
International Research Activities

1. International research activities at NILIM

NILIM has been promoting international research activities based on the following three viewpoints.

(1) Improvement in the quality of research findings: In order to produce worthy research findings, we closely follow the trends in overseas technical policies concerning "Disaster prevention / mitigation and crisis management", "Infrastructure maintenance", "Production innovation", "Improvement of livability", etc., which are important research subjects for NILIM. To this end, we collect information broadly by actively participating in international conferences. In particularly important fields, we go deeper through bilateral meetings and a framework of research cooperation among many countries.

(2) Infrastructure system export: As a governmental organization, we implement activities to export high quality infrastructure in accordance with measures that benefit Japanese companies and revitalize domestic industries. For this purpose, we participate in projects and provide information thereto from the conceptual phase (upstream), develop soft infrastructure, support companies that export infrastructure, and cooperate in bilateral research with developing countries.

(3) International contribution: We dispatch experts for technical cooperation projects conducted by JICA in developing countries and factfinding missions to support reconstruction efforts overseas after large-scale natural disasters. We also welcome engineers and administrative officers from developing countries for training programs conducted by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT).

2. Main international research activities in fiscal 2018

Of the international research activities implemented in fiscal 2018 based on the three viewpoints above, representative cases are introduced as follows.

(1) Activities related to the "Improvement in the quality of research findings"

We attended international conferences including the following to collect and share the latest information in the respective research fields.

1) Meeting on Flood Control and Water Resources Management between USACE and MLIT and visit to related organizations (USA: May 16 to 26, 2018)

Through participation in the 13th Meeting on Flood Control and Water Resources Management between USACE and MLIT and visits to the World Bank and the U.S. Army Corps of Engineers on Water Resources, we collected information about the latest flood disaster risk reduction measures under the pressures of climate change and examined Japan's flood disaster risk reduction measures.

The following are the matters identified as a result of this research.

- It is important to formulate a practical flood disaster risk reduction / crisis management plan based on regional characteristics, evacuation status, etc.
- Regarding the future rise in sea level due to climate change, study and coordination are necessary to introduce methods to be considered in flood control plans.

2) Meeting on measures against aging sewerage infrastructure (France, June 10-17, 2018)

As measures against aging of sewerage facilities, private sector utilization and area expansion are claimed also in Japan. In France, which is advanced in taking such measures, we held a meeting (Photo 1) with the France Conference of Mayors, water treatment companies, sewerage management associations, and urban communities in the Bordeaux Region to collect information about the current status and future direction including their subsidy system.

3) Japan-US Bridge Workshop (USA: July 15-20, 2018)

In the Japan-US Joint Bridge Workshop held under the Japan-US Science and Technology Cooperation Agreement (Transportation Science and technology Field), opinions were exchanged with a focus on standardizing matters for which no specific standards were established in either country or were due for revision. Agenda items included "Standards for periodic inspection and durability design", "Needs for monitoring", "Standardization of advanced numerical analysis", and "Standardization of repair / reinforcement and new materials".

(2) Activities related to "infrastructure system export"

1) Cooperation in formulation of national harbor standards in Vietnam



Photo 1: Control center in Bordeaux

NILIM is providing cooperation to Vietnam under the "Memorandum of Understanding for Cooperation in Formulation of National Technical Standards for Port and Harbor Facilities", which was executed in March 2014 between the MLIT and the Department of Transportation of Vietnam and revised in June 2017. Standardization has been discussed mainly in workshops held between the two countries and three parts of the Vietnam National Harbor Standards (General Provisions, Load and Effect, Construction / Inspection Criteria) have been issued by the Ministry of Science and Technology Vietnam and one part of the Ministry Standards (Breakwaters) by the Ministry of Transport Vietnam. For fiscal 2018, we focused work on the remaining 5 standards (materials, foundation, soil improvement, mooring facilities, and maintenance) with the institutes of both countries jointly editing the content through a total of 6 workshops (Photo 2) held in Japan and Vietnam.



Photo 2: Workshop

2) Joint research in the road field of Indonesia (Indonesia: March 4-7, 2019)

NILIM and the Institute of Road Engineering (IRE) of the Republic of Indonesia have been conducting joint research since the execution of a Memorandum of Understanding in November 2009. For the current fiscal year, the fields and content of research were updated based on the results of research to date and needs of IRE, and a new memorandum was executed.

(3) Activities related to "International contribution"

1) Short-term dispatch of experts to the Disaster Risk Reduction Training Program for Latin America and the Caribbean (Chile: Sep. 30 - Oct. 8, 2018)

At the request of JICA, we provided technical cooperation to train human resources from Latin America and the Caribbean in disaster prevention via a program implemented in Chile. In the PUC-KIZUNA Seminar (Photo 3) held mainly for young researchers in the Pontificia Universidad Catolica de Chile (PUC), we gave a lecture on response to the recent issues in the structural design of buildings, introducing some examples in Japan including the structural design method for tsunami evacuation buildings and measures against long-period ground motion.



Photo 3: PUC-KIZUNA Seminar

2) Sulawesi Earthquake field survey (Indonesia: Nov. 1-5, 2018)

For the earthquake that hit Sulawesi, Indonesia on September 28, 2018, we conducted a field survey for the purpose of future safety measures and support for the reconstruction of houses, etc. We surveyed the damage situation centering on seriously-damaged medium and high-rise buildings and made improvement proposals for construction works including reinforcement bar work.

3) River sediment management workshop (Italy: Nov. 6-16, 2018)

At a workshop on sediment observation and management in mountainous rivers, we learned international trends and know-how about sediment observation technologies, and introduced, in the discussion, findings from a "study on the method for forecasting sediment disasters with high accuracy using real-time observation / monitoring data", which was a study project that ended last fiscal year.

☞ See the following for details.

1) International activities on the website of NILIM

<http://www.nilim.go.jp/lab/beg/foreign/kokusai/kokusaitekikatudou.htm>