

The 3rd Japan-Korea Sediment Disaster Prevention Technology Conference Held

◆ Akihiko IKEDA ◆

On October 28, 2004, the 3rd Japan-Korea Sediment Disaster Prevention Technology Conference was held in Taejon City in the Republic of Korea (hereafter referred to as Korea) between the Sabo Department, Ministry of Land, Infrastructure and Transport (MLIT) of Japan, and the Forestry Administration, Ministry of Agriculture and Forestry of Korea.

This conference has been held to exchange information, ideas, and opinions concerning administrative systems, policies, researches, and technologies in order to improve overall sediment-related disaster prevention in both countries. The 1st conference was held in Seoul, Korea on Mar. 28, 2002, the 2nd conference in Osaka, Japan on Mar. 21, 2003, and the current one was the 3rd conference.

Participants of the conference were as follows.

(1) Japanese Side

Tetsuo SAKAGUCHI

(Director of Land Conservation Division, Sabo Department, MLIT)

Shigeru WATANABE

(Deputy Director of Sabo Planning Division, Sabo Department, MLIT)

Katsuo SASAHARA

(Senior Researcher, Erosion and Sediment Control Research Group, Public Works Research Institute)

Masao OKAMOTO

(Director General of Japan Sabo Association)

Yasuo TOMOMATSU

(President of Sabo Technical Center)

Masayuki KABA

(Director of Planning Department, Sabo Technical Center)

Akihiko IKEDA

(Acting Chief of Sabo Department, Sabo Technical Center)

Masateru ABE

(Senior staff, Planning Coordination Department, Sabo Publicity Center)

(2) Korean Side

Kim Hyun-Soo

(Director, Div. of Disaster Prevention & Forest Engineering, Bureau of Forest Protection, Korea Forest Service)

Jeong Min-Ho

(Chief Official, Forestry Works Section, Div. of Disaster Prevention & Forest Engineering, Bureau of Forest Protection,

Korea Forest Service)

Kim Jong-Yeon

(In charge of Sediment Control Section, Div. of Disaster Prevention & Forest Engineering, Bureau of Forest Protection, Korea Forest Service)

Choi Jung-In

(Chief Official, Disaster Prevention Section, Div. of Disaster Prevention & Forest Engineering, Bureau of Forest Protection, Korea Forest Service)

Lee Chung-Yong

(Director, Div. of Forest Soil Conservation Lab., Korea Forest Research Institute)

Kim Jae-Heun

(Research Fellow, Agricultural R&D Promotion Center, Korea Rural Economic Institute)

Youn Hojoong

(Researcher, Forest Soil Conservation Lab., Korea Forest Research Institute)

Lee Chang-Woo

(Researcher, Forest Soil Conservation Lab., Korea Forest Research Institute)

Ma Ho-Seop

(Professor, Faculty of Forest Science, College of Agriculture and Life Science, Gyeongsang National University)

The conference, held at the meeting room on 15F of the Forestry Administration building in Taejoon City, was started with the opening addresses by Kim Hyun-Soo, Director of Div. of Disaster Prevention & Forest Engineering, Bureau of Forest Protection, Korea Forest Service, Ministry of Agriculture and Forestry of Korea, and Tetsuo SAKAGUCHI, Director of Land Conservation Division, Sabo Department, MLIT of Japan.

The presentation session proceeded in the following order.

- 1) Basin management projects in forest land and future perspectives: Choi Jung-In
- 2) Characteristics of recent sediment-related disasters in Japan: Tetsuo SAKAGUCHI
- 3) The present status of debris flow researches in Japan: Katsuo SASAHARA

- Lunch -

- 4) Development of a site selection system for sabo structure installation using GIS: Youn Hojoong
- 5) Planning and applications of structural measures

against debris flow: Akihiko IKEDA

- 6) Policies for the implementation of warning and evacuation: Shigeru WATANABE
- 7) Causes of a large-scale collapse at an agricultural/industrial land in Kimhae and measures implemented: Park Jae-Hyeon (Professor, Chinju National University)
- 8) The Restraint on Slope Failure by Hillside Vegetation during a Heavy Rainfall: Nobutomo OSANAI (Director, Erosion and Sediment Control Division, Research Center for Disaster Risk Management, National Institute for Land and Infrastructure Management)



A scene of the conference (Opening address by Kim Hyun-Soo, Director of Korea Forest Service)

Chief Official Choi of Korea Forest Service introduced basin management projects in forest land intended for stabilizing existing forest roads and nurturing disaster-resistant forests/economic forests. To enable highly efficient project development, 339 basins have been selected as the project sites based on the criteria that the basin area is greater than 500 ha, systematic implementation of measures is possible, and sediment and driftwood discharge due to heavy rain is highly probable. He explained that the overall project effect is being grasped on three levels: the guidance and project effect analysis are carried out by the Korea Forest Research Institute (KFRI); maintenance of facilities is done by the regional offices of Korea Forest Service; and monitoring is performed by entrusted universities.

