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THE JAPAN SOCIETY OF WASTE MANAGEMENT EXPERTS

**Dear Waste Management Experts
A Happy New Year, 1999 !
JSWME President, Katsumi Yorimoto**



At the arrival of 1999, the next century is only two years ahead. The question we have to pose to ourselves is not what kind of world is awaiting us, but rather what kind of world should we create for the next century?

Symbolized by World War I and World War II, the 20th century is said

to be the century of war. Hence, the first priority for the 21st century ought to be the establishment of global peace. In the 21st century, many countries will most likely be troubled with a rapidly aging society. It is, therefore, imperative that we establish a society where the aged can enjoy equal working and health privileges, and be able to contribute to society as a whole.

It has been often pointed out that in the 20th century, Japan focused on the centralization of administrative power. If so, we should continue to endeavor changes, exercise decentralization and establish autonomous governments. In the 21st century, the further involvement of the citizens including various citizens' groups and the private sector in public activities is expected. We, therefore, ought to establish a social mechanism that would facilitate such involvement. In addition, we should also aim for sustainable development, bearing in mind the importance of having a harmonious relationship with the natural environment. In this regard, the need to review current social mechanisms, e.g., mass production, mass consumption, mass discharge, and lifestyle, is frequently advocated.

Of the above mentioned issues, the Japan Society of Waste Management Experts is most concerned with the last point. In terms of solid waste management, extensively controlling mass production, mass consumption, and mass discharge would remarkably reduce waste amount. This is, however, easier said than done. At present, Japan is undergoing a recession. It is believed that recovery can be attained only through increased production and consumption, hence the huge tax cuts and increased public investments. Accordingly,

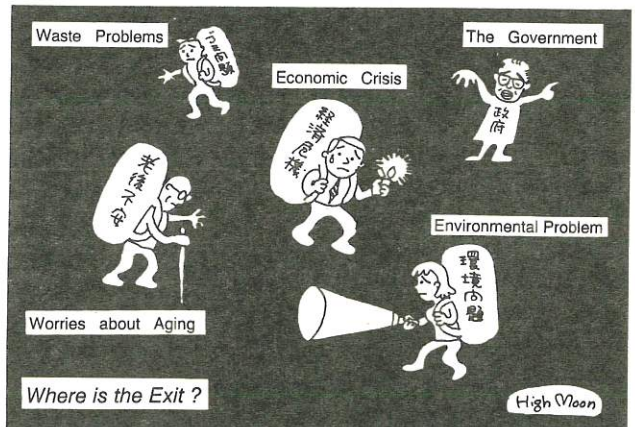
every Japanese could expect signs of economic recovery by the end of this year. This is not favorable for solid waste management, however, as improvements in production and consumption also mean increase in waste amount. However vital economic recovery is to us, it must never be a simple return to mass production, mass consumption, and mass discharge, in consideration of waste problems, the natural resources and the environment.

In order to overcome this problem, a social mechanism that would enable economic recovery should be established, fully taking into account increase in waste amount and the reduced use of raw materials for production. Accordingly, the creation of a "closed loop society" would be of the utmost importance.

In the creation of a "closed loop society", the following three points are significant issues to be addressed.

- 1) To make all possible efforts to reduce the amount of waste generated during production and consumption, and through waste management.
- 2) To thoroughly recycle waste, the generation and discharge of which is unavoidable, even after the efforts in 1) above has been made.
- 3) To minimize adverse environmental impacts that may result from the implementation of 1) and 2).

As an interdisciplinary science, waste management in the 21st century should focus on the creation of a closed loop society. The Japan Society of Waste Management Experts should, therefore, conduct researches on various relevant fields and apply the achieved results in the aim to build a closed loop society.



