

NEWSLETTER

No. 8

November 1993

THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS

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Dear Waste Management Experts

The 4th annual conference of JSWME, particularly its International Session, attended by some 1,400 people, successfully ended on October 15. Yes, this was good news, but probably it's not the biggest news to announce. On August 9th, the biggest news event of Japan for 1993 took place. That day marked the start of the Hosokawa coalition government consisting of 7 political parties without the Liberal Democratic Party whose administration once seemed to be everlasting. In this issue Prof. M. Hiraoka, president of JSWME expresses his expectations for the new administration's policy on waste management.

Also, following up from the last issue, activities of Japanese expert advisors to Malaysia will be introduced as an example of one of Japan's cooperation efforts with the developing world. This issue also briefly analyzes the current decline of waste discharge in Tokyo.
(by Hiroki HASHIZUME)

Expectation for New Government by Masakatsu HIRAOKA, President of JSWME

The new government headed by Prime Minister M. Hosokawa had put an end to the rule of the Liberal Democratic Party which had been in power since 1955. Although the new government is a coalition of seven parties and therefore not a completely unified front, it is still the first alternative political force since 1955.

The international journal "TIME", in the August 2, 1993 issue, said, "Starting afresh, a new era begins for Japan as the old-style politics goes up in smoke". It is expected that the old-style politics and administration will be reformed into a healthy competitive democracy. The long-term hope is that the old political system that has dominated Japan will be shattered and investments in environmental conservation for maintaining a healthy and pleasant life will be increased.



*Prime Minister
Morihiro Hosokawa*

For example, sewage systems are essential infrastructure not only for a healthy and pleasant life but also for the protection and improvement of water quality in public areas. The publicly sewered population ratio, that is the percentage of population living in public sewer service areas to the total population is about 48% which is behind the times compared with advanced western countries. This fact has been a target of criticism from other advanced countries, especially the US, that say it symbolizes a country that is too economically-oriented yet neglects the needs of its citizens.

Concerning waste management, it is recognized that socioeconomic systems based on a mass-production, mass-consumption, and mass-disposal oriented culture are going to reach a deadlock and the social systems must change to create an environmentally friendly recycling oriented society, where materials, products and socioeconomic activities are evaluated not only from the standpoint of their functional and economic efficiency but also for their impacts on the global environment.

The new government emphasizes that the old-style budget distribution system must be changed and construction of a social infrastructure such as sewage system and waste management systems must be promoted.

The JSWME celebrated its third anniversary in May 1993, and has been conducting several activities to improve waste management systems and to promote environmental protection. On behalf of JSWME, I would like to express our expectation for the new political alignment to create a new era.

Solid Waste Management (SWM) Expert Dispatch Service Offered by JICA (Case of Malaysia)

As explained in the last issue of the NEWSLETTER, the dispatch of experts to developing countries is one of the major SWM cooperation programs available from Japan. In this issue, a brief explanation is given on what can be done through the program and how to apply for the program. We will use the program in Malaysia as an example.

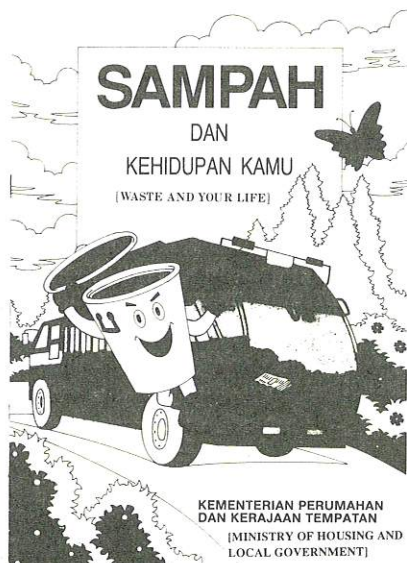
Dr. Sakurai from JICA (now, professor at the University of Tokyo), the first long term expert, was sent to Malaysia for the period 1986-1988 at the request of the Malaysian Government. He assisted the Ministry of Housing and Local Government (MHLG) in the formulation and launching of a SWM national plan called the Action Plan for a Beautiful and Clean Malaysia (ABC). ABC consists of 12 strategic programs. Two of them, namely, "Sanitary Landfills for All Municipal Councils" and "Enforcement

and Education" were considered to need further technical assistance from Japan.

