
Considerations on Research Institution Evaluation

--- For better research management

ITO Masahide (Ph.D.), Executive Director for Research Affairs

Keywords: research evaluation, Institution Evaluation, research policy, research management

1. Implementation of "Research Institution Evaluation" Every 5 Years

The National Institute for Land and Infrastructure Management (NILIM) conducted a "Research Institution Evