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**Strategy of separation and treatment on disaster waste
~Report of the JSMCWM task team's activities~**

The March 11 earthquake and tsunami, "Three-eleven" was major news for various reasons in Japan and around the world. We are busy in treating enormous amounts of disaster waste at the moment. The earthquake and tsunami has definitely shaken the values of the Japanese people. It will be a turning point in the near future for establishment of a 3R or material cycle society. We appreciate all of the messages of condolence and encouragement from foreign countries right after the incident. We will inform them of our efforts and keep striving move ahead with discussions to bring about a paradigm shift as soon as possible.

Summary of JSMCWM task team

The first step of recovery and reconstruction is probably removal of disaster waste (rubble). There were already many opinions among young researchers of JSMCWM to establish a task team which tackles disaster waste by the 14th of March. The Task team on Disaster Waste Management and Reconstruction was established after discussions and preparations within the society. Not only researchers but private engineers, citizens and

personnel related to local authorities; with a total of more than 144 having joined the task team (as of 15th June, 2011). Active opinion and information exchange has been made through the website (<http://eprc.kyoto-u.ac.jp/saigai/>) and the mailing list.

The objectives of establishing the task team are as follows:

- 1) Formation of the information platform for disaster waste related information;
- 2) A wide social network for countermeasures of disaster waste;
- 3) Derivation of basic knowledge for academic records of disaster waste and renewal of its countermeasure policies.



Enormous damage of the tsunami



Tsunami sediment covered the town (Ishinomaki City)

Background of dispatch to the disaster zone

A few weeks after the quake, entering the disaster zone was considered difficult due to the level of damage, lack of transportation and instability of the Fukushima nuclear plant. However, Kyoto City, especially its environmental policy division had sent waste collection vehicles and trucks and groups of 20 personnel on 1-week shifts to Sendai since the day of earthquake. The task team negotiated with Kyoto City so that it could join their group, and Sendai City also accepted our support. On 25th of March, the 3rd group of environmental policy division of Kyoto City and three members of the task team including the author were dispatched to Sendai.

The task team packed a great deal for two weeks including food, sleeping bags and personal belongings because they thought “volunteers must not be a burden on those affected by the disaster.” Even though, it turned out that a few days after the task team’s arrival, many shops opened and most supplies available.

Activities in the disaster zone

The author worked hard to support the recovery—rather than surveying and researching—such as visiting affected areas and collecting information, making a manual and forming a network of contacts from 25th of March until 9th of April.

The manual version 1 was completed on 4th April after one week of work. Soon after that several requests for support had been received, and the author felt that our work was finally making an impact.

State of the disaster zone

The first impression of the disaster zone was the enormity of the tsunami damage. Despite being forewarned, seeing the destruction first hand was mind-blowing. After visiting a number of sites, the scale of the calamity was found to vary vastly according to location.

This was the case for the scale of the disaster, but moreover, the recovery was in various stages of progress. Sendai City, our activity base, was leading the

way in dealing with disaster waste as the only government designated city in the Tohoku area. On the other hand, many of the fishing villages in Iwate Prefecture had their administrative functions completely wiped out by the tsunami. Lifesaving was continuing there and dealing with the disaster waste had not even begun.

Making the manual

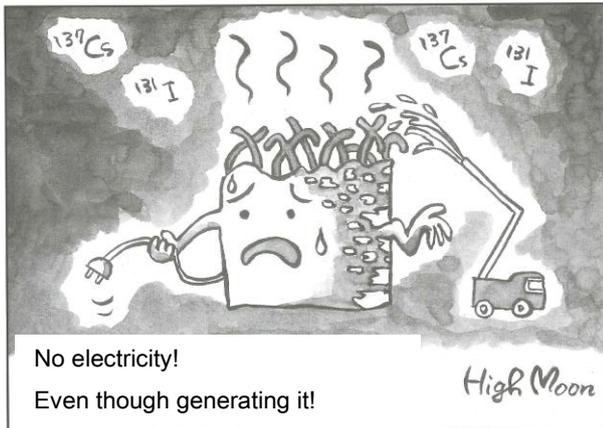
One of the major tasks for the task team in the field and upon our return was making the manual “Strategy of separation and treatment of disaster waste”. Of the many reasons for making the manual, the two points below are the main ones.

