



NEWSLETTER

No.51

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January 2005

THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS

**Expectation for the International Collaboration in
Promoting Solid Waste Management Research New Year
—New Year Greetings —
JSWME President, Prof. Nobutoshi Tanaka**

Best wishes for a happy new year to all the readers of the JSWME Newsletter.

Last year, the Japanese archipelago was hit by severe rainstorms, typhoons, and earthquakes. We Japanese were made to realize how vulnerable human beings are against the forces of nature. I hope, however, we will make steady steps forward in the face of unpredictable events of such natural disasters.

Five years have past since the year 2000, which is regarded as the starting year for the formation of a recycling-oriented society in Japan. This year is also the midpoint of the Basic Plan for Establishing a Recycling-based Society, which is targeted for the year 2010. Our efforts to tackle waste issues should be evaluated and further progress is expected.

It has been long recognized difficult to compare waste



Prof. Nobutoshi Tanaka,
8th JSWME President

management between countries since waste management has been developed specifically in each country, influenced by such conditions as politics, economics, administration, geography, and meteorology. As technical exchanges expand internationally, however, it has become clear that the expertise and research of one country may be useful to others. For instance, waste landfill methods in Japan were considered unique and not very appropriate abroad; but recently, some methods in Japan have begun to be used such as semi-aerobic landfilling, washing the inside of a landfill with rainwater infiltration, and reducing organic matter in waste by incineration prior to landfilling. Such a trend, in turn, has induced the reconsideration of landfill standards and methodology in Japan. Asian countries, whose meteorological conditions are similar to that of Japan, are also keen to apply Japanese landfill methods.

In light of this, JSWME, and its international relations committee in particular, is trying to establish an information network or to organize a symposium to promote global dialogue. Your support to us is highly appreciated.

(Nobutoshi Tanaka)

**Japan's ODA on Solid Waste Management:
A small island, a big challenge**

1. Pacific islands seen as a paradise

When people think of Pacific islands, they probably conjure up images of an island paradise such as white sandy beaches, beautiful lagoons, vast ocean and coconut trees. The reality, however, is somewhat different from this image.

In the Pacific island countries (PICs), there are some special features that differ from those of industrialized countries. Such features include geographical isolation, fragility of the island environment, limited natural resources, heavy reliance on imported goods, and lack of industries other than tourism, agriculture or fisheries. The combined effects of imported goods and increasing economic development have contributed to rapidly increased volumes and diversity of solid wastes.



"Advent of home collection service business"

Comments by High Moon: "Pay collection of garbage would lead to privatization."

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

Geographical isolation and small local markets make it more difficult to recycle products economically. Waste dumping into lagoons and coastal areas is a major threat to clean environments as well as jeopardizing the current image of an island paradise. Even in high-islands, improperly managed dumpsites are posing serious risks to public health and the surrounding environment. The reduction and safe disposal of solid waste is one of the emerging and crucial issues for the PICs.

2. Solid Waste Initiative in the Pacific Region

To tackle problems associated with solid waste, the Government of Japan declared its willingness to support PICs for improving solid waste management at the second Japan-Pacific Leaders Meeting (PALM 2000) in Miyazaki in 2000. The solid waste initiative being implemented is based around the following programs:

1. Systematic development of good management practices
2. Demonstration of waste minimization
3. Incremental improvements to landfills
4. Annual regional workshops on municipal solid waste management

The initiative has been implemented by JICA (Japan International Cooperation Agency) through SPREP (South Pacific Regional Environment Programme, an inter-governmental organization based in Apia, Samoa). Among others, one of the achievements under this initiative is the upgrading of a dumpsite to a sanitary landfill in Samoa. The outline of the project is as follows:

- Area rehabilitated: 3 ha of an open dump
- Enclosing/divider embankment: 900 m
- New access roads: 850 m
- Leachate collection pipes: 600 m (main and branch pipes)
- Gas venting facility: 5
- Leachate retention pond and surface/storm water reservoir

The Tafaigata waste disposal site in Samoa used to be a typical open dump where waste had simply been dumped without any management for over ten years. Improper management caused a bad smell, an army of flies and vectors, and pollution of surface and ground waters. Uncontrolled open burning set by human scavengers sometimes threatened nearby communities as well as landfill workers, and took a few weeks to extinguish. The objective of the project was to improve the management of the landfill and its operation so that the environmental and health risks could be minimized.