Therefore, Prof. Matsufuji from Fukuoka University (from 1988 to 1990) and Mr. Hirai from Tokyo Metropolitan Government (from 1991 to 1993) were sent to Malaysia as the second and the third long term experts. As a sanitary landfill expert, Prof. Matsufuji assisted MHLG in the conversion of an open dump into a real sanitary landfill using a Japanese technology called "semi-aerobic landfill (SAL)". SAL has been developed by Fukuoka University and incorporated into Japanese national technical guidelines. SAL releases less polluted leachate than conventional anaerobic landfills. SAL also markedly reduces the generation of methane gas which is one of the causes of global warming. SAL achieves this at relatively low cost through the supply of air into the landfill by natural ventilation.

Prof. Matsufuji organized a series of workshops and published technical guidelines using the improved landfill as a model.

Mr. Hirai, a SWM education specialist, was sent to Malaysia in 1991 in order to assist MHLG's "Bersih dan Indah" campaign (Clean and Beautiful Campaign). The campaign has been highly valued by the Malaysian Government because it supports "Visit Malaysia 1990", "Visit ASEAN 1992" and "Visit Malaysia 1994". Mr. Hirai aided MHLG in the preparation of SWM education guidelines and the planning and implementation of SWM education related activities such as the publication of a supplementary textbook for SWM education (see Figure), production of a SWM education video program, children's painting competition and SWM education in schools. These activities have been vigorously carried out. Using Petaling Jaya as a model city. Enthusiasm shown for these activities by Ms. Kamariah, Director of Urban Services of Petaling Jaya, and her staff, is now creating a multiplying effect all over Malaysia.



Front cover of supplementary textbook for SWM education

As shown in the case of Malaysia, the SWM expert dispatch service is offered based on requests from developing countries. These requests should be submitted

to Japanese overseas diplomatic offices through the relevant government office of the respective country. Requests are carefully studied, and if appropriate, the Japanese government recruits and dispatches experts through the Japan International Cooperation Agency (JICA).

Depending on the service period, experts are classified into short term experts (shorter than one year) and long term experts (one year or longer). As of October 1, 1993, six people from Japan's major municipalities are working as JICA long term experts in Indonesia, the Philippines, Thailand and Paraguay. For further information, please contact Japanese overseas diplomatic offices or JICA overseas offices.

(by Kunitoshi SAKURAI and Hisakazu HIRAI)



By courtesy of Prof. Hiroshi Takatsuki, Kyoto Univ.

Japanese Municipalities on the Move (6) - Waste Reduction Achieved in Tokyo

Tokyo, a megalopolis where there is a large flow of people, materials and information, generates an enormous amount of waste as a result of its economic and living activities. About 4.9 million tons of waste was collected in fiscal year 1990 in the 23 special ward areas (central part of Tokyo) where 8.2 million people live. This amount corresponds to 10 % of the total amount of waste collected in all of Japan. The amount of waste in the central part of Tokyo increased by 5 % per year during the 5 year period 1985 - 1990.

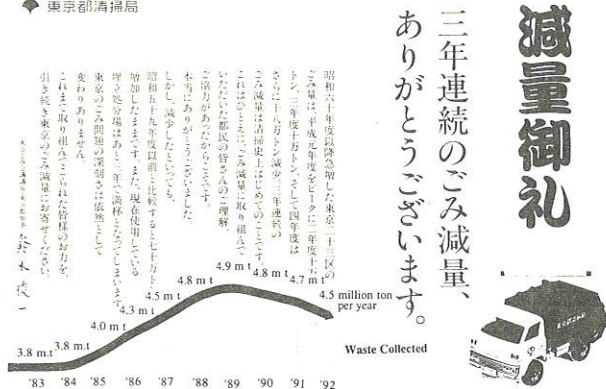
Although the Tokyo Metropolitan Government (TMG) constructed new incineration plants, the speed of the construction was not fast enough to keep up with the waste increases. As a result, about 20 % of combustible waste has been hauled directly to a final disposal site in Tokyo Bay without being incinerated. This situation made the life of the disposal site shorter. It is anticipated that the existing disposal site will be full within 3 years. Currently, a new landfill site with waste receiving capacity of 15 - 20 years is being planned.