- There was a need to consolidate knowledge and wisdom to tackle the previously inexperienced sheer volume and quality of tsunami waste.
- Sharing the good practices and issues in advanced local authorities would contribute overall to the reconstruction, and it would help other authorities that are behind in treating the waste.

The process of making the manual was as follows. First was to decide the contents of the manual based on the discussions in the field and through the mailing-list. Second, each part of the manual had a person responsible for it. The drafts from them were discussed through the mailing-list and were edited to reflect these discussions and compiled into one. All works were done voluntarily. Version 1 was released on 4th April. Version 2 which covered the whole process of waste management including treatment and final disposal was able to be released on 30th April. All pages of the manual are disclosed on the website. An abstract English version will be made soon.

The contents of the manual and latest activities and issues will be introduced in the next issue of this newsletter. There are a number of problems to be solved. We would like to ask for knowledge support from members inside and outside of Japan.

(Misuzu Asari)



Author: This is the black humour.

**Toward safe and efficient
municipal waste recycling in China
JICA Technical Cooperation Project “the Project
for Promotion of Municipal Solid Waste Recycling”**

In the process of rapid industrialization and urbanization, the generation of solid waste has been rapidly increasing in large cities in China and simultaneously the negative impact on the environment has been also growing. Many cities have a problem of the lack of proper waste management system and comprehensive waste recycling system. Existing systems tend to be inefficient as well as the reuse of kitchen waste with inadequate treatment has a potential of safety problem for people’s health. In fact, the pollution caused by inappropriate waste management gives negative impacts on public health and neighbourhood environment.

Under these circumstances, the Government of China, in the 11th Five-Year Plan, shifted its policy focus on “strong economic growth” to “harmonious, sustainable and stable growth” and showed strong commitment to solve these problems by promoting the reduction of the use of virgin materials and the recycling available resources. In addition, the Recycle Promotion Policy enacted in January 2009, provides the principles to increase the recycling of municipal waste by establishing the waste separation and collection system and construct the recycling facilities in each city. Thus, the

establishment of proper recycling system of municipal waste is recognized as an important issue for creating circular economy in China.

Accordingly, the governments of Japan and China agreed to conduct a technical cooperation project namely “the Project for Promotion of Municipal Solid Waste Recycling”, which aims at supporting the realization of Circular Economy in China. The implementation organization of the Project in China is the National Development and Reform Committee (NDRC) which is comprehensively in charge of national economic and social development policy and implementation in China. The project purpose is “to promote the establishment of national policies and laws for municipal solid waste recycling” with the project period of about four years from November 2010 until February 2015. In the Project, not only promoting environmental conservation by waste recycling, several objectives are highlighted, such as cooperative research and interaction between Chinese and Japanese researchers and experts, gradual formalization of the informal sector related to waste management, and promotion of private sector activities in the field of waste recycling.

Based on the request of the Chinese side, three target wastes of the Project was decided as food waste, package waste and used tires. Under the project purpose, there are two outputs. Output 1 is to conduct national policy research related to the establishment of municipal waste recycling system. Output 2, targeting four target cities, Jiaxing, Qingdao, Guiyang and Xining, is to support to promote proper management and recycling of municipal waste at the local level. To maximize the project outcomes, those two outputs are planned to be correlated and expected to give feedbacks each other.

Output 1 “national policy research” is composed of four research themes on promotion of waste recycling such as 1) integrated municipal solid waste management, 2) food waste, 3) package waste, and 4) used tires. Working groups composed of Japanese and Chinese researchers in

each research theme will discuss the each topic and will finally complete a report of national policy research.

Output 2 “study and pilot projects in target cities” is to conduct studies on the present condition of waste generation, management and recycling, to formulate a plan of promotion of waste recycling, and to implement pilot projects to promote recycling of target wastes in each city. And the outcomes of the activities will be shared to the national policy research to make practical recommendations for national policies. Actual activities in each target city are going to be carried out with the involvement of related sections of the local governments, citizens, related private sectors, Chinese researchers and the Japanese expert team.

