PROCEEDINGS

of

International Workshop on Floodplain Risk Management

11 - 13 November, 1996

Hiroshima, Japan

The Committee of International Workshop on Floodplain Risk Management

Organizing Committee

Hiroshima University
Chugoku Regional Construction Bureau, Ministry of Construction
Hiroshima Prefectural Government
Hiroshima City Government

Scientific Committee

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In Publishing the Proceedings of the International Workshop on Floodplain Risk Management

In recent years, levees along numerous rivers in Japan, including the Gono, Kokai, Hime, Seki Rivers, have been breached, resulting in large-scale flooding with extensive damage. There was considerable inundation damage in 1991 when water level in Hiroshima Bay rose during Typhoon No.19 and levees along the Ohta River in Hiroshima were overtopped near their estuary zone. Had the water level then been slightly higher, the City of Hiroshima would have suffered from major flooding. Also, during last year's Great Hanshin Earthquake, liquefaction phenomena along the Yodo River at the estuary area resulted in settlement of levees by 3 meters. A settlement of an additional 1.5 meters would have flooded Osaka City with an insurmountable amount of sea water, and resulted in devastating damage. Extensive flooding has also occurred with great frequency overseas as well, including the 1993 flood along the Mississippi River and large-scale flooding in France, Germany, the Netherlands, the United Kingdom, and China. The costs of the resulting damage were so great as to affect the economies of these nations.

There exist limits to the degree of safety that can be assured with levees and other structures in the face of such massive external forces of nature. These crises have raised the urgent issue that not only just structural measures, but also risk-management measures, be designed to minimize impacts on human lives and properties under such crisis situations. In view of these background developments, this international workshop was organized to examine the risk management measures that have been taken in the past to minimize loss of life and property damage in the event of large-scale flooding of a city by river or sea water following partial or complete collapse of a levee or dike due to a river flood, an abnormally high tidal level, an earthquake, or other disasters. It was also intended to identify proper techniques and counter measures by discussing national and international risk management for floods in the context of actual cases of large-scale flooding in which the risk of flooding was minimized.

The following Topics were discussed in the workshop:

- Floods (forecasts, analyses, and case studies)
- Mechanism of levee breach and design standards for levees
- Emergency management systems - sharing roles by national and municipal governments
- Development of hazard maps and their usage
- Information release, evacuation, rescue, volunteer activities, and flood fighting
- Secondary damage
- Flood insurance and land acquisition
- Law suits against flood damage
- Use of floodplains and its restriction
- Flood control without disturbing natural environment
- Basin-wide flood control and management

This proceedings contains twenty-four invited technical papers, including two special lectures. These papers consist of two categories: those written by senior engineers who are responsible for managing major floods in different countries and have had real-world experience in decision making for mitigation of flood damage, and those written by researchers who investigate risk management of floodplains.

The Chairman of this International Workshop on Floodplain Risk Management would like to extend his sincere appreciation to those from Hiroshima University, the Ministry of Construction, the Hiroshima Prefectural Government, and the Hiroshima City Government, who assisted him in organizing the workshop.

November, 1996

Shoji Fukuoka

Chairman of the Committee of International
Workshop on Floodplain Risk Management
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