

## Activities of the Waste Management Research Center (2)

### 2. Research and Contribution on Waste Management Issues at a Regional Level

#### ① Research on the Development of a Sound Material-Cycle Society Through the Implementation of 3R Policies and Practices

A sound material-cycle society can be established at the municipal, prefectural, and regional levels, with the cooperation of administrative agencies. The ideal hierarchical material-cycle society can be built by considering the material input/output and recycling flows from the waste generation at municipalities to the waste recycling/treatment/disposal sectors at the prefectural and regional level. In addition, at the planning stage, administrative services such as waste collection and treatment should be considered at the time of designing urban structures. The research activities of the twenty-first Century COE Program at Okayama University, "Strategic Waste Management," have resulted in establishing the Waste Life Cycle Assessment (WLCA) tools. In recent years, an integrated evaluation of waste collection, treatment, and disposal has been made, and more comprehensive WLCA tools have been developed.

#### ② Studies on the Development of Disaster Waste Management

In response to the Great East Japan Earthquake, all the prefectures are preparing for disaster response plans for tsunamis that could occur as a result of potentially large earthquakes. In Chugoku and Shikoku, the number of episodes of high tides and heavy rainfall associated with typhoons is increasing. Therefore, flooding and destruction of houses have been included in the disaster response plans. Further, a forecast of damages from natural disasters and the preparation of countermeasures have to be made. In the event that regional damages could possibly occur, municipalities are expected to cooperate with each other to formulate disaster response measures. At WMRC, decision support tools for disaster waste from floods in the coastal area of Seto Inland Sea have been developed, including the estimation of disaster waste, the siting of temporal stock facilities, the transportation of construction/demolition waste, the design of treatment capacity of disaster waste, and the selection of treatment technology. By utilizing decision support tools, the disaster rehabilitation network between Chugoku and Shikoku regions is expected to develop.

#### ③ Research Seminars on Waste Technologies

With the support of the government of Okayama city, the Okayama Municipal Eco-Technology Research Group was established, consisting of participants from private companies and citizens who are concerned about recycling and waste management. Okayama Municipal Eco-Technology Research Group holds meetings at the WMRC at Okayama University routinely for exchanging information with members and for holding common events.

#### ④ Environmental Events for Citizens

Apart from waste management issues, other issues involving environmental science, such as energy and resources, would be comprehensively studied at the WMRC. In this regard, the "Come together! Citizens' Eco-life and Technology!" event is held annually. During the event, several topics on environmental learning for children are discussed, activities and related experiments and exhibitions organized, and speeches for citizens would held. This event is organized by the university, the municipality and citizens, with the assistance of the government of Okayama city and environmental NGOs.