As the first activity of the Project, at JSMSWM’s session in November last year, Chinese counterparts of the Project participated in an interactive session between Japan and China on material cycle societies and experts of both sides discussed relevant issues. At various stages of the Project, it is planned to set opportunities to exchange opinions among Chinese and Japanese experts to make the Project more effective and to share the both countries’ experience for the better future in Asia.

(Akiko Sanada)

**Report from the international conference of
Integrated Solid Waste Management,
in Galapagos**

The international conference for integrated solid waste management in protected natural areas and islands was held in the city of Puerto Ayora, Santa Cruz Island, Province of Galapagos, Ecuador, on 27, 28 and 29 April, 2011. (Host: Municipality of Santa Cruz; Cooperation: International Waste Working Group (IWWG); and an Ecuadorian company EARTHGREEN S.A.)

The program of the conference was composed of lectures (day 1 to the morning of day 3) and a technical tour (afternoon of day 3). In the technical tour, the

participants visited a recycling center in Santa Cruz to learn of its activities. The author was an intern of the secretariat of the conference for two months.

Various themes were discussed such as waste separation at source, microbial waste decomposition, proper final disposal of waste, environmental education, and actual practices in various countries of participants, aiming to raise the capacity of and encourage information exchange among those in charge of waste management at municipalities. Experts from various countries (Ecuador, Argentina, Spain, United States, Switzerland, Colombia, Japan, Italy, Dominican Republic and Mexico) were invited. From Japan, Kunitoshi Sakurai of Okinawa Univ. and Yasushi Matsufuji of Fukuoka Univ. participated as experts, and Tomoe Kumagai as secretariat volunteer. JICA’s projects and improvement technology for landfills by the Fukuoka method were reported by the Japanese experts. Most of the 120-odd audiences were environmental related workers in Ecuador.

Ecuador has 23 national parks and nature protection areas, and is rich in natural environment such as the Amazon, Andes and Galapagos in her 256,000 square kilometers of land. In near future management of water supply, sewage and waste is important for preserving these natural environments and sustainable development of tourism.

Participants listened to presentations and eagerly asked questions after the presentations. Many of them were quite active exchanging information during the coffee break and gaining specific contacts with the aim of initiating projects. In this way, participants utilized this opportunity enormously to solve problems they were facing at their work places.

A corner of the conference room had a display of local Santa Cruz crafts and souvenirs made from recycled materials. These were well made souvenirs for tourists, with the added value of being environmentally friendly.

The city has been experimentally producing soaps and candles using waste cooking oil.



Local souvenir: turtle made by glass cullet

As this was the first time for the host to hold this kind of conference, some of participants may have felt inconvenienced by some minor hiccups, while some had to cover their own transportation and accommodation expenses. Some were unable to participate due to economic reasons, even though they might have been in need of support. However, the secretariat is planning to hold this kind of conference on an annual basis as they have received good feedback. It is expected that Japanese technology will be transferred to the Galapagos Islands, the second home of the author.



Conference participants

Despite a few incidents—such as a sudden power cut—the event had a Latin American peaceful atmosphere. Many of the participants also enjoyed the sights of the Galapagos over the weekend. All were back to their work place and actively exchanged information

and pictures after the conference. It is expected that the level of the next conference will be raised as a result of the many new activities by participants from various areas and countries motivated by this conference.

(Tomoe Kumagai)

Report of Korea Society of Waste Management, spring 2011

The 15th international session between Korea and Japan, *Special Symposium for Korea and Japan* was held by the Korea Society of Waste Management (KSWM) on 12th May, 2011. The venue was at Kangwon National University, about one and a half hours from Seoul by subway, in a city famous for the drama *Winter Sonata*.

In the beginning of the special symposium, the president of KSWM, Dr. Sung-Keun Bae expressed his condolences for the victims of the recent earthquake and tsunami in his address, and a silent prayer was held by all of the participants. KSWM pledged 5,050,000 won as research funds for the Japan society's (JSMCWM) Task Teamon Disaster Waste Management and Reconstruction.