In order to ease the situation, TMG started the "Tokyo Slim Campaign" in 1990. It is aimed at reducing waste generation through the cooperation of citizens and the business community. This campaign has led to the following TMG policies and actions:

1. The "Tokyo Congress on Waste" was established in 1990. "The Action Program for Waste Reduction" planned in 1991 has been implemented.
2. "Site Inspection and Guidance" for large offices with over 3,000 m² of floor area, and "Promotion of recycling of waste paper". An increase of waste paper is a major cause of the present waste increase.
3. Application of a "Manifest System" to waste generators that use TMG's waste disposal facilities and to generators that discharge over 100 kg/day of waste.
4. "Recyclable Waste Collection Service" for recycling of waste papers, cans and bottles. To strengthen the service, TMG's Public Cleansing Bureau has constructed Community Recycling Centers.
5. Public education and instruction through mass media such as TV, radio, newspapers, posters and exhibitions.

As a result of these activities, the amount of waste generated decreased in three consecutive years (1990, 1991 and 1992) for the first time in TMG's history. TMG believes that the decrease is attributable to the efforts made by citizens and the business community though the decrease may partly be explained by the economic recession that began in 1990. TMG prepared a poster (illustrated below) to show its appreciation for citizens' cooperation in the waste reduction.

東京都清掃局



Translation of TMG's Poster

Thank you very much for reducing your waste. We have successfully achieved waste reduction for three consecutive years owing to your cooperation.

Shun'ichi Suzuki, Governor of Tokyo Metropolitan Government

In April 1993, TMG enacted a new regulation the "Waste Disposal and Recycling Promotion Ordinance" which explicitly reflects TMG policy as mentioned before, and signifies that TMG is committed to creating a new society that actively pursue resource recycling. (by Hiroshi NINOMIYA, Hideo AZUMA & Kiichiro SAKAGUCHI)

A Brief Note on Solid Waste Management in Japan (8)
- Municipal Waste Collection -

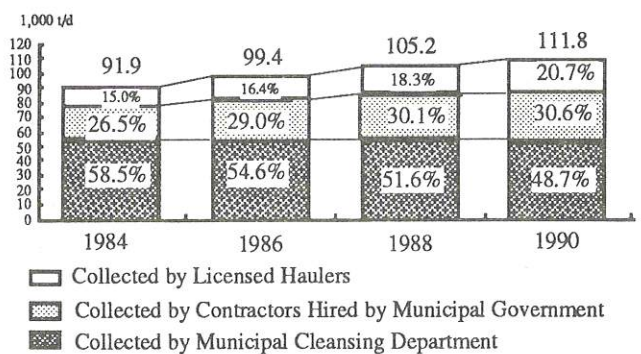
Change in Method of Waste Collection

In Japan, municipal waste is collected by three different kinds of collectors, i.e. cleansing departments of municipalities, contractors hired by municipalities, and

licensed haulers which collect waste mainly from business operators that discharge large amount of waste. Intermediate treatment such as incineration and final disposal are usually done by municipalities.

As shown in the figure, in spite of the steady increase in the amount of municipal waste collected since 1984, the amount of waste directly collected by municipal cleansing departments has been almost constant. Contractors and licensed haulers have handled the bulk of the increase in wastes during those years. In other words, it indicates that the bigger part of the increased waste has been from business activities.

Changes in Method of Waste Collection in Japan 1984 - 1990



Size of Licensed Haulers

Licensed haulers are generally small. In 1990, one company had 7.0 workers and 2.8 collection vehicles on average (including mobile packers and trucks). Loading capacity of one vehicle averaged 2.7 ton. Perhaps the size of the vehicle is limited not only by the size of the companies, but also by the narrow roads and heavy traffic in Japan.

