Outline of the National Institute for Land and Infrastructure Management

Mission of the National Institute for Land and Infrastructure Management*

As the only national research institute in the field of housing and social infrastructure, the NILIM aims to realize a safe, secure, dynamic, and attractive land and society now and in the future by using technology as the driving force.

Basic attitude*

○The NILIM participates in the policy development of the Ministry of Land, Infrastructure, Transport and Tourism as a technical expert taking into account the administrative perspective.

○The NILIM returns the advanced and comprehensive technical capabilities cultivated through research activities to the actual field of work.

○The NILIM leads the insight into the future vision of land and society and the promotion of technological development to the creation of new policies.

***From the Research Policy of the NILIM, revised in November 2017**

Order for the Organization of Ministry of Land, Infrastructure, Transport and Tourism

(National Institute for Land and Infrastructure Management)

Article 194 The National Institute for Land and Infrastructure Management governs the following affairs.

1 To conduct comprehensive surveys, tests, research, and development of technologies related to the development of social infrastructure for the use, development, and conservation of the national land and ones related to the planning and formulation of policies pertaining to the affairs under the jurisdiction of the Ministry of Land, Infrastructure, Transport and Tourism.

2 To provide guidance and disseminate the results related to the technology mentioned in the preceding item and to collect, organize, and provide information.

3 To train officials of the Ministry of Land, Infrastructure, Transport and Tourism on affairs listed in Article 4, paragraph (1), items 57 and 61 (limited to those pertaining to ports and harbors), items 101, 102, and 109 (limited to those pertaining to the development and maintenance of airports etc.), of the Act.

Act for Establishment of the Ministry of Land, Infrastructure, Transport and Tourism

Article 194 The Ministry of Land, Infrastructure, Transport and Tourism shall take charge of the following affairs in order to achieve the mission set forth in paragraph 1 of the preceding article. (The following are excerpts.)

57. Matters concerning reclamation and land reclamation of public water areas

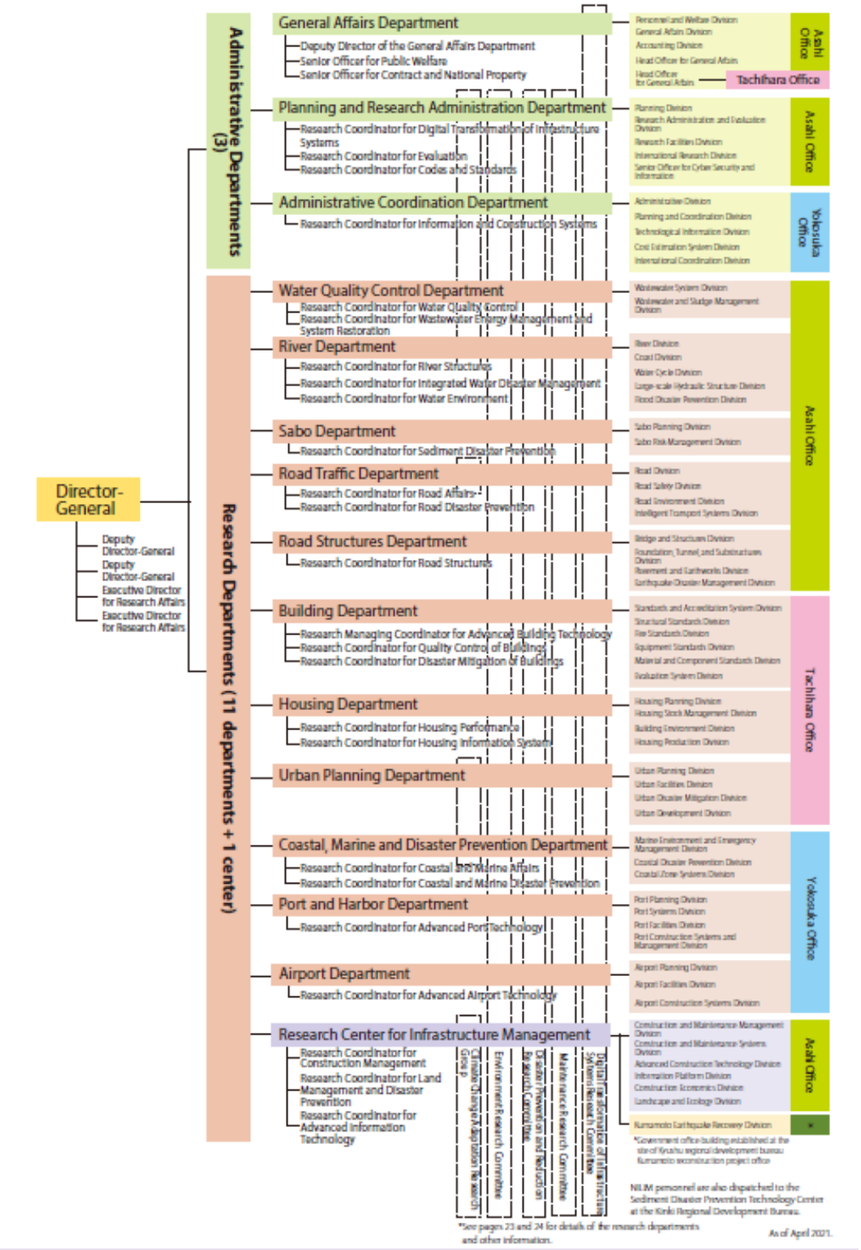
61. Matters concerning the maintenance, use, and other management of the coast