The president, Dr. Shin-ichi Sakai expressed deep appreciation to that offer and reported the background of the task team's establishment and the state of its activities. It was also announced that five members of KSWM would join the task team. The executive board member, Dr. Kazuo Nakamura also offered one million won to the task team's activities and thanked KSWM for its support at the end of his speech.

A joint academic presentation was conducted in a hybrid poster sessions. There were 27 presentations, of which, 16 were from Japan and 11 from Korea. They covered various topics, such as biogas, waste water treatment, incineration, recycling and transportation greenhouse gas emissions.

The special symposium, *low-carbon green villages (biomass towns)* was conducted after the poster sessions. From Korea, Dr. Jong-Yeon Lee of Korea Environment

Co. gave a presentation on *status of low-carbon green villages in Korea* and Dr. Sung-Soo, Kim of Korea research institute for local administration on *comparison of the Korean low-carbon green villages project to German bio-energy villages project*. From Japan, Dr. Kazuo Nakamura of the Advanced Scientific Technology & Management Research Institute of Kyoto (ASTEM) gave a presentation on *bio-fuel and biogas utilization challenges in Kyoto city*, and Dr. Kazuhiro Takamizawa of Gifu University on *biomass towns, as a tool for establishing low carbon society*.

Dr. Jong-Yeon Lee introduced the project, *Low Carbon Green Villages*, which is utilizing natural energy such as biomass, wind and solar power in Korea. There is a plan to supply 3.17% of the nation's energy from waste-to-energy and bio-energy in Korea, with prohibition of ocean dumping from 2012, depletion of fossil fuels and climate change due to increasing greenhouse gasses. This project is planning to invest 5 billion won (400 million yen) between 2010 and 2013 (3 years). It is to target small communities of 100 to 1000 people. On the other hand, there were some areas of concern such as insufficient project period and institutional, technical and economical aspects.

The presentation comparing Korean and German green villages by Dr. Sung-Soo Kim was based on research on bio-energy villages in Germany. Several features of economical feasibility were introduced such as tax breaks for bio-energy and high purchase price for surplus energy by power companies in Germany.

The presentation by Dr. Kazuo Nakamura was about practical uses of bio-fuels and biomass in Kyoto's environmental model city initiative. Biodiesel production with citizen collaboration in the collection of used cooking oil and its utilization for waste collection vehicles and city buses have been put into practical use in Kyoto, ahead of the Kyoto conference to prevent global warming. Biogas generation by high efficiency methane fermentation of organic wastes was tried; and

feasibility studies toward commercialization of methanol technology by gasification of woody biomass, a joint facility for gasification, methanol generation and pellet production facility, were also conducted. In addition, the future vision for biomass utilization in Kyoto City and its effectiveness for CO₂ reduction were introduced.

Dr. Kazuhiro Takamizawa introduced guidelines for planning biomass towns in Japan, and easily understandable cases of revenue and expenditure for CO₂ reduction by various types of biomass such as sugar cane, cellulose, bamboo, corn and grass.



KSWM president Dr. Bae (right side) presented the research funds to the president, Dr. Sakai.

(Mamoru Inoue)

Conference Information

SARDINA 2011 13th International Waste management and Landfill Symposium

Oct. 3-7, 2011 in Cagliari, Italy

<http://www.sardiniasymposium.it/sardinia2011/>

ISWA World Congress 2011

Oct. 17-20, 2011 in EXCO, Daegu, Korea

SWAPI (Society of Solid Waste Management Experts)

Oct. 18-19, 2011

<http://www.iswa2011.org/>

JSMCWM International Symposium

Nov. 3, 2011 in Toyo University, Tokyo, Japan

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

**Material Cycles and Waste Management Research
Vol. 22, No.2 (March, 2011)**

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Economic Development and Regulations on Transboundary Movement of Hazardous Waste

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Current Members of JSMCWM as of May 31, 2011	
Regular Members	2,550
Fellow	24
Senior	6
Honorary member	7
Students	260
Public Institutions	90
Supporting companies	121
NPOs	6
Individual	1
Total	3,064

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