

## Abstracts

【Special Issues: International Trends regarding Disaster Waste: Special Feature of the Disaster Waste Research Group】

### 1. Review of International Trends regarding Disaster Waste and Summary of Japan's International Efforts

Honoka Torii\*, Yuki Ono\*, Yasuharu Kishino\*, Shinya Suzuki\*\*, Tomonori Ishigaki\*\*\* and Shintaro Higashi\*\*\*\*

\* Disaster Waste Management Office, Environmental Regeneration and Material Cycles Bureau, Ministry of the Environment, Japan

\*\* Department of Civil Engineering, Fukuoka University

\*\*\* Material Cycles Division, National Institute for Environmental Studies

\*\*\*\* Socio and Eco Strategic Consulting Unit, NTT Data Institute of Management Consulting, Inc.

† Correspondence should be addressed to Yuki Ono:

Disaster Waste Management Office, Environmental Regeneration and Material Cycles Bureau, Ministry of the Environment, Japan

(Godochocha No.5, Kasumigaseki 1-2-2, Chiyoda-ku, Tokyo 100-8975 Japan)

#### Abstract

In recent years, as disaster scenarios become more severe due to climate change, there have been major disasters occurring throughout Japan also, and this has prompted the country to take up specific measures to deal with the disaster waste generated in each affected area. Prompt and appropriate disposal of disaster waste is crucial to subsequent reconstruction and for this reason, the importance of preparing for disaster waste countermeasures even during normal times is now fully recognized. The occurrence of natural disasters, such as floods, is increasing and becoming more severe around the world due to the effects of climate change. This trend is particularly noticeable in the Asia-Pacific region where the amount of disaster waste generated unusually high due to the progress of urbanization. In some areas, there are not enough preparations for disaster waste management and the appropriate disposal of waste generated from disasters is a

major issue hindering a speedy recovery. This article describes the support being provided by the Ministry of the Environment to date. The Ministry promotes disaster relief and disaster waste management in the relevant countries, including preparation of guidelines and technical materials, and the formulation of policies after investigating the actual situation in each country.

Keywords: disaster waste, guidelines, Asia/Pacific, global human resources bank, treatment plan

## 2. Issues on Disaster Waste Management in the Event of a Major Disaster: Background and International Cooperation

Kimiro Meguro

Center for Integrated Disaster Information Research, Interfaculty Initiative in Information Studies, The University of Tokyo  
(4-6-1 Komaba, Meguro-ku, Tokyo 153-0041 Japan)

### Abstract

In this article, first the true impact of the 1923 Great Kanto Earthquake on Japan was described because the quake had given also a large impact on the issue of disaster waste in a major disaster which is a theme of this article. Next, the challenges and background of disaster countermeasures for a Tokyo metropolitan inland earthquake or a gigantic earthquake along the Nankai Trough in future was discussed including the issue of disaster waste based on a history. The important point is that unlike the cost of pre-disaster countermeasures, that of post-disaster ones, such as recovery and reconstruction cannot be transferred to affected local communities, even though they are difficult to finance. This is because in case that the response capacity of disaster-affected area is not up to the level of response required, it bypasses the disaster-stricken area and flow to the outside. When the Tokyo metropolitan inland earthquake or a gigantic earthquake along the Nankai Trough, which may become national critical disaster, there is a possibility that money flows through Japan and go overseas. Measures to improve this issue are extremely important in terms of ensuring qualitative and quantitative response capacity and preventing the outflow of funds, but the problem is not sufficiently recognized.

Keywords: disaster waste, international collaboration, 1923 Taisho Kanto Earthquake, Great Kanto Earthquake Disaster, national critical disaster

### 3. Technical Cooperation on Disaster Waste Management in the Pacific Region

Satoru Mimura

Mamoru Sakamoto

J-PRISM3, Secretariat of the Pacific Regional Environment Programme (SPREP)  
(c/o SPREP, Vailima P.O. Box 240, Apia, Samoa)

#### Abstract

Pacific Island Countries face difficulties in recycling and waste management due to their small land areas and domestic markets. In addition, they are exposed to many natural disasters because islands are located in tropical regions and are located near plate boundaries. Coupled with vulnerable social infrastructure, these countries are exposed to high disaster risks that make it even more difficult to manage debris and the waste generated by such disasters. Since the year 2000, JICA has continuously provided technical cooperation as a means of developing greater capacity for waste management in PICs. The unique programs for island countries to learn from their respective experiences and good practices, in collaboration with international and regional organizations, have been underway for nearly a quarter of a century and they have faced many disasters during this time. These countries have overcome the challenges unique to small islands and are sharing their experiences in the region. This paper provides an overview of JICA's cooperation regarding disaster waste in the Pacific region and discusses issues facing the region in the future.

Keywords: Pacific Island Countries, vulnerability, technical cooperation, SPREP, recycling

#### 4. Exploring Current Disaster Waste Management in the Philippines

Shintaro Higashi

Socio and Eco Strategic Consulting Unit, NTT Data Institute of Management Consulting, Inc.

(JA Kyosai Bldg. 9th Fl, 7-9, Hirakawacho 2-chome, Chiyoda-ku, Tokyo 102-0093 Japan)

##### Abstract

A review of national policies on disaster waste management reveals that preparation for disaster waste management is not always sufficient. In Southeast Asia, however, some countries are developing guidelines for disaster waste management. This paper reviews this trend in the Philippines as a specific movement, reflecting frequent natural disasters that the country has faced, the growing interest in disaster waste management in the Philippines, and several movements which have emerged. There has been no comprehensive review of such movements thus far, and this paper explores and summarizes the movements happening within the national government, local governments, and other sectors. As a noteworthy point, the paper presents a comparative analysis of preparations underway in the central government and Metro Manila to establish guidelines for disaster waste management. In conclusion, perspectives are proposed to better understand the current status of disaster waste management and to examine policies in detail. The term "legal basis" must be clarified to increase its effectiveness, and such policies need to be formulated in a more realistic and effective way by encompassing a wider variety of "stakeholders". The paper also addresses the possibility of more contributions from academia as well.

Keywords: disaster waste management, guideline, Asia, Philippines

5. Research for Estimating Disaster Waste Generation Amounts and Unit Volumes for Disaster Waste in the Asia-Pacific Region

Kazutoshi Manabe\* and Yuzuru Kushiyama\*\*

\* Global Environment Business Division, OYO Corporation

\*\* Saimage-Japan Co., Ltd.

† Correspondence should be addressed to Kazutoshi Manabe:

Global Environment Business Division, OYO Corporation

(43 Miyukigaoka, Tsukuba, Ibaraki 305-0841 Japan)

Abstract

Preparations for a disaster, such as formulating a disaster waste disposal plan and business continuity plan, can allow for the earliest possible response to disaster waste following any incident. To maintain effectiveness, it is necessary to accurately estimate the amount of disaster waste and formulate a waste disposal plan. Our group has researched such information based on maps and satellite data that can identify areas with many artificial structures in order to calculate the estimated number of buildings from the estimated population density. We conducted a case study where we estimated the total floor area by multiplying the number of buildings with the unit area per household. This study shows the unit volume of disaster waste per area in selected cities throughout Japan, Shanghai, and Indonesia. When researching the unit volume of disaster waste for each building structure typology in other Asia-Pacific countries, we found it is possible to estimate the potential amount of disaster waste generated by multiplying the total floor area with the unit volume.

Keywords: disaster waste, generation potential, generation intensity, Asia-Pacific Region