101. Matters concerning the maintenance, use, conservation, and management of ports and harbors

102. Matters concerning the maintenance, conservation, and management of sea routes

109. Matters concerning the establishment and management of airports, other airfields, and air navigation facilities prescribed in Article 2 of the Airport Act, and environmental measures related to the establishment and management of airports etc.

Organization



Research Policy revised in November 2017

The Research Policy is for each staff member of the NILIM to have a common understanding of the mission and the direction and perspective of research activities, to clarify the technology policy issues to be solved and the research goals, and to indicate how to proceed with the research to achieve the goals. It is reviewed as necessary based on changes in social situations, research needs, and progress.

The National Institute for Land and Infrastructure Management

Mission of the National Institute for Land and Infrastructure Management

As the only national research institute in the field of housing and social infrastructure, the NILIM aims to realize a safe, secure, dynamic, and attractive land and society now and in the future by using technology as the driving force.

Basic attitude

○ **Participate in the policy development of the Ministry of Land, Infrastructure, Transport and Tourism as a technical expert taking into account the administrative perspective.**
- Participate not only in the planning and formulation of technology policy but also in its dissemination and establishment.
- Clarify the necessity and validity of technology policy with empirical data to ensure accountability.

○ **Apply the advanced and comprehensive technical capabilities cultivated through research activities to the actual field of work.**
- Provide solutions based on actual conditions in the field and provide flexible support for advanced emergency response in times of disaster etc.
- Accumulate, generalize, and disseminate individual case of disaster responses and reflect obtained lessons in the research.

○ **Connect to the creation of new policy using insight into the future image of national land/society and through the promotion of technology development.**
- Observe the land and society, accurately grasp changes, and foresee future issues.
- Aim to develop new technologies through collaboration and the fusion of technologies with industry, academia, and government.

Core Activities

○ **Research and development that supports the planning, drafting, and spreading of the policy for land, infrastructure, transport, and tourism**
- Systematically present technical standards and methods that support important policy development and apply them in actual fields while making continuous improvements.
- Identify issues that need to be addressed in the future and propose policy directions.
- Analyze trends of issues related to land and society and accumulate knowledge continuously and for the long term.
- Support the international deployment of Japan's technology through strategic international standardization and train engineers in developing countries.

○ **Support advanced technology to respond to natural disasters and accidents and sophisticate responding technologies**
- Dispatch researchers immediately after a disaster to support field responses to prevent secondary disasters and to implement emergency measures.
- Provide technical advice in investigating causes, formulating recovery and reconstruction plans, and implementing countermeasures.
- Accumulate knowledge and lessons learned from disasters etc. to reflect them in advanced research on disaster prevention and mitigation measures.
- Provide technical support for large-scale disasters overseas as a country with advanced disaster response capabilities.

