

Outline of Kick-off meeting on Practical Research and Education of Solid Waste Management Based on the Partnerships among Universities and Governments in Asia and Pacific Countries

PROGRAM

Date: 13:30-17:30, July 23, 2010

Venue: Meeting Room of the Graduate School of Natural Science and Technology Building

- 13:30-13:35 **Opening Address** Prof. Hirofumi Abe (Okayama University)
- 13:35-14:00 **Objectives and Contents of the Practical Research and Education program**
Prof. Takeshi Fujiwara (Okayama University)
- 14:00-14:10 ***Developing Disinfection & Volume-reduction Technologies for the Composting of the Waste with high Moisture Content***
Prof. Yukitaka Kimura (Okayama University)
- 14:10-14:20 ***Development of Technologies for the Reutilization of Agricultural and Forestry Waste***
Assoc. Prof. Md. Azhar Uddin (Okayama University)
- 14:20-14:30 ***Reutilization of Food Waste for Agricultural Applications on Pacific islands***
Prof. Mari Marutani (University of Guam) and Assoc. Prof. Yoshiro Kishida (Okayama University)
- 14:30-14:40 ***Development of Indicators for the Establishment of a Sound Material-cycle Society***
Assist. Prof. Takehito Ujihara and Prof. Hirofumi Abe (Okayama University)
- 14:40-14:50 ***Evaluation of the Performance of the Final Disposal Facility of Waste: Enhancement of the Dielectric Monitoring Method***
Prof. Yuji Takeshita and Assoc. Prof. Mitsuru Komatsu (Okayama University)
- 14:50-15:10 **Discussion and Comments**
- 15:10-15:30 **Tea Break**
- 15:30-15:40 ***Development of a Standardized Monitoring System for Promoting Adequate Landfilling in Asian Countries***
Assoc. Prof. Toru Iwata (Okayama University)
- 15:40-15:50 ***Water Quality Survey on Heavy Metal Pollution from Waste Disposal***

- Facilities in Pacific Countries***
- Assoc. Prof. Hideaki Nagare (Okayama University)
- 15:50-16:00 ***Waste Survey and Establishment of Solid Waste Management in Palau***
Prof. Takeshi Fujiwara (Okayama University) and Mr. Menkur W. Rechelulk (Ministry of Resource and Development, Palau)
- 16:00-16:10 ***Waste Survey and Establishment of Solid Waste Management in Guam***
Prof. Takeshi Fujiwara (Okayama University) and Assoc. Prof. Mohammad Golabi (University of Guam)
- 16:10-16:20 ***Political Effect Analysis on Waste Management and 3Rs Promotion in Vietnam***
Assoc. Prof. Yasuhiro Matsui and Nguyen Phuc Thanh (Okayama University)
- 16:20-16:30 ***Status of Municipal Solid Waste Collection in Hanoi City and Future Needs***
Assoc. Prof. Nguyen Thi Kim Thai (Hanoi University of Civil Engineering)
- 16:30-16:40 ***Waste Recycling and Resource Recovery in Hue City at a Glance***
Assoc. Prof. Pham Khac Lieu and Mr. Tran Ngoc Tuan (Hue University)
- 16:40-16:50 ***Evaluation of the Policy effect of the Pay as You Throw (PAYT) systems on Household Solid Waste Reduction and the Potential Environmental Impacts- A Case Study in Taiwan***
Assist. Prof. Yu-Chi Weng (Okayama University)
- 16:50-17:10 **Discussion and Comments**
- 17:20-17:30 **Closing Remarks** Prof. Hirofumi Abe

SUMMARY

This Kick-Off Meeting was held as the first official event of the partnership project on education and research program “Practical Research and Education of Solid Waste Management Based on the Partnerships among Universities and Governments in Asia and Pacific Countries”. The meeting’s participants consisted of 11 members of Okayama University who were engaged in the research themes of the project and invited experts from collaborator countries; such as China, Thailand, Vietnam, Malaysia, Indonesia, Guam, and Palau, who introduced their research themes and exchanged opinions with each other.

Firstly, Prof. Hirofumi ABE, Dean of Graduate School of Environmental Science, Okayama University, presented the opening remarks. And, secondly, Prof. Takeshi FUJIWARA, Vice Director of Solid Waste Management Research Center, explained that the research period of this project was from FY2010 to FY2012, this project intended to promote the research activities aimed to solve waste problems by the collaboration among universities, institutes and administrative bodies in Japan and Asian countries, the project research focused on technical supports and international practices, and the schedule of event and expected results. He asked for the further cooperation to the relevant people. Then, the project members introduced the outline of their research themes and exchanged opinions with the participants.

Professor Yukitaka KIMURA of Okayama University made his presentation entitled “Developing Disinfection & Volume-Reduction Technologies for the Composting of the Waste with High Moisture Content”, and introduced the outline of experiment using Superheated Steam as a volume reduction and pre-pasteurization methodology for the waste with high water content, and the experimental results for Asparagus.

Associate Professor Azhar Uddin of Okayama University made his presentation entitled “Development of Technologies for the Reutilization of Agricultural and Forestry Waste”, and introduced the outline of the thermal transformation processes to produce char (bio char), synthesis-gas (H₂ and CO) and bio oil from agricultural and forestry wastes. He explained the various types of biomass and its utilization, the outline of pyrolysis process of biomass, the definition of biochar and the functions including bio sequestration or atmospheric carbon capture and storage, the efficiency of carbon conversion from biomass to biochar related to the type of plant matter, The efficiency of biomass to biochar dependent on process parameters of pyrolysis, the quality of biochar dependent on the type of feedstock and process parameters.

Professor Mari MARUTANI of Guan University and Associate Professor Yoshiro KISHIDA of Okayama University made their presentation entitled “Reutilization of Food Waste for Agricultural Applications on Pacific Islands”, and introduced the current status of kitchen waste management in Guam, kitchen waste heated for 20 minutes at 100°C to use for pig feeding, BDF production, and the outline of telephone survey result on waste cooking oil. They also introduced the research plan on the waste generation from restaurants and hotels, the current status of pig farmers, and experiments on feed production from food waste

Assistant Professor Takehito UJIHARA and Professor Hirofumi ABE of Okayama University made their presentation entitled “Developing of Indicators for the Establishment of a Sound Material-Cycle Society”, and introduced the concept of

Ecological Footprint value, existing approaches using the EF for urban planning in Tsuyama city, and explained the research plan in Shanghai.

Professor Yuji TAKESHITA and Associate Professor Mitsuru KOMATSU of Okayama University made their presentation entitled "Evaluation of the performance of the Final Disposal Facility of Waste Enhancement of the Dielectric Monitoring Method", and explained the non-destructive measurements of unsaturated water flow by using ground-penetrating radar, and site characterization of waste disposal sites for geotechnical engineers.

Associate Professor Toru IWATA of Okayama University made his presentation entitled "Development of a Standardized Monitoring System for Promoting Adequate Landfilling in Asian countries", and explained that limited data was acquired and data monitoring technique was not standardized, pollutants and greenhouse gases were possibly emitted in large quantities from landfills in Asia. He also introduced his goals to suggest to simple and inexpensive monitoring system for atmospheric and meteorological data acquisition, to apply and install of the system in off-shore investigation sites, and to give the educational training of competent people for the adequate management of future landfills and informative cross-fertilizations. He explained the past experience for measurement and his research plan.

Associate Professor Hideaki NAGARE of Okayama University made his presentation entitled "Water Quality Survey on Heavy Metal Pollution from Waste Disposal Facilities in Pacific Countries", and explained the research plan on the field surveys and water quality analysis for heavy metals and phosphorus in leachate from landfill and fish body, and the estimation of risk and evaluation of feasibility on P recovery in pacific islands such as Guam, Palau and Fizzy.

Professor Takeshi FUJIWARA of Okayama University and Mr. Mengkur Rechelulk of Republic of Palau made their presentation entitled "Waste Survey and Establishment of Solid Waste Management in Palau", and explained the outline of waste management and 3R activities in Palau, the modeling and evaluation on separate collection of household solid waste, the questionnaire survey conducted in State of Airai, and the research plan for establishing sound material cycles societies in island countries.