The concept of rehabilitation of the existing dumpsite was to create a rubbish bin with a physical boundary

(embankment) employing the semi-aerobic landfill method (also known as the “Fukuoka Method”). The project was implemented by two government officers (ex-participants of the workshop) with financial aid from JICA and under the supervision of SPREP. The project was executed in two stages and was completed in 2003. This was the first major application of the Fukuoka Method in the Pacific region.



A big rubbish bin under rehabilitation

The real challenge however is whether or not the government can provide enough resources to sustain the proper operation and maintenance of the landfill after rehabilitation.

3. Pacific Future on Solid Waste

At the third PALM held in Okinawa in May 2003, the Japanese Government further committed to assist Pacific island countries in improving solid waste management through the Okinawa Initiative. The next target is not only to duplicate the Tafaigata case, as a regional model for land-based waste disposal, to other similar islands, but to establish an appropriate waste disposal system in a low atoll island where the Fukuoka Method cannot be applied.

(Shiro Amano)

The 15th Annual Conference of JSWME, Takamatsu, and the International Session

The 15th annual conference of JSWME was held from November 17 to 19, in Takamatsu City, Kagawa Prefecture in Shikoku Island. Assembling over 1,200 experts and citizens, 537 reports were presented. Takamatsu City faces the Seto Inland Sea, which is famous for its scenic beauty. Teshima Island, the small island where large-scale illegal dumping of industrial waste notoriously took place, is only 12km from Takamatsu port (refer to Newsletter No.40 about the

illegal dump on Teshima at our web site). On November 17, the first day of the conference, the international session was held by the JSWME international relations committee, including the Japan-Korea symposium and the poster presentation.

a. Japan-Korea Symposium

The theme of the Japan-Korea symposium was "Biomass Now: The Activities of Japan and Korea", with panellists such as Dr. Kazuhiro Takamizawa of Gifu University, Dr. Jae-Chun Chung of Yonsei University, Dr. Yukihiko Matsumura of Hiroshima University, and Dr. Jin-Suk Lee of the Biomass Center, KIE; the coordinator of the symposium was Ms. Ryoko Sugiyama of the JSWME international relations committee.

Dr. Takamizawa introduced the trend of biomass utilization in the world, particularly in the EU, the USA and Brazil. The energy use of wood-biomass is getting popular in the EU and the USA, while Brazil is known for its use of ethanol generated as a result of the fermentation of sugar-cane.

Dr. Matsumura presented the biomass strategy of the Government of Japan and its technological development. He pointed out the small volume of biomass resources available in Japan and the lack of economies of scale in biomass production. He suggested gasification technology as one possibility.

Dr. Jae-Chun Chung explained the current biomass utilization and energy potential in Korea. Korea produces organic waste as large volume as 5,500 tons a year, but its recycling is not easy. Technology of RDF (refuse derived fuel) production, incineration and power generation, fuel production by pyrolysis, and waste oil purification is developing.

Dr. Jin-Suk Lee introduced research work on bio-fuel for transportation. Biodiesel is expected to be commercially produced from used flying oil by 2006. Furthermore, fundamental research on the production of bioethanol from lignocellulose is in progress.



The Panellists and Member of
JSWME International Relations Committee

There were about 70 participants including those from Korea, and the panellists and participants actively discussed and exchanged their opinions.

b. International Poster Presentations

The international poster presentations, held in the same hall as the Japanese poster presentations, introduced 13 posters from Korea and 17 from Japan. The presentations by foreign students in Japan increased to 11. There were many student participants, who lively explained and discussed their ideas in English.



Award Winners of Poster Presentations and
JSWME President, Prof. Tanaka (center)

The themes of papers were: organic waste and methane fermentation (6 posters), incineration (5 posters), recycling (4 posters), landfill (4 posters), melted slag (3 posters), waste management (2 posters) and others (6 posters). The posters were reviewed by the participants and "Weathering in mono landfill site - a comparison with soil weathering" by Ruina Zhang from Kyushu University and two others won the award.

(Akio Suzuki, Takashi Miyagawa and Hideo Azuma)

**Journal of the Japan Society of Waste
Management Experts, Vol. 15, No.6 (November 2004)**

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

Paper

***Status and Future Prospects of Hydrogen Production
from Biomass and Wastes by Pyrolysis-Gasification
and Reforming Processes***

Katsuya Kawamoto, Hideyoshi Kuramochi and Wei Wu

***Dioxin Formation on Ash from Gasification Melting
System***

Kazuyuki Suzuki, Hitoshi Yamazaki, Nobuyasu Kanda and Katsuya Kawamoto

A New Fly Ash Treatment Proposal and Practical Tests of Pilot Plants

Mototsugu Matsuno, Katsuhiko Tomoda, Kouji Kawamoto and Takasi Nakamura

Medata (*Oryzias latipes*) Embryo Toxicity of Treated Leachate from Waste-Landfill Sites

Kohei Sumitani, Shosaku Kashiwada, Kae Osaki, Masato Yamada, Shino Mohri, Shigeki Yasumasu, Ichiro Iuchi and Yoshiro Ono

A Study on Comprehensive Analysis Incorporating Environmental Load into Manual Labor within the Recycling Process

Kaduko Nakano, Yasuhiko Wada and Hiroyuki Ohshima

Characteristics of Alkali Elution on Incinerator Ash of Sewage Sludge

Yasuhiro Takahashi

Effectiveness of Daily Cover Soil on Solid Waste Landfill Stabilization

Naoko Hori, Takayuki Shimaoka, Kentaro Miyawaki, Syogo Sakita and Masataka Hanashima

Studies on Bisphenol A and its Origins in Leachates from Solid Waste Landfills

Hiromi Sakamoto, Hiroshi Fukui, Ikuo Souta and Hidehiro Kaneko

Note

Investigation of Halogen Content in Used Polystyrene for Home Appliance Goods

Toshiaki Miyanaga and Takuji Motegi

A Simple Method for the Detection of Fly-ash Dispersed at Landfill Sites

Hiroshi Fukui and Kunihiko Saitou

Waste Management Research

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Preface

The Way to the Resource-recycle Society - Two Proposals from an Autumnal Applied Microbiologist -
Yasuo Igarashi

Special Issues: Cost of Container Recycling and the Containers and Packaging Recycling Law

The Containers and Packaging Recycling Law - Cost Accounting and Impact on the Packaging Waste Stream -

Hajime Yamakawa

Research on Recycling Costs for Packaging in Japanese Municipalities

Takashi Ohkawa, Takashi Gunjima, Noriyuki Ohtoyo, Teruo Kamura, Masanori Kino, Kiyoshi Chiku, Tatsuya Nakaji and Masahiro Mori

Researching Recycling Costs for Containers and Packaging in Businesses (for the Packaging and Beverage Industries)

Tatsuya Nakaji, Takashi Gunjima, Takashi Ohkawa, Noriyuki Ohtoyo, Teruo Kamura, Masanori Kino, Kiyoshi Chiku and Masahiro Mori

Civic Ambitions for the Containers and Packaging Recycling Law

Ikuko Haga

Report

A Study on the Japanese System for Recovery and Destruction of Fluorocarbons from End-of-life Vehicles

Ken'ichi Togawa

**Report of Research Promotion Project '03
Subsidized by JSWME**

Research and Development Committee Current

Members of JSWME as of November 30, 2004

(The figures in parenthesis indicate the difference from September 30, 2004)

Regular Members	3,556	(24)
Students	313	(13)
Non-Japanese Member	94	(4)
Public Institutions	111	(-2)
Supporting Members	181	(2)
Individuals of NPOs	3	(0)
Total	4,258	(41)

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