○ **Support the improvement of on-site technical capacities at Regional Development Bureaus and other facilities.**
- Transfer technological capabilities by providing guidance and advice on on-site issues as an organization with practical knowledge.
- Train local core engineers with both administrative knowledge and expertise by accepting human resources and training them.

○ **Gather, analyze, and manage data to develop the technical foundation for formulating policies and the utilization of information for society**
- Collect and manage a vast amount of field data while ensuring objectivity, accuracy, and reliability as a national institution.
- Analyze the accumulated data and reflect findings in research for release to society in an appropriate manner.

Research Policy

Ministry of Land, Infrastructure, Transport and Tourism

November 1, 2017

Attitude toward Research

○ **Understand the real needs of the government and the field and clarify the essential technical issues.**
○ **Formulate a research plan that includes hypotheses and verification methods to overcome challenges and a path to social applications.**
- Clarify what to overcome in existing research by utilizing the research accumulated systematically as an institution.
- Set up research items, procedures, schedules, and achievement targets by assuming social applications of the research outcomes from the planning stage.
- Recognize one's own strengths and weaknesses and build an efficient research system in collaboration with external organizations.

○ **Review plans flexibly with an eye to the overall development of the research based on the facts obtained.**
- Test hypotheses by interpreting data and facts in an objective and neutral manner.
- Discuss with experts in a wide range of fields to consider multiple angles and perspectives.
- Look at the research as a whole, constantly identify the nature of the results, and spontaneously and continuously review the plan.
- Through trial and error, flexibly accept results that include unexpected results, and develop them into better research results.

○ **Systematically compile findings and evolve them into results that can be utilized in the field.**

○ **Establish a strategic path for the appropriate and smooth social application of research outcomes.**
- Clarify highly feasible implementation processes and roles that take advantage of the characteristics of government, field, and research.
- Incorporate public relations as part of the research and actively communicate to society making sure that necessary information is effectively conveyed.

○ **Follow up on the results of social applications, identify technical issues, and reflect them in future research.**

Establishment of an environment that supports research

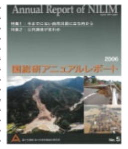
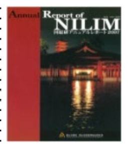
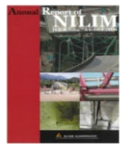
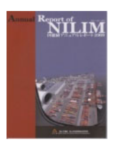
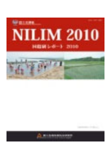
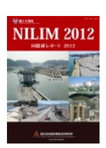
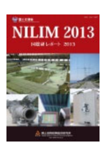
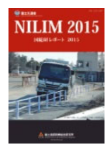
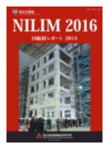
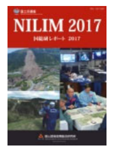
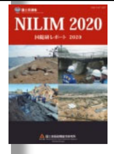
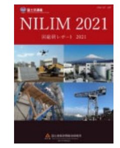
○ **Develop management system to support high-quality research.**
- Conduct external and internal evaluations to improve research from a wide range of perspectives. Proactively incorporate advice and opinions from third parties and strictly and voluntarily review the research status to make improvements.
- Develop new mechanisms for collaboration with external parties in a flexible manner in response to diverse and rapid technological developments.
- Create publications and databases to turn research outcomes into an intellectual foundation and have various means of publicity.

○ **Train human resources who have technological backgrounds and the ability to observe policy development from the perspectives of both researchers and administrator/on-site workers.**
- Develop the ability to interpret data, assume field applications, and construct a path to conclusions and procedures for social implementation.
- Pass on the accumulated research, experience, and know-how of predecessors and provide opportunities to experience administration and the actual worksites.
- Establish a research institution with diverse human resources that include researchers from government, actual worksites, industry, and academia.

