

## Abstracts

### 【Special Issues: State of the Art Findings Learned from Recent Disaster Waste Management】

Recent Disaster Strategies and Appropriate Treatment of Disaster Waste

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#### ◆Abstract

Disaster waste must be collected, promptly removed, and finally disposed of by the municipality responsible for treatment of general waste. In the event of a large-scale disaster, massive volumes of disaster waste comprised of various types of debris may be generated all at once. For this reason, in the disaster of FY2018, experts from the Disaster Waste Treatment Support Network (D.Waste-Net), including research institutes, industry associations, etc., were dispatched to work alongside staff members of the Ministry of the Environment Japan (MOEJ). Experts also provided advice on disaster waste treatment and technical support for setting up and operating temporary storage sites. With regard to strategies for dealing with disaster waste management, the MOEJ is currently tackling initiatives such as establishment of an investigative committee to promote disaster waste management, setting up regional block councils, and supporting the formulation of disaster waste management plans, etc. as a way to promote the strengthening of waste treatment systems at the national, regional block, and municipal levels.

Keywords: disaster waste, temporary storage site, Disaster Waste Treatment Support Network (D.Waste-Net), disaster waste management plan, regional block council

## Collaborative Efforts of Disaster Waste Management Regions

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### ◆ Abstract

There has been important progress with regard to collaboration and coordinated efforts among regions that have tackled disaster waste management strategies. Among others, this includes integrated support programs at the time of disaster occurrence; arrangement of roles and systems in the guidelines, achievements, and lessons on how to be supportive have now been documented following several disasters. For example, push-type support is seen to be rather effective and a wide range of well-managed support efforts is crucial. An analysis of promptly-reported information on support provided during the repeated disasters that occurred in 2018 indicates that all viewpoints must be taken into consideration. For instance, advance planning for receiving support proves to be helpful in order to avoid mismatched support and establishing the proper base is important to competent management by the national government. In the future, the current system may not be adequate for responding to the large-scale and less-tragic disasters occurring simultaneously, frequently, or successively. New systems that complement or expand the functions of headquarters, as well as human resource development and collaboration systems between region blocks under normal circumstances, must now be determined.

Keywords: disaster waste, regional coordination, flood, Kumamoto earthquake, push-type support

Disaster Waste Disposal following Massive July 2018 Raintall in Hiroshima Prefecture:  
Current Situation and Rerated Issues

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◆Abstract

In July 2018, Hiroshima Prefecture was hit by record breaking rainfall, causing landslides and river flooding to occur throughout the prefecture. As a result, more than 15,000 houses were damaged and an estimated 1.29 million tons of disaster waste was generated. The government of Hiroshima Prefecture formulated the Execution Plan on Disaster Waste Management in Hiroshima Prefecture for prompt restorations. The Plan clearly states that disaster waste management programs should be completed by the end of December 2019. At present, various related activities utilizing facilities of both the municipalities and the private sector are still in progress. Some crucial issues were discovered in the disaster waste management process this time. For example, procedures for securing and operating of the temporary storage site were not satisfactorily prepared before the disaster. In addition, immediate response measures were very poorly organized. Based on these issues, the prefecture has plotted out a Manual on Initial Actions for Disaster Waste Management in Municipalities, which clarifies the role of the municipality during the initial response period following such a disaster. The Manual is currently being used by the prefecture to conduct map exercises, etc. to train municipal staff members.

Keywords: heavy rain in July 2018, disaster waste, disaster waste disposal action plan, initial response manual

Management of Disaster Waste Generated by July 2018 Heavy Rains and Efforts by  
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◆Abstract

A massive rain disaster in July 2018 caused tremendous damages to various parts of western Japan. Immediately after the disaster, the Ministry of the Environment dispatched on-site support teams for the devastated local governments in Okayama, Hiroshima, and Ehime prefectures. These teams carried out support activities in cooperation with the staff at the main ministry office and each local environmental office. The Chugoku-Shikoku Regional Environment Office established a wide-ranging cooperation system with its Action Plan for Disaster Waste Measures at Mega Disaster Occurrence in Shikoku Block, formulated in March 2018. At the time of this massive rain disaster, support was provided based on this plan. This article provides an outline of the disaster waste management scheme for Ehime Prefecture in the Shikoku region, where damages were particularly severe. It also reviews the activities undertaken by the support teams dispatched by the Ministry of the Environment. In addition, it introduces a possible future outlook and way forward for disaster waste management in the Chugoku-Shikoku block.

Keywords: disaster waste, heavy rain in July 2007, Chugoku-Shikoku regional environmental office, on-site support team from MOE, temporary storage site

2017 Heavy Rain Disaster in Northern Kyushu and Disaster Waste Management for a Small Municipality

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◆Abstract

In July 2017, Asakura City suffered unprecedented damages due to heavy rains in northern Kyushu. Based

on a similar experience in July 2012, the city had already created its own manual for disaster waste management and secured three temporary storage sites. Each site was located at a local government headquarters before the merger of municipalities. However, because the scale of the disaster this time was unexpectedly huge and disaster-response headquarters was overwhelmed by other areas such as lifesaving activities, elimination of road obstacles, management of evacuation shelters, emergency restoration of infrastructure, etc., disaster waste management was quite inadequate. The situation was overcome, however, with various supports from many other channels including the Ministry of the Environment, other municipalities, and cooperative citizens who showed understanding. This paper introduces specific features of this disaster, routine waste management procedures for the city, disaster preparations, and actual disaster waste management strategies. Dissemination of this information on the various issues that were faced is sure to be helpful in planning for future disaster waste management scenarios.

Keywords: large-scale disaster, disaster waste, heavy rain in northern Kyushu in July 2017, Asakura City, Fukuoka Prefecture, disaster waste management plan

The 2018 Hokkaido Iburi Eastern Earthquake:

Restoration and Reconstruction Aid

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◆Abstract

A 6.7 magnitude earthquake struck at 3: 07 on the morning of September 6, 2018, its epicenter was located on the eastern part of Hokkaido's Iburi District. A maximum seismic intensity of 7 was observed for the first time in Hokkaido's Atsuma-cho . Along with many personal injuries, the earthquake caused great damage to homes and household goods and the area experienced a phenomenon known as soil liquefaction. Moreover, power outages occurred throughout Hokkaido and in some regions, communication lines were down, spurring further confusion. The amount of waste that had to be treated following the disaster was incomparable to what had ever been seen in normal times and authorities were also coping with a serious lack of manpower. This article describes the disposal of disaster wastes and subsequent claims for expenses, such as waste disposal business expenses, for the affected local governments.

Keywords: Hokkaido Iburi Eastern Earthquake, disaster waste