Cost of Waste Collection

Why has municipalities' direct collection not increased since 1984 ? A reason is, as reviewed in issue No.4, the recent steep increase in the cost of waste management. (From 1984 to 1990, cost of municipal waste management has increased by 33%) In order to cut costs, some municipalities favor using contractors to collect waste rather than collecting it themselves. It is difficult to compare the cost of municipalities' direct collection and the cost of using contractors. Calculated from the total yearly cost of waste management in Japan in fiscal 1990, it is estimated that the unit cost of municipalities' own collection and transport is 17 thousand yen/ton and that of use of contractors is 15 thousand yen/ton. However, it must be noted that because each cost reflects its natural, geographical, industrial, demographical, social and other conditions of the respective municipality, this survey alone does not adequately demonstrate the cost difference between the two collection methods. When a municipality considers its collection systems, it takes into consideration the possible cost difference, service level, public education and other elements related to smooth implementation of its waste management system.

(by Kazumi YOSHIKAWA)

**Introduction of Governmental/Semi-Governmental Organization Related to Waste Management in Japan (6)
Japan Waste Research Foundation (WARF)**

The Japan Waste Research Foundation (WARF) is an authorized research and development center established under the Ministry of Health and Welfare of the Japanese Government to promote research and development on waste management.

Recently, socio-economic parameters are changing quite rapidly in Japan, and people are becoming more conscious of improving their living environment than ever before. Municipal waste management today is strongly needed to meet these changes adequately.

On August 1, 1989, government administrators, academics and industrialists concerned with waste management cooperatively established WARF in order to promptly cope with the problems mentioned above. On April 1, 1993, the Osaka Research Center was established to reinforce the research structure of WARF.

Objectives

WARF aims at improving waste management (especially, municipal waste management) and by so doing, contributing to the conservation of the living environment and improvement of public health. WARF carries out projects necessary for this purpose.

Activities

- Information gathering and investigations concerning waste management
- Research & development of technology for waste management and activities to spread the newly developed technology
- Evaluation of disposability of specific waste
- Information service concerning waste management
- International cooperation in the field of waste management
- Other related activities

Technology Development Promotion Projects

WARF conducts joint research projects with the government and the private sector to promote technology development concerning waste management. The following are joint research projects between the government and private sector subsidized by the Ministry of Health and Welfare.

- Treatment of human waste using biotechnology; application of ultra filter membranes to the separation of sludge as an advanced treatment process
- Research on decreasing the volume of incineration residue of municipal solid waste by recycling
- Research on establishing management standards for hazardous industrial waste
- Research on developing technology for remediation of contaminated disposal sites.

Research Projects

- Study on the proper management of hazardous waste
- Study on wastes which are difficult for municipalities to dispose of

- Research on reducing the emission of methane from landfill sites
- Study on the management of hazardous wastes which should be assigned as specially controlled wastes
- Study on disposal methods of construction and demolition waste and utilization of reformed materials
- Research on developing new landfill technologies

Technology Evaluation

WARF has a registration system for enterprises which can measure dioxins. An enterprise is registered after checking its reliability in terms of precision of measurements and safety management, etc. 20 enterprises have been registered so far. Also, WARF has a technology evaluation system for waste disposal for private companies to promote the diffusion of the most advanced technology.

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Journal of the Japan Society of Waste Management Experts Vol. 4 No.3 (July 1993)

The volume contains the following technical papers. (Written in Japanese with English abstract)

Vol. 4 No. 3

An Experimental Study of Microorganic Aerobic and Anaerobic Decomposition of Seaweed
by Ikuo SOUTA, Nobuo AWAJI and Seiti KANEKO

Leaching Properties of Contaminates in a Solid Waste Landfill Layer
by Namhoon LEE, Tetsuya KUSUDA, Mitsuru SHIBAGAKI, Takayuki SHIMAOKA and Masataka HANASHIMA

Treatment of Wastewater in a Dredged Soil Waste Disposal Site, Using Sand Filtration and Higher Organisms
by Isao FUKUNAKA, Zensuke INOUE, Kazuhiro TAKAMIZAWA, Toshihiko HASEBE, Miyoji KONAE, Kiyoshi HATANO, Takao TAKEMIKA, Hiroshi IIDA and Syoichi MORI

Characteristics of Unsaturated Water Flow and Measuring Method of Unsaturated Hydraulic Conductivity in Sanitary Landfill Layers
by Nobutoshi TANAKA and Toshihiko MATSUTO

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