○ **Own and reinforce the function of experimental facilities to support technological research and development in the field of housing and social capital.**
- Appropriately manage and operate facilities that are difficult for the private sector to own, which are essential for performance verification in practical environments.
- Provide opportunities for outside parties to use the NILIM facilities to support a wide range of technological research and development by the private sector, universities, etc.

Research and development that supports the national technology policy

Research and Development: 20 Years of Progress

Year	The NILIM Report	Event
2001		Establishment of the NILIM (April) The Geiyo Earthquake (March) Establishment of the Ministry of Land, Infrastructure, Transport and Tourism (January)
2002		
2003		Formulation of the Priority Plan for Social Infrastructure Development (October) Tokachi-oki Earthquake (September) Visit Japan Campaign (April)
2004		The Indian Ocean earthquake and Tsunami of Sumatra (December) The Niigata Chuetsu Earthquake (October) Torrential rain in Niigata and Fukushima, torrential rain in Fukui (July)
2005		Scandal of Falsified structural calculations (November) Hurricane Katrina (August) Enactment of the Housing Quality Assurance Act (April) West Off Fukuoka Prefecture Earthquake (March) The entry into force of the Kyoto Protocol (February)
2006		Enactment of the Act on Promotion of Smooth Transportation, etc. of Elderly Persons, Disabled Persons, etc. (December) The Yogyakarta Earthquake in Java (May) Heavy snowfall in 2006(January and February)
2007		Minneapolis bridge collapse, USA (August) The Niigataken Chuetsu-oki Earthquake (July) Steel rupture of the Kiso River Bridge on National Route 23 (June) The Noto Hanto Earthquake (March)
2008		Bankruptcy of Lehman Brothers (September) Launch of smartphones (July) Water-related disasters caused by heavy rains in limited areas (Kobe, Tokyo) (July) The Iwate-Miyagi Nairiku Earthquake (June)
2009		The Shizuoka Earthquake in Suruga Bay (August)
2010		Opening of the Tokyo International Airport Runway D (October) Total population decline in Japan
2011		Typhoon Talas (#12): Flooding in the Kii Peninsula (September) Torrential rain in Niigata and Fukushima (July) Enforcement of the Revised Act on Sediment Disaster Countermeasures for Sediment Disaster Prone Areas (May) Start of the use of ETC2.0 The Off the Pacific coast of Tohoku Earthquake (March)
2012		Collapse of Sasago Tunnel ceiling plate (December) Hurricane Sandy (October) 2012 Torrential rain in northern Kyushu (July)
2013		Enforcement of the Basic Act for National Resilience Contributing to Preventing and Mitigating Disasters for Developing Resilience in the Lives of the Citizenry (December) Mudslide disaster on the Izu Oshima Island (October) Action Program for the Realization of a Tourism-Rich Country (June) First year of social infrastructure maintenance by Ministry of Land, Infrastructure and Transport
2014		Torrential rain in August 2016 (Landslide in Hiroshima City) (August) Formulation of the Public-Private ITS Initiative Road Map (June) Revision of the Housing Quality Assurance Act (June) Heavy snowfall in the Kanto and Koshin region (February)
2015		Start of i-Construction (November) Torrential rain in Kanto and Tohoku (September) Enforcement of the Revised Building Standards Act (June) Problems involving non-conformity with ministerial approval of seismic isolation materials (March) Enforcement of the Revised Act on Sediment Disaster Countermeasures for Sediment Disaster Prone Areas (January)
2016		Large-scale fire in Itoigawa City, Niigata Prefecture (December) The entry into force of the Paris Agreement (November) Typhoons Chanthu (#7), Mindulle (#9), Lionrock (#10), and Kompasu (#11) (July to November) The Kumamoto Earthquakes (April)
2017		Hurricane Harvey (August) Enforcement of the Revised Act on Sediment Disaster Countermeasures for Sediment Disaster Prone Areas (June) The 2017 Northern Kyushu Heavy Rainfall Disaster (July)
2018		Cabinet decision on three-year emergency measures to strengthen the national land (December). Hokkaido Eastern Iburi earthquake (September) Storm surge in Osaka Bay caused by Typhoon Jebi (#21) (September) Torrential rain in western Japan (July) The 2018 heavy snowfall (January to March)
2019		The 2019 East Japan Typhoon (October) The 2019 Boso Peninsula Typhoon (September) Enforcement of the Revised Building Standards Act (June)
2020		Cabinet decision on five-year measures to strengthen the national land (December) Start flood control in the basin Installation of Infrastructure DX Promotion Headquarters in Ministry of Land, Infrastructure and Transport (July) Heavy rain in July 2020 (July) COVID-19 outbreak