* When are we supposed to see the light at the end of the tunnel?

by Courtesy of Prof. Hiroshi Takatsuki
(translated by JSWME, taken from Monthly "The Waste", Dec. '98)

Japanese Municipalities on the Move (12)
- Success of Composting in Japan, Nagai City -

Nagai City is a small city in Yamagata Prefecture in the northern part of Japan. It has a population of approximately 33,000 and is blessed with a rich natural environment that is made up of beautiful mountains, rivers, and green parks.

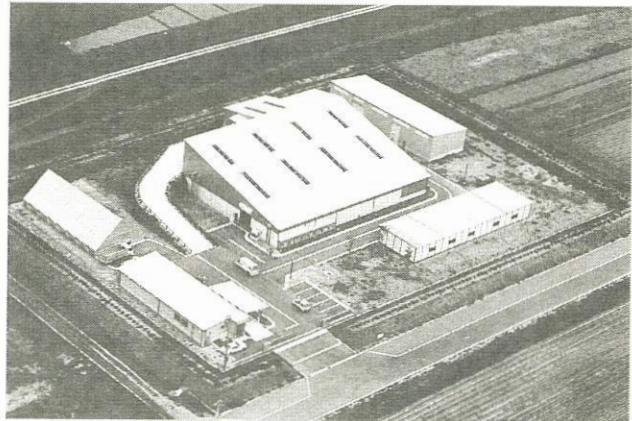
With the implementation of the "Rainbow Plan", the city is currently the focus of national attention. The plan aims to introduce a cycle system that will show the relationship between the kitchen and the farm. Prepared with the participation of the residents, the plan is implemented with the support of the municipality and is fast gaining popularity nationwide. To support the plan, the municipality constructed a compost plant where kitchen waste (organic waste) is transported to for compost production. The compost produced is used as a soil conditioner in farms cultivating agricultural products which are later purchased by households for self-consumption. Accordingly, it may be said that agriculture originates from the kitchen.

This plan was originally established in 1988 by the committee (97 members) on city design for the formulation of basic city planning policies. The agricultural group in the committee proposed a plan, which includes the recycling of kitchen waste, to create a comfortable city. In June 1991, this proposal started to materialize under the name "Rainbow Plan" under the hands of the newly established organization, Rainbow Plan Committee. The Rainbow Plan covers the construction and operation of a compost plant, and the certification of organic agricultural produce. Before the compost plant became fully operative, hundreds of meetings were held with the voluntary participation of the citizens. Currently the Rainbow Plan Executing Committee, which is equally made up of residents and municipal officials, is responsible for decision making and its implementation.

The compost center was completed on 30 November 1996 at an overall cost of 385.22 million Japanese Yen; operation commenced in February 1997. The amount of raw materials transported to the plant in 1997 was 1,255 tons for kitchen waste, 448 tons for manure, and 424 tons for rice hulls. Approximately 600 tons of compost were produced in 1997. As for compost quality, the carbon by nitrogen ratio was constant at around 14 to 15 (less than 20 is favorable). Since the demand for compost was more than expected, the supply was not able to meet the demand in spring 1998. The monthly sales of compost has been steady because it is being widely used in agricultural cultivation and in backyard gardens as well.

Although the plan was not intended for waste management, its implementation has resulted in a 33% reduction in the amount of biodegradable household waste generated in 1997, and consequently curtailed

solid waste management expenses to 28 million Japanese yen. The current focus on global warming, dioxins, and landfill problems have led groups related to cleansing activities to concentrate on recycling organic waste without incineration.



Overall view of the compost plant

(by Minoru Iizawa, Nagai City)

Universities and Research Institutes concerned with
Waste Management in Japan (1)
- Fukuoka University Institute for Resource Recycling
& Environmental Pollution Control System -

Fukuoka University Institute for Resource Recycling & Environmental Pollution Control System established in spring 1998 has finally launched into full-scale operation.

Thirty 10-ton trucks of solid waste, residual ash from incinerators, compost, etc., were hauled to the Center and then thrown into three pilot tanks using an unloader. In order to grasp the initial material input conditions, sampling and measurements were conducted very precisely. This demanding and meticulous experiment was executed for four days from 24 August 1998.

