

Missions the NILIM must accomplish

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1. Introduction

Challenges we must face in the future were clarified in 2014. The severity of population decline was widely discussed, revealing a shocking image of the future, when regional cities might disappear if the decline of people continues unchanged¹⁾. Natural disasters rampaged, causing severe damage. Record-breaking torrential rainfall never before experienced struck throughout the country. The Hiroshima sediment disasters of August 20 demonstrated that even cities are not safe from the danger of disasters. On the global scale, warming intensified, clearly showing that it is essential to sharply and sustainably reduce emissions of greenhouse effect gases for the next several decades in order to lower emissions to almost zero by the end of the 21st century²⁾.

We have begun working to resolve such problems without ignoring them. Looking at the domestic economy, we see that a variety of efforts to end the prolonged deflation are in progress. In response to population decline that inevitably impacts the future of the Japanese economy and the fortunes of its regions, the "Towns, People, and Job Creation Headquarters" has been formed and the government has begun unified efforts to resolve the problem³⁾.

The Ministry of Land, Infrastructure, Transport and Tourism has enacted Grand Design of the National Land 2050, which, led by Minister Ohta, looks far ahead to the year 2050, and sharing the people's sense of crisis, presents a philosophy of national land reconstruction that will open the door to a bright future⁴⁾. In the area of disaster prevention and mitigation, the Sediment Disaster Prevention Act has been partly revised to reflect lessons taught by last year's sediment disasters in Hiroshima. And in the field of maintenance, revision under a ministerial order now requires direct visual inspections of road bridges etc. In June of last year, the revised Act on the Quality Control of Gasoline and Other Fuels, that was enacted to ensure the

quality of infrastructure and of people to operate it, also revised the unit cost of labor and stimulated efforts to ensure people to continue the construction industry in the future by, for example, encouraging the employment of young people and women.

2. Five themes

I believe that the NILIM must, through its survey and research projects, resolve these challenges and play a pioneering role in efforts focused on the future. Below I will describe the research activity system at the NILIM.

Survey and research conducted by the NILIM is broadly categorized under the following five main themes.

One is **disaster prevention and mitigation**.

We conduct research to develop means of predicting locations at danger from disasters or spotting precursors to more quickly and accurately inform concerned persons, or of quickly starting rescue and life-saving activities after a disaster and supporting early restoration and reconstruction, and we complete hard and soft countermeasures considering the fact that the way disasters occur has changed.

The second is **Infrastructure maintenance**. We wish to prioritize research that is highly urgent and for which there is a great social need, such as preparing standards that will permit efficient inspections and diagnosis while ensuring reliability.

The third is **intelligently using the existing stock**. We are conducting research in pursuit of ways to effectively and intelligently use existing infrastructure by, for example, mitigating congestion and creating a safe traffic environment through the use of ITS.

The fourth is **forming sustainable and vigorous national land and regions**. We wish to prioritize research to prepare for the future by, for example, responding to global warming by decreasing energy consumption by homes, which is an area where it has increased remarkably, and by providing

environments in which elderly members of the aging society can live without fear.

The fifth is **execution procedure's innovation**. In addition to innovative bidding and contract mechanisms and methods, we wish to also improve productivity by revolutionizing and improving survey, design, and execution technologies and to reduce the burden and increase the efficiency of administrative and construction sites.

3. Four activities

To undertake specific efforts to tackle the five themes, we conduct our activities constantly guided by the four principal pillars.

The first pillar is **research and the preparation of draft technical standards** to support planning and implementing technological policies. It is vital to constantly accurately grasp and to respond to social needs and problems.

The second pillar is offering complete **consulting** services concerning problems that occur in the field. Immediately after the Hiroshima sediment disasters, personnel of the Sabo Department went to the scene to give advice permitting safe and prompt rescue and first-aid activities. An extremely important role of the groups of experts in infrastructure who quickly enter disaster and maintenance areas is to help resolve problems by providing reliable advice. At the end of last year, a technical consultation office was established to provide a unified response to requests for technical advice concerning disaster prevention and mitigation and concerning maintenance. We wish to strengthen our ability to respond quickly and correctly to challenges faced in the field.

The third pillar is **encouraging the transfer of technology** to society. By providing a full program of training for working level personnel involved in disaster prevention and in maintenance, the NILIM is trying to place its technologies, knowledge, and know-how at the disposal of field workers.

The fourth pillar is playing the role of **coordinator**. For maintenance that has barely begun in particular, many technologies have to be developed in a short period of time. So we at the NILIM wish to play the coordinating role we call the "pivot of the parasol", that permits us to deepen our links with other concerned organizations to take an overarching view of the overall problem and past achievements of technological study to obtain results efficiently without duplication.

4. In Conclusion

It is important that the accumulated achievements of surveys and research by the NILIM not only bear fruit in technology policies, but that they are applied in the field that is on the front lines of infrastructure

provision. I believe that the four pillars of our activities described above are indispensable roles we must fill in order to bring our achievements to life in the field.

Focusing on putting the argument that public works are unnecessary to rest and ensuring that the accumulated social infrastructure provides our citizens with great benefits, we are establishing an environment in which we will strive to tackle a variety of problems that must be overcome. Convinced that our mission is to find ways we can be of service in the field, we want all our researchers and other workers to strive as one to resolve these problems.

[Sources]

1) Japan Policy Council, Subcommittee to Study the Problem of Population Decline, Proposals

<http://www.policycouncil.jp/>

2) Intergovernmental Panel on Climate Change (IPCC), Fifth Assessment Report, Announcement of the Integrated Report (MOE web site)

<http://www.env.go.jp/press/files/jp/25330.pdf>

3) Towns, People and Job Creation Headquarters (Prime Minister's Residence web site)

<http://www.kantei.go.jp/jp/singi/sousei/>

4) National Land Grand Design 2050 --Formation of Convection Promotion Type National Land--(MLITT web site)

http://www.mlitt.go.jp/kokudoseisaku/kokudosisaku_tk3_000043.html