Future urban research projects examined based on the evaluation of research and development

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1. Evaluation of research and development

FY 2018 was the year of the NILIM institution evaluation, which is conducted once every five years. An institution evaluation is one of the research and development evaluations of the NILIM. It is a voluntary evaluation of all the research and development projects conducted at the NILIM during the past five years and the administration of the institution based on external opinions. The results are utilized for future activities after making decisions on improvements, enhancement of quality, and distribution of resources conducted following the evaluation.

This article focuses on the institution evaluation from the perspective of the evaluation of research and development and the reflection of findings on future activities. Findings in this article will be reviewed and used as the reference for future urban planning researches.

2. Results of the institution evaluation

Upon the institution evaluation, eight evaluation criteria, such as ① Research and development to support the planning, proposal, and promulgation of land and transport policies, and ② Technical support for responses to natural disasters and accidents and the advancement of responding technologies, were set based on the NILIM Research Policy that was entirely revised in November 2017. General opinions and opinions on individual evaluation criteria were then received from the evaluation committee (chairperson: Toshio Koike (National Institute for Educational Policy Research), the Public Works Research Institute, Risk management International Center). The following includes the opinions received. For opinions on the evaluation criteria, the main issues mentioned in the committee are selected for this article.

General opinion

In regard to the implementation and promotion of research and development, cross-sectional activities should further be conducted. In regard to the institution administration, the development of productive research environment for individual faculties should be conducted. For both of these aspects, how people who receive the research outcomes from the NILIM use them should be made visible, and international activities should be promoted.

①Research and development to support the planning, proposal, and promulgation of land and transport policies

Besides short-term research themes that respond to needs, it seems as if no long-term research theme is set and implemented.

②Technical support for responses to natural disasters and accidents and the advancement of responding technologies

It is not easy to see that NILIM activities and research have resulted in the acceleration of disaster restoration and damage reduction.

③Support for the improvement of on-site technical capacity at Regional Development Bureaus and other facilities

Mid-to-long-term measures (plans) to ensure the improvement of the quality of on-site technical capacity are unclear.

④ Data gathering, analysis, and management to develop technical foundation for formulating policies and utilization of the information for the society

A concern is whether the information is organized in a way that is readily usable as open data by government organizations and the private sector.

⑤ Development of management system to support high-quality researches

A concern is that the number of joint research projects and the number of cooperating facilities are decreasing.

⑥ Nurturing of human resources who have technological backgrounds and have the ability to observe policy development from the perspectives of both researchers and administrator/on-site workers

It is necessary to check whether requested human resources have the ability to observe policy development from the perspectives of both researchers and administrators/on-site workers.

⑦ Ownership and the reinforcement of the function of experimental facilities to support technological research and development in the field of housing and social capital

It is necessary to identify whether experimental facilities are in the condition that will allow effective uses. It is also necessary to properly analyze the maintenance of experimental facilities and clarify issues and problems. Facilities should be updated based on plans.

⑧ Effective public relations of research outcomes and research activities

Clear strategies need to be established to engage in effective public relations activities. More efforts are also needed to establish the NILIM as a world-class brand.

3. Handling of research outcomes -For the future urban planning research-

The NILIM is organizing and releasing the handling of research outcomes. Thus, this article provides some additional information concerning past activities and future plans from the standpoint of urban planning research.

The first is the promotion of cross-boundary activities as mentioned in the general opinion and ④ and ⑤.

The same issue has been raised in the past two times in the institution evaluations in FY 2008 and FY 2013. This is a life-long issue for the NILIM as it is the general research facility of land and transport technology policy. Meanwhile, a difference from up to the last evaluations is the expectation for open innovation to actively incorporate knowledge and technologies from outside of the NILIM under the intensifying global competition over innovation in recent years and for the generation of knowledge and values beyond the conventional framework. Actually, the number of research and development programs conducted through the cooperation of different fields and industry, academia, and government has been increasing as a means to realize above.

It is possible for Urban Planning Department to nurture and secure human resources and function as a control tower by effectively using its nature as the organization engaging in general research. It is also important to conduct research and development to support the activities of various cities facing the problems of depopulation and an aging population to establish independent innovation, create new businesses and economic activities, revitalize regional economies, and consequently result in reinvigoration of rural areas, for example.

The second point is the implementation of long-term activities as mentioned in ① and ③. This point has also been mentioned in the past.

The NILIM has set individual research and development themes based on the various factors of socioeconomic challenges and trends, national plans and future outlook of the private sector, and unexpected phenomenon, such as natural disasters and accidents. In this process, short-term themes that respond to needs are readily understood and prioritized. Meanwhile, long-term problems where the outcomes are difficult to recognize and unique themes based on the motivation of researchers are often put off. Actually, the budget for fundamental research has been significantly decreasing in recent years.

Research, development, and especially innovation are associated with uncertainties, the requirement of the long term before producing outcomes, and impossibility to forecast outcomes. Given the above, it is necessary to ensure that fundamental research that requires long-term commitments based on political strategies and demands, as well as academic research based on free ideas that may become the source of future innovation, can receive stable funding under proper evaluations.

To realize Super Smart Society (Society 5.0) in the future, the Urban Planning Department is going to engage in the following activities under a long-term perspective while cooperating with relevant parties: research to deepen the observation of how technological development will affect cities and the state of humans and cities, development of technologies to organize and utilize data about urban information owned by various entities through sharing and coordination, and activities that would improve the status of the NILIM in domestic and international research network.

The third point is about the development of the productive research environment for individual research and the nurturing of human resources as mentioned in the general opinion and ⑥.

The NILIM is accepting summer college interns every year and offers them the experience of working in research facilities. The Urban Planning Department is one of the most popular fields among students and receives many applications from students every year. In addition, some research processes are outsourced to urban planning consultants when conducting individual research. Young engineers are actively working in such processes. (A notable characteristic is that many female engineers are working in this field.) On the other hand, people-based connections with local governments and foreign countries have been weak.

There are various reasons for such a state, but urban planning research so far did not have enough diversity or fluidity in human resources, and the accumulation of human resources has also been insufficient. The research environment seems as if it has not changed much from 40 years ago. Human resources support research and development, and the environment plays a major role in accumulating the human resources. It is necessary to consider improving workstyles to realize flexible research environments where diversified human resources can work successfully.

[Reference information]
1) The NILIM Reference #1057, report by National Institute for Land and Infrastructure Management, "Evaluation of Research and Development Institutions" (FY 2013-2017), February 2019, the NILIM
http://www.nilim.go.jp/lab/bcg/siryou/tnn/tnn1057.htm
2) Integrated Innovation Strategy, June 15, 2018, Cabinet Decision
3) "Mid-term Summary of Basic Policy Conference on National Land and Technology Policy" November 2018, Social Capital Development Council, Council for Transport Policy, Technical Subdivision, Technical Group, and Basic Policy Conference for National Land and Transport Technology Policy