Strength

Research to improve national resilience and protect the life and livelihood of the people

- Sewerage facility damage survey and response technology → Sewerage facility countermeasure guidelines
- Efforts in the wake of the Great East Japan Earthquake → Reflected in various technological developments and standards
- Support for the Kumamoto Earthquake and establishment of local laboratory → Early restoration of Aso Bridge, etc.
- Seismic performance verification method for dams against large earthquakes → Operation and further improvement of seismic performance verification method / Verification support → Earthquake response technology (deformation monitoring / seismic performance improvement method)
- Dike design (tsunami wave force), tsunami inundation simulation method, measures to promote evacuation in the event of a tsunami warning → Comprehensive tsunami countermeasures (coastal dikes resilient to tsunamis, development of community to reduce tsunami damage)
- Technology for disaster prevention, mitigation, and risk management of road structures → Revision of technical standards, three-year program for seismic reinforcement of bridges, spectral analysis information
- Technology for countermeasures against slope failure, fault displacement, and heavy rainfall in road structures, disaster detection technology, and implementation of new observation of strong earthquake
- Securing safety and reliability of building structures → Measures against long-period seismic motion, structural design method for tsunami evacuation buildings, seismic resistance measures for suspended ceilings, snow loads, wind resistance measures for tile roofs
- Improvement of safety in crowded urban areas → Urban fire simulator, operational guidebook for collective regulations for development of crowded urban areas
- Countermeasures against liquefaction of residential land → Countermeasure effectiveness calculation sheet, countermeasure guidance
- Sophistication of design standards for port facilities (support for performance and reliability design, sophistication of seismic and tsunami resistance design methods) → Revision of technical standards for port facilities in 2007 and 2018 Overseas development of port standards → Establishment of Vietnamese national port standards from 2017
- Performance specification of airport seismic design method (full-scale liquefaction reproduction experiment)
- Methods of rapid inspection and restoration for airport pavements during earthquake disasters
- Consideration of changes in external forces due to climate change and their impact on river management → Climate change adaptation measures (planning and review methods and various measures (resilient embankments against overflow))
- Advanced technology for radar rainfall observation: XRAIN (2010-) → Advanced technology for river level prediction: Flood Risk Line (2018-) → Flood risk prediction for long time ahead
- Method for assessing the level of flood control safety of small and medium-sized rivers nationwide and analyzing water inundation in and out of urban areas → Real-time inundation forecasting system → Method for providing inundation information maps for small and medium-sized rivers
- Method for setting the standard rainfall for sediment disaster warning and evacuation related to sediment disaster warning information → Start of announcement of sediment disaster warning information → Method for verifying the operational results of sediment disaster warning information → Improvement of the accuracy of sediment disaster warning information → Method for setting provisional standards after an earthquake, method for estimating the risk of the occurrence of sediment disaster considering topography and geology
- Technical guidelines for emergency response methods in the event of a large-scale landslide such as river channel blockage → Development of technology for emergency surveys based on the Act on Sediment Disaster Countermeasures for Sediment Disaster Prone Areas, method of landslide disaster deciphering survey by satellite SAR observation (single image) → SAR intensity images captured before and after disaster, human resource development in cooperation with Regional Development Bureaus, measures against deep-seated collapse
- Research on deep-seated collapse mechanisms at the Sediment Disaster Prevention Technology Center (Wakayama)
- Countermeasures against tsunami and storm surges → Dynamic hazard map for coastal areas
- Guidelines for designing port seawalls against tsunami, and tsunami evacuation simulation
- Utilization of marine shortwave radar, measures to secure containers during typhoons
- Estimation of sewer pipe deterioration → Integrity projection formula
- Start of periodic inspections of bridges on national highways under direct jurisdiction every five years → Inspection procedures, basic data collection procedures, collection and analysis of inspection data
- Strengthening of maintenance of road structures (establishment of Road Structures Department) → Formulation and revision of statutory inspection procedures, personnel training, provision of technical support, analysis of inspection data
- Sophistication of port maintenance and management (establishment of Port Construction Systems and Management Division) → Guidelines for inspection and diagnosis, LCC calculation program