Director Sakaguchi of Land Conservation Division of Japan presented sediment-related disaster cases and their features that occurred recently, including the 2003 disaster in Kyushu, the 2004 disaster in Niigata/Fukushima, and the 2004 disaster in Fukui, all due to heavy rain. Concerning the features of these disasters, Sakaguchi emphasized that the frequency of heavy rain is increasing in recent years and gave examples - the frequency of heavy rain with an hourly rainfall of over 60 mm has increased to 1.5 times and that with an hourly rainfall of over 100 mm has

increased to about 2 times during the past 20 ~ 30 years. To this, the Korean side asked if Japan has a budget allocated for this problem and any quantitative analysis-based materials that show the actual disaster prevention effect obtained.

Senior Researcher Sasahara of Japan introduced the present status of debris flow researches in Japan. As the important research areas, he cited the prediction of debris flow occurrence: the setting method of standard rainfalls for debris flow occurrence; detection of debris flow occurrence: the trigger setting method of a vibration sensor, the prediction method of debris flow flooding area, prediction and detection of debris flow occurrence in volcanic areas. He also explained individual developments being made in these domains.

Researcher Youn of Korea introduced a site selection system for sabo structure installation using GIS. He said that the objectives of the system are the selection of environment-friendly installation sites, use of wide area as the model investigation/application range, and automation of the investigation process. Aiming at the efficiency and the standardization of the site selection method, he stressed that the system is being developed to enable a move from a point development in the past to a plane development in the future. To the question from the Japanese side about the details of the selection method, Youn replied that the system is intended for use on the basin level and not for the selection of an individual dam site.

Ikeda of Japan made a presentation on the purpose of debris flow measures in Japan, their planning processes, policies on sediment control, and planning of facility installation. He also introduced structures, functions, as well as the actual installation examples of debris flow prevention facilities. The Korean side asked environment-related questions, such as about facilities designed with environmental considerations and using wood, and technical questions, such as how the design sediment discharge from a debris flow is calculated and what is a basic approach to sediment removal at a sabo dam.

Deputy Director Watanabe of Japan introduced the outline and the purpose of three major urgent projects currently undertaken in Japan: [1] sediment-related disaster hazard area identification project; [2] sediment-related disaster information communication project; and [3] sediment-related disaster warning and evacuation project. To his presentation, the Korean side asked: if there is any penalty system for those not evacuated disregarding an evacuation recommendation when a disaster actually occurs; if the land price will fluctuate when a given area is designated as sediment-related disaster hazard (or special hazard) area; and if there is a compensation system for residents when a given area is designated as a hazard (or special hazard) area.

Professor Park introduced a large-scale collapse that occurred at an agricultural/industrial land in Kimhae City on Aug. 10, 2002. He explained about the

causes of collapse (rainfall conditions and groundwater conditions), the mechanism behind the collapse, and the details of remedial works now being constructed. On Oct. 30, a site tour was made to this failure site where detailed explanations were given from the engineers of construction companies working there.

Following individual presentations and questions and answers, the general session began. The Korean side explained that the problems associated with sediment-related disasters currently seen in Korea are: the scale and frequency of disasters are increasing; the hazard level of disasters is rising due to the increased use of artificial land; and the actual effect of measures are not so productive because of unbalanced development. As the measures, they said that they would implement basin management projects in forest land preponderantly, reduce the disaster hazard level by nurturing the growth of forests, and establish facilities focusing on a wide area through the use of a sabo facility site selection system using GIS. From the Japanese side, Director General Okamoto of Japan Sabo Association presented the brochure of the International SABO Association and appealed to the Korean side to participate in the association if they would support its message.

At the end of the session, it was confirmed that the Japan-Korea Sediment Disaster Prevention Technology Conference would be continued between the Forestry Administration, Ministry of Agriculture and Forestry of Korea and the Sabo Department, Ministry of Land, Infrastructure and Transport (MLIT) of Japan, on an alternate basis. These exchanges were documented in the proceedings of the conference.

On Oct. 27, the day before the conference, we visited the Forest Environment Research Institute and its auxiliary Forest Museum and the Geum-gang River natural rest forest in Chungchong South Province. The fact that the annual visitors to these facilities are 230,000 clearly indicates the high level of awareness towards forests in Korea. On Oct. 29, the next day of the conference, we made a site tour to the slope failure restoration work sites in Kumi City and Kimcheon City. At these sites, hillside works and structures with considerations for aesthetics and the environment were seen, and active discussions were made on the differences between their works and Japanese works. On Oct. 30, we visited the site of a large-scale collapse at an agricultural/industrial land in Kimhae City and talked about the disaster prevention works which were introduced during the conference.

As shown above, following the 1st and the 2nd conferences, the 3rd Japan-Korea Sediment Disaster Prevention Technology Conference ended successfully, with much deepened understanding of each other's projects and active exchange of useful information. The current conference was particularly valuable in that technical challenges we face were refined through lively discussions at the conference room and at the tour sites. To further strengthen technical cooperation

between the two countries, the 4th Japan-Korea Sediment Disaster Prevention Technology Conference will be held in Japan in 2005.



Participants of the 3rd Japan-Korea Sediment Disaster Prevention Technology Conference held in Korea.