Professor Takeshi FUJIWARA of Okayama University, Associate Professor Mohammad Golabi and Associate Professor Kirk Johnson of Guam University made their presentation entitled "Waste Survey and Establishment of Solid Waste Management in Guam", and explained the history of inter-university exchange between Okayama University and Guam University, the current status of questionnaire survey in Guam, and the research plan.

Associate Professor Yasuhiro MATSUI and Dr. NGUYEN Phuc Thanh of Okayama University made their presentation entitled "Political Effect Analysis on Waste Management and 3Rs Promotion in Vietnam", and explained that the aim of the research theme was to evaluate the LCC and life cycle inventory on alternative scenarios on waste management and 3Rs promotion. They also introduced the examples on waste collection survey by using GPS/GIS, the prospective targets, the outline of decision support software used for scenario evaluation developed by Okayama University COE Program, and the examples of cost-effectiveness analyses on alternative waste management scenarios.

Associate Professor Nguyen Thi Kim Thai of Hanoi University of Civil Engineering made her presentation entitled "Status of Municipal Solid Waste Collection in Hanoi City and Future Needs", and introduced the outline of Hanoi, the waste collection rate in Hanoi in 2008, the organizations in charge of collection of solid waste, the limited separate collection, the problems and the needs in waste collection. She explained that she would like to develop the research collaboration with Okayama University to find out a good model for waste collection and transportation for Hanoi city.

Lecturer Pham Khac Lieu and Lecturer Tran Ngoc Tuan of Hue University made their presentation entitled "Waste Recycling and Resource Recovery in Hue City at a Glance", and explained the outline of waste management in Hue; the waste generation, the waste collection, the recycled and reused waste, the waste composition, Thuy Phuong landfill site, and the outline of recycling facility for plastic recovery and composting. He also introduced the waste recycling through scrap pickers and buyers and the future tasks to improve waste recycling and resource recovery in Hue.

Assistant Professor Yu-Chi Weng of Okayama University made his presentation entitled "Evaluation of the Policy effect of the Pay as You Throw (PAST) systems on Household Solid Waste (HSW) Reduction and the Potential Environmental Impacts- A Case Study in Taiwan", and explained the historical trend of the MSW generation, discards and recycling rate in Taiwan, the major regulations and policies in terms of MSW management in Taiwan, the examples of HSW management implementation and PAST systems. He also introduced the aim were to study the proper level of PAST system and evaluate the effects and environmental loads of it. He explained the methodology, flow, collaboration network and schedule of his research.

The discussion topics were as follows; the feasibility, applicability for mixture, and effectiveness for pathogenic organisms/spores of Superheated Steam (to Professor Kimura); the position in Carbon Trading of the pyrolysis gas and biochar from agriculture and forest wastes, and the need for relevant database (to Professor Azhar); the possibility of underwater measurement techniques to apply the underground water

pollution, technical problems for GPR measurement conditions (to Professor Takeshita); the changes in waste quantities, qualities and waste collection system by the introduction of separate collection, and the results for Okayama university by this project (to Professor Fujiwara); the feasibility and methodology for phosphorus recovery (to Professor Nagare); the possibility of policy evaluation in Vietnam (to Professor Matsui); the methodology for Zero Waste in Taiwan and environmental cost evaluation (to Professor Weng); the establishment of recycling system including waste pickers (to Dr. Lieu).

Finally, Prof. Hirofumi ABE, Dean of Graduate School of Environmental Science, Okayama University, presented the closing remarks. He mentioned the importance of enhancing environmental awareness in the situation that waste problems were getting more serious especially in Asian countries and Japanese government suggests 3R Initiative for establishing Sound Material Cycles Society. He asked the relevant experts for the further continuous cooperation.

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Dean, Graduate School of Environmental Science, Okayama University

Location: The Main Seminar Room, 4F, Bldg. of the Faculty of Environmental Science and Technology, Okayama University

Organizer: Solid Waste Management Research Center, Okayama University

Sponsors: Solid Waste Management Research Center, Okayama University
Graduate School of Environmental Science, Okayama University
UNESCO Chair at Okayama University



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グループ写真 Kick-Off Meeting on “Practical Research and Education of Solid Waste Management Based on the Partnerships among Universities and Governments in Asia and Pacific Countries” in FY2010, Solid Waste Management Research Center, Okayama University, July 23, 2010, Japan.