and cluster Material Recovery Facilities (MRFs) for effective and environmentally friendly operation	
	Development and improvement of MRFs on mainland of Malay	
Collection and Transportation	Improvement of collection system in accordance with development of centralized MRF with consideration of collection coverage areas	
	Introduction of effective segregated collection	
Final Disposal	Development of new SLF	
Special Waste Management	Special waste collected and transported properly and disposed of in an isolated cell at the new sanitary landfill site	
Information, Education and Communication (IEC)	IEC activities implemented through various communication tools for the various targets which include residents, tourists and business sectors to support and promote the activities for diversion, collection and disposal	
Funding Arrangement Strategy	Local common fund strategically established for effective utilization of various revenue sources to implement the plan	
Capacity Development	Series of training as well as development of SWM administrative tools such as SWM guidelines or manuals developed for MOM as well as the barangays.	



**Photo: Bioreactor to prepare compost from biodegradable waste**

Furthermore, three priority projects were selected and feasibility studies of the projects were carried out, including the development of a new sanitary landfill, the rehabilitation of the old dump site and the development of a centralized Material Recovery Factory (MRF).

### **3. Current Status**

To support the actualization of the plan and priority projects, the follow-up study for “Implementation of the Master Plan on Solid Waste Management for Boracay Island and the Municipality of Malay” is now underway.

In the follow-up study, the tender document for a design-build-operation contract of a new sanitary landfill site is being prepared to implement one of priority projects. The local council approved the local common fund, which is a funding system to collect from various financial sources such as tourists, residents and business establishments as well as local government tax.

Now the guidelines for the local common fund are being prepared to utilize the fund with support of the study team. In the proposed schemes and procedures for source reduction and a segregation system, the pilot project of source segregated collection is underway to realize the plan. In this way, the capacity development of the C/Ps is progressing through the follow-up study for future implementation of the plan by the C/Ps.

(Satoshi Higashinakagawa)

## **Report on Co-benefit CDM Workshop at Sardinia 2009: Potential of semi-aerobic landfill as a technology for climate change mitigation**

A workshop on co-benefit clean development mechanisms (CDM) was held as part of the 12th International Waste Management and Landfill Symposium in Sardinia, Italy (Sardinia 2009) from 5-9 October 2009. Dr. Matsufuji, (Fukuoka Univ., Japan), who chaired the workshop, opened the workshop by pointing out that each business sector must resolutely aspire to mitigate climate change.

The waste sector has great potential to reduce and mitigate greenhouse gas emission, and he reminded the audience that the primary objective for waste management is to add to the creation of a sound and comfortable living environment. This was followed by five presentations and an active and fruitful discussion on favorable ways to conduct CDM in the waste management field.

Mr. Kato, (OECC, Japan), presented the principal ideas of the co-benefit approach, and introduced the CDM policy approach of the Japanese government which is that the investing and hosting governments should thoroughly negotiate political points-of-view before designing CDM projects.

Next, Dr. Lee, (Lee International, USA), explained the economic and social framework of carbon credits in which he stated the necessity of a sustainable carbon market by taking into consideration post-Kyoto Protocol actions.

That was followed by a presentation by Mr. Tsubaki, (Tokyu Construction Co. Ltd., Japan), on his company’s work in developing countries. He introduced their project to reduce greenhouse gas emissions from a waste landfill in Malaysia through passive aeration. Their preliminary trial exhibited high feasibility for semi-aerobic operation of the waste landfill to reduce landfill methane emission.

Dr. Siebel, (UNESCO-IHE, The Netherlands), then presented a case of scenario-based lifecycle assessment in Semaria, Indonesia. He raised some of the advantages and disadvantages on the effects of power generation from landfill gas and diverting

organic waste toward composting, pointing out the net reduction of greenhouse gas emission. The power generation from landfill gas is significantly effective given continued financial support, which means that additional assistance should be requisite following the CDM framework. Although the energy consumption for the separation for organic waste was not fully evaluated, the importance of the improvement of the whole waste management system was strongly indicated and the audience indicated their agreement.

Dr. Eldridge, (Tonkin & Taylor Ltd, New Zealand), reported a unique but valuable experience of failure during technology transfer (landfill gas recovery) in the tropical South Pacific islands. The problems were ascribed to an amount of precipitation that exceeded their expectations, but the audience pointed out the feasibility to overcome this by applying the appropriate design.

There were opposing opinions that the characteristics of waste and geological structure were not suitable for landfill recovery. Semi-aerobic landfill management was suggested as a possible alternative in the workshop. However, the Japanese attendants pointed out another aspect that the drainage of leachate in the waste layer must be a key management parameter for successful management of semi-aerobic landfill.

There were a few opinions that showed skepticism for semi-aerobic landfill management as a mitigation technology due to insufficient scientific basis. The uncertainty in the potential emission of nitrous oxide was one reason. Semi-aerobic landfill projects have already been put into practice in Japan and some other countries. It is expected that the GHG emissions and feasibility for CDM projects will be announced after going through the peer scientific assessment process in the near future.

( Tomonori Ishigaki )

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Current Members of JSMCWM as of November 30, 2009 (The figures in parenthesis indicate the difference from October, 2009)		
Regular Members	2,740	(-3)
Students	254	(0)
Non-Japanese Member	86	(0)
Public Institutions	98	(1)
Supporting Members	126	(0)
Individuals of NPOs	6	(0)
Total	3,310	(-2)

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Edited by: Prof. Yasushi Matsufuji, Chairman,  
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Planned by: Taisuke Watanabe

Edited by: Tsunako Matsumoto, Yuko Aoki  
Translation and Design: Kokusai Kogyo co. ltd.

Buzen-ya Bldg. Shiba 5-1-9, Minato-Ku,  
Tokyo 108-0014, Japan

Phone: (+81) 3-3769-5099

Fax: (+81) 3-3769-1492

<http://jsmcwm.or.jp/international/>

e-mail: [international@jswme.gr.jp](mailto:international@jswme.gr.jp)

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