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# International Research Activities

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## 1. International research activities at the NILIM

In accordance with the relevant policies of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), the NILIM is enhancing collaboration with foreign government agencies and research institutions funded by governments. Meanwhile, the NILIM is promoting international research activities based on the following three key perspectives.

### (1) Supporting policy formulation in Japan with technical expertise:

We will establish networks with foreign government agencies by leveraging the bilateral agreements initiated by the NILIM and agreements concluded by the MLIT. Through this network, we will gather information on advanced initiatives and disaster damage scenarios. We will then use this collected data and knowledge to enhance domestic policy recommendations and technical standards.

### (2) Technical support for developing nations:

We have gathered valuable knowledge from hands-on experience in maintaining public facilities and responding to disasters in Japan, often from the perspective of facility managers. Additionally, we have research findings on advanced disaster preparedness measures that incorporate these insights. Leveraging this expertise, we aid developing nations and their local governments in addressing complex technical challenges, establishing technical standards, and enhancing the abilities and skills of technical government officials.

### (3) Sharing infrastructure systems internationally:

We use our expertise in developing technical standards that aid policy implementation in Japan to customize Japanese technical standards according to the specific requirements and conditions of partner countries. At the same time, we offer technical support to facilitate the international sharing of infrastructure systems knowledge. We do this by actively engaging in committees that establish international standards. In certain areas, we take a leading role in globalizing technical standards, ensuring alignment between domestic and international standards for consistency.

## 2. International Research Activities in FY 2022

In FY 2022, border restrictions were slowly eased despite ongoing COVID-19 infections. This relaxation resulted in a rise in international travel, allowing the world to slowly return to a state of the pre-COVID era. During this period, some international conferences and meetings were either delayed or held online. However, a few of them proceeded in the traditional face-to-face format, involving participants traveling internationally to attend.

The following section outlines the key international research initiatives we implemented in FY 2022 under the ongoing influence of the COVID-19 pandemic.

### 2.1 LandAware: Activities in the international network on landslide early warning systems

At LandAware, the international network for landslide early warning systems established in 2020, we consistently work on standardizing technical standards from different countries regarding landslide early warning systems, which are increasingly adopted globally. We also exchange best practices and collaborate on producing summary papers. Our Sabo Department, as a founding member of the network, is actively reviewing landslide early warning systems worldwide and drafting glossaries and catalogs related to these systems. In October 2022, a workshop was held in Zurich, Switzerland, to develop a prototype for the

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next-generation landslide early warning system. Participants engaged in discussions about the operational methods of warning systems and the necessary review steps. This was accomplished by sharing examples of conducting comparative assessments of warning systems currently in operation in the various countries based on their specifications. Additionally, we shared our accumulated experiences, information, and insights related to models and data.

### 2.2 Participation in the 26th FHWA/MLIT Intergovernmental Meeting

A meeting took place between the United States and Japan to discuss the maintenance and management of road bridges and earthquake-resistant technologies. This meeting was held in accordance with the Japan-US Memorandum of Cooperation on Japan-US Traffic Infrastructure Development, which was signed by the US Department of Transportation and the MLIT of Japan. We acquired information on the latest trends and policies in road bridge management by sharing information on road bridge management trends in Japan and engaging in discussions and exchanging opinions with the US Federal Highway Administration. We anticipate using these insights to streamline and refine future road bridge management efforts, improve management technologies, and reduce the workload associated with maintenance and management tasks.

### 2.3 Holding joint seminars with Vietnam-Japan University

On November 25, the NILIM held an online joint seminar with Vietnam-Japan University, Vietnam National University, Hanoi (referred to as "Vietnam Japan University"). The Vietnam-Japan University was established with support from the Japanese government. The NILIM collaborated in organizing the seminar to foster relationships between the university and Japanese companies. During the seminar, both the NILIM and Vietnam-Japan University presented their respective road technologies and policies. The NILIM also presented information on road structure maintenance and management in Japan and methods for preventing and mitigating landslide disasters. Nearly over 100 participants, including those from outside Japan and Vietnam, took part in the joint seminar. Their active participation in the Q&A sessions contributed to the success of the event.



Figure 1. The joint seminar with Vietnam-Japan University

### 2.4 Interactive Meeting on Urban Research with Korea Research Institute for Human Settlements

In November 2012, the NILIM and the Korea Research Institute for Human Settlements signed a memorandum of cooperation for urban research. Since then, we have conducted collaborative research meetings and field trips together. In fiscal year 2023, a joint workshop took place in Japan, marking the first such event in five years. During this period, various meetings and field trips were conducted. During the joint research meeting, both institutions presented their research findings on smart cities. They also discussed strategic plans for the next five years and agreed to collaborate on a joint research project focused on digital transformation (DX) in urban areas during the first half of this period.



Figure 2. The seventh joint research meeting with Korea Research Institute for Human Settlements (December 1, 2022)

### 2.5 Our roles in PIANC WG213

The NILIM has been engaged in WG213, a group within the World Association for Waterborne Transport Infrastructure

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(PIANC), focusing on creating guidelines for planning multipurpose terminals. As part of our involvement, we have developed draft reports on this topic. Our Port and Harbor Department has represented Japan as a member of the working group (WG). Specifically, we were responsible for drafting a chapter that explores the usage of multipurpose terminals other than cargo transportation and submitted scripts. In this chapter, we discussed our ideas on the use of multipurpose terminals for emergency transportation during natural disasters and information on procedures for accommodating cruise ships.

## 2.6 Activities related to ISO

Our Water Quality Control Department, serving as an expert committee member of WG16 (adaptation to climate change) within ISO TC224 (water supply and sewage service), participated in the meeting online. During the session, international standards related to water supply and sewage services, specifically addressing climate change challenges, were developed and discussed. Our Building Department contributed to the online working group of ISO TC92 (fire safety) SC2 (containment of fire). During the session, they gathered feedback on expanding the application of fire resistance test results as part of their role in drafting standards.

## 2.7 Cooperation with JICA projects and training

In response to JICA's request, the NILIM has been hosting trainees from overseas. These trainees attend lectures at our research facility and tour our experimental facilities every year. Additionally, we have started providing online training sessions in recent years. This year, we conducted the following training programs along with three others.

- (1) Dam Safety Management (River Department) [Video lecture: 2 trainees]
- (2) Training for Enhancing Public Construction Project Estimating Skills (Research Center for Infrastructure Management)  
[Face-to-face lecture: 11 trainees]