Waste amount is believed to increase in proportion to improvements in standard of living. The relationship between technological development and environmental conservation can be best described using the evolution and symbiosis of living things as an example. Heavy inclinations toward development in the twentieth century, however, have led to various environmental problems such as the ozone hole, dioxin, disposal sites, endocrine disruptors, etc.

It is said that hundreds of disposal sites in Japan are issues of dispute between the residents who want to keep away from waste and the municipalities and private companies responsible for waste management. Despite judicial intervention, the essence of the problem remains unsolved.

As in groundwork and clinical trials in the field of medicine, corroborative research should be carried out to solve environmental problems. Demonstrating specific clear-cut methods to control and dispose of leachate

from the disposal site as a means of satisfying environmental standards would highly likely convince the residents and the municipalities. There are, however, few researchers on solid waste in Japan as people would naturally prefer to work in a clean air-conditioned room than doing research in sites filled with waste. Fukuoka University, which has been conducting research on solid waste with confidence and foresight for the past thirty years, is a pioneer in this field. Many private companies and government entities nationwide seek the advice and guidance of Professor Hanashima, the leader of the research group.



right: Prof. Hanashima
center: Minister for the Environment, Mr. Manabe
left: Mayor of Kitakyushu City, Mr. Sueyoshi

The Environmental White Paper 1998 by the Environment Agency has a seven paged report on the Environmental Industrial Complex Project in Kitakyushu City and this center as one of the core corroboration research centers nationwide. In March 1998, large companies started to construct pilot plants within the vicinity of the Center which up till then was the only building in a wide field. The 16ha around this center will very soon become an environmental test park.

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National Environmental Research and Training Center Project in Mexico

Solving the environmental pollution problems in the urban area of Mexico is a serious national concern. Japan has extended assistance by conducting development studies relevant to air pollution. In view of the lack of human resources for tackling environmental measures, the National Environmental Research and Training Center (CENICA) Project (Phase I) was devised. It was carried out from July 1995 and completed within a period of two years with the technical assistance of Japan International Cooperation Agency. Technical assistance was extended in the formulation of air pollution control measures and the

management of hazardous waste.

The Mexican government invested a total of about 300 million yen for the construction of the center within the compound of the National Autonomous Metropolitan University (UAM) in Iztapalapa. Based on the results of phase I, the second project phase (3 years) started in July 1997. This phase involves full-scale technical assistance.

The automatic monitoring station established in CENICA for air pollution control was operated from December 1997 for the collection of data on the concentration of air pollutants and meteorological information. With reinforcements in counterpart staff (5 more from October 1998) and electrical installations, almost all laboratory equipment donated by the JICA became operative. As for air quality surveys, several projects that involve outdoor surveys to assess individual exposure and the characteristics of suspended particles and hydrocarbon are being carried out at present. Seminars on air pollution were held in February and July of 1998 with the cooperation of a number of organizations related to environmental management.

A laboratory for the analysis of the characteristics of hazardous waste was established. Equipped with the necessary facilities (donated), the laboratory is ready for the conduct of research and training activities for the pursuit of technical transfer.

CENICA has also participated in the formulation and revision of the official norms of Mexico regarding hazardous waste classification, infectious waste, incineration techniques, by collecting relevant technical information and data, and offering technical guidance and assistance. It is also mainly in charge of the formulation of the norms for incineration. It also continues to conduct studies on waste management and the management standards of various countries.

From February to April 1998, CENICA held a course on hazardous waste management (methods adopted in Japan in particular) for executive officials of the General Directorate for Materials, Waste and Risky Activities, National Institute of Ecology, and participated in international seminars on waste classification and incineration and workshops on waste characterization sponsored and cosponsored by National Institute of Ecology.

To make proposals in the management aspect and in order to understand new developments in the administrative structure of CENICA, Japanese experts and the main staff of CENICA agreed to hold monthly meetings to discuss current conditions and promote closer ties. At present, the Japanese experts act as chief advisor, coordinator, experts in air pollution control and hazardous waste management. Internal and external committee meetings are also regularly held between CENICA and other relevant government and non-governmental institutions.

Transfer of techniques relevant to air pollution control and hazardous waste management are actively carried out for the counterparts of CENICA. Some gave lectures even at an university. This steady human resource development approach is expected to produce excellent personnel that could contribute to the improvement of environmental policies in Mexico.



Waste Management Course for Executive Officials
(by Haruo Matsumura, JICA Expert of CENICA Project)

International Session of JSWME

In accordance with the agreement for cooperation, JSWME and the Korea Solid Wastes Engineering Society (KSWES) held their fourth English Session during its 9th Annual Conference in Nagoya on November 28. The first session was held in Seoul in May 1997, the second in Kawaguchi City, Japan, in November 1997, and the third in Seoul in May 1998.

The session was divided into four sub-sessions: I) Waste Management Policy and Planning (3 papers), II) Waste Treatment Technology (6 papers), III) Incineration Technology, Emission and Control of Dioxins (5 papers), and IV) Landfill, Groundwater and Soil Pollution, etc. (5 papers). Each sub-session was co-chaired by a Japanese and a Korean. Among the 19 papers, nine were by members of JSWME while the remaining ten were by KSWES members. While both Japanese and Koreans did presentations during Sessions III and IV, presentations for Session I were solely made by the Japanese side and Session II by the Korean side. The holding of different presentations may be attributed to the different research interests of both countries, a point that is quite interesting, although there is a need to compare the themes presented by both parties to know for sure.

About forty to fifty people attended the Session, where Q & As and discussions were actively done. In contrast to last year's English Session which simultaneously held two sub-sessions, a lot of people remained in the specially prepared room for the duration of the International Session this year. Thus, the Session in English this year has turned to be particularly successful

as the name "International Session" implies that the session is designated to provide non-Japanese researchers inside and outside of Japan with opportunity to make presentations on waste management.

In May 1999, the two societies will hold their fifth English Session in Korea. For those interested in attending the English Session in May 1999 in Korea, please contact either the JSWME or KSWES secretariat. We are also looking forward to seeing everybody in the sixth English Session in Oomiya-city, Japan, in November 1999.

(by Hiroki Hashizume)

Journal of the Japan Society of Waste Management Experts, Vol. 9, No. 7 (November 1998)

A recent issue of the Journal of JSWME contains the following articles. The articles are written in Japanese, but the abstract is in English.

Vol.9, No.7 (November 1998)

Paper

Influence of Incinerator Ash on Calcium Scale Formation in Landfill Sites

by Yukio Noma and Akiko Kida

Breakthrough of Biological Activated Carbon during Continuous Treatment of Photo-Processing Waste

by Bin-Le Lin and Masaaki Hosomi

Characteristics of Pyrolytic and Burnt Gas for Pulverized Refuse-Derived Fuel

by Kunihiko Namba, Kyoji Kimoto, Eiji Fujita and Tsuyoshi Nakajima

Biodegradation of Avicel-cellulose under Sulfidogenic and Methanogenic Conditions in the Municipal Solid Waste Landfill: Batch Experiments

by Seog Ku Kim, Saburo Matsui, Sandeep Pareek and Yoshihisa Shimizu

The Study of Beginning "Recycle Market" at Hiroshima University and its Legal, Financial, Personnel and Environmental Aspects

by Nobuyuki Yoshida and Kohji Hayase

Note

Treatment of Fermentation Stillage of Traditional Liquor SHOCHU by Low-temperature Catalytic Gasification

by Tomoaki Minowa, Shigeki Sawayama and Tomoko Ogi

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