Use

Research to increase the productivity and growth potential of society

- Sewerage technology vision, B-DASH Project → Technology development and implementation in the private sector
- Development of roadside-to-vehicle information collection and distribution mechanism → Standards and specifications for ETC 2.0 roadside equipment, etc. Roadside equipment on highways (2011-), roadside equipment on common roadways (2015-)
- Utilization of ETC 2.0 probe information → Support for logistics vehicle operation management, bottleneck identification method
- Analysis of inspection results and damage cases → Points to consider in planning based on maintenance and management, review of design earthquake motions, experiments on applicability of high-strength materials → Revision of the 2012 Specifications for Road Bridges
- Creation of coefficient for the standard parts of road bridge design → Full revision of the 2017 Specifications for Road Bridges
- Creation of performance specifications for road structures → Revision of technical standards, such as the 2015 Road Earthwork Standards
- Grasping and analyzing the movement of people in cities → Web-based person trip survey sheet, method to understand and analyze traffic flow using big data
- Airport GSE automated driving simulation
- Accumulation and analysis of maritime data → Acquisition and accumulation of vessel movement data (constructed by NILIM-AIS), satellite AIS data (Arctic Ocean route analysis) Sophistication of water area facility planning methods → Calculation program for shipping route specifications (J-Fairway) Sophistication of port terminal planning methods → Standard specifications of vessels, berth specifications
- Planning and evaluation of port policies (analysis of cargo movement, development of trade value and cargo flow forecasting models) → Super Hub Port Policy (2004 -), International Container Strategic Port Policy (2010 -), International Bulk Strategic Port Policy (2011-), Medium- and Long-term Port Policy PORT2030 (2018) Economic effects of ports and regional development → Method to calculate economic effects of cruise ships
- Airline demand forecasting model (trends in international airline network, LCC participation, analysis of trends in foreign visitors to Japan etc.)
- Improvement of productivity at construction sites It-based construction → Guidelines for completion management using 3D measurement technology etc. CALS/EC、BIM/CIM → 3D design data exchange standards, BIM/CIM related standards and guidelines, etc. Promotion of DX
- Promotion of public procurement and quality assurance in port and harbor construction → Specific procurement items for environmental goods etc., recycling guidelines, guide for applying for qualification as a competitor Introduction of ICT construction and BIM/CIM for port and harbor facilities → ICT construction standards for ports and harbors
- Support for the introduction of various bidding and contracting methods → Support and improvement of the application of the comprehensive evaluation bidding method Planning, application support, and improvement of new bidding and contracting methods → Technical proposal/negotiation method, project promotion PPP, bidding and contracting in disaster recovery, framework
- Establishment of port CALS (electronic procurement, electronic delivery, digitalization of documents, development and operation of databases, etc.), and efforts to enhance integration technology (surveys and analysis, support for cost integration systems, etc.)
- Airport facilities CALS system Airport pavement patrol inspection system Airport civil engineering work integration system

Beauty

Research to support comfortable and secure living

- Energy conservation and CO2 reduction in houses and buildings → Demonstration experiment using full-scale houses, energy-saving house design guidelines, zero energy, energy saving performance evaluation of buildings, web program, openings and improvement of energy saving performance at openings and indoor environment
- Hygienic evaluation of sewage reclaimed water → Reflection in the manual
- Performance study of membrane bioreactor → Guidelines
- - Physical environment of dams and downstream rivers - Development of environmental management technology for symbiosis with nature - River environment information sharing system → Research and technological development to examine river management and the environment in a more integrated manner
- Road environment impact assessment and conservation technology → Roadside air quality forecasting and assessment methods, technological method of road environment impact assessment
- Promotion of road greening: Inspection and diagnosis of street trees → Guide to manage trees that fall down Preservation and restoration of street trees → Guide to street tree restoration
- Urban heat island management→ Wind paths, management guidelines
- Performance specification of fire prevention and evacuation provisions in the Building Standards Act (full-scale fire experiments for fire prevention and fire resistance performance evaluation for the promotion of wooden buildings, etc.)
- Eutrophication management and water quality improvement in coastal areas → Natural environment of closed inner bays Restoration of rich marine ecology and protection of biodiversity → Man-made tidal flats and seaweed beds Marine nature restoration project Tokyo Bay restoration action plan Public-private partnership forum for the restoration of Tokyo Bay Global warming and blue carbon → Environmental value assessment in coastal areas
- Harmonization of disaster prevention and utilization → Creation of satohama
- General management of coastal areas
- Consideration for landscape in coastal areas, preservation of port heritage, and barrier-free
- New waterfront town development declaration
- Housing safety net → Utilization of private housing and public housing stock management, acceleration of the supply of reconstruction housing
- Condominium revitalization → Condominium reconstruction consensus building manual, condominium renovation manual and condominium complex revitalization manual
- Formation, distribution, utilization, and management of high-quality housing stock → Excellent long-term housing standard, existing housing current status inspection method
- Consolidation of urban structure → Land suitability evaluation program, accessibility index calculation program, future population and household forecasting tool
- Geometric structure of the road → Roads where pedestrians and vehicles coexist, such as the width of pedestrian lanes
- Geometric structure of roads → Bicycle traffic space, roundabouts
- Traffic safety measures on arterial roads → Method to select accident risk areas, support for planning traffic safety measures (establishment of implementation methods, planning of effective measures, accumulation and sharing of knowledge)
- Utilization of ETC 2.0 probe information → Method for extracting accident risk areas
- Compliance with building standards: addressing the issue of falsified structural calculations, etc.

Contribution to the field using technology

Advanced technical support for disaster and accident responses

For details, see p. 240

The NILIM dispatches researchers (TEC-FORCE advanced technical guidance team) immediately after a large-scale disaster or complex accident occurs to provide advanced technical support for investigating the cause, establishing recovery and reconstruction plans, and implementing countermeasures.

Knowledge and lessons learned from disasters are accumulated and reflected in advanced research on disaster prevention and mitigation measures while providing technical support for large-scale disasters overseas as a country with advanced capabilities in responding to disasters.

Survey of damage caused by Typhoon Faxai (#15) and Hagibis (#19), 2019

Hokkaido Eastern Iburi earthquake in 2018

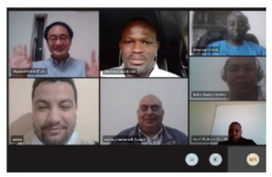
Status of the establishment of disaster response headquarters

International research activities

For details, see p. 246

Japan-US-Europe ITS meeting

Lecture on tsunami damage to bridges



Training session

Training in the development of seismic standards for bridges

Improvement of on-site technical capabilities

For details, see p. 252

The NILIM is providing training, accepting human resources, and offering on-site lectures in order to improve the technical capabilities required in the field, such as the ability i) to understand the technical standards accurately and to be able to apply them appropriately and flexibly, ii) to be able to deal with technical issues that arise in the field with a certain degree of independence, and iii) to be able to identify problems in the field and make proposals for improvement of the technical standards. At the same time, the NILIM is supporting individual fields when any problems arise through the provision of technical guidance and operation support tools.

Accepted trainee accompanying government-led diagnosis

Training session

Technical consultation

Data collection, analysis, and dissemination to society

For details, see p. 258

As the only national research institute in the field of housing and social infrastructure, the NILIM reorganizes and manages the vast amount of field data collected for administrative purposes while ensuring objectivity, accuracy, and reliability, and analyzes and reflects the accumulated data in its own research, as well as discloses them to society in an appropriate manner.

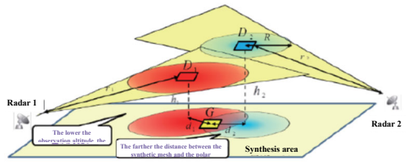
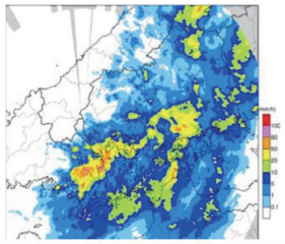


Image of the composite technology of C-band MP radar rainfall and X-band MP radar rainfall



←Example of observation using rainfall calculation algorithm suitable for C-band MP radar rain gauge
(250 m mesh, one minute observation)

Establishment of the environment that supports research

Management to support high quality research

For details, see p. 262

The NILIM has established and is operating a system for management that supports high-quality research based on the research policy revised in November 2017.

< Research Plan Review Meeting >

In order for the NILIM to conduct research efficiently and effectively as a whole, and to truly improve the research policy and important research of each research division, a research plan review meeting is held at the end of each fiscal year. At the meeting, participants discuss what the NILIM considers to be the important issues, what kind of research strategy should be adopted, how the NILIM should manage the research division in order to maximize both the research outcomes and the efficiency of operations, and decide on the operation and management policy of each research division for the next fiscal year. In addition, the results, progress, and problems of major individual research projects in each laboratory are reviewed to better plan the next fiscal year's research.

< Research evaluation >

For research subjects for which the NILIM makes its own budget request, the NILIM receives evaluations and advice from external experts, such as having the Research Evaluation Committee conduct preliminary, interim, end-of-project evaluation, and follow-up evaluations, which are reflected in research management. As for the evaluation of the operation as a research institute, it was necessary to establish an original evaluation method that was different from that of national research institutes. Thus, after setting up the evaluation axes (i: evaluate achievements and make improvements for the future, ii: clearly and systematically express intentions for activities and operations, and iii: emphasize the evaluation of quality, such as the depth of policy development and thorough management of results, rather than numerical values, such as the number of papers published), the NILIM proposes its own evaluation criteria in line with its research policy and then receives external evaluations.

< Promotion of research in collaboration with external organizations >

The NILIM is promoting research in collaboration with external organizations in order to incorporate technologies and knowledge from various fields more rapidly and flexibly in light of the accelerating changes in social conditions and technological progress in recent years and to strengthen efforts that will lead to further growth. The NILIM uses a wide variety of research methods that include joint research and commissioned research, as well as participation in the Strategic Innovation Program (SIP), social experiments for the social application of developed technological systems, and public solicitation of technologies for the development of new technologies.

Public relations

For details, see p. 270

In addition to the dissemination of research results, the NILIM is conducting public relations activities to raise awareness toward the importance of the NILIM in supporting society and to increase student interest for the recruitment of new staff members. The NILIM uses various means of publicity, including the website, e-mail service, the NILIM reports, lectures, visiting lectures, and public access to facilities.

Website

Cardboard bridge construction contest
(Submitted works are on display.)

Human resource development and research environment

For details, see p. 266

In addition to fostering research skills, the NILIM aims to foster a sense of understanding of government systems and the actual worksites, which is necessary for those who work closely with the government. In addition, by accepting personnel from universities and other research institutes, private companies, regional development bureaus, local governments, and other organizations, and by forming an organization with diverse personnel, the NILIM can also incorporate outside knowledge and ideas. Efforts to develop human resources include the holding of research presentations and study sessions within the NILIM, lectures by senior staff on the variety of expertise they have accumulated over the years for junior staff, and the publication of papers and provision of instructions on writing papers. In addition, the large-scale experimental facilities at the NILIM allow researchers to conduct experiments that simulate the actual field in detail, and by handling real data collected at the actual field, researchers can conduct research while imagining the actual field conditions.

Research presentation

Lecture on passing on experience and know-how

Levee breaching test using a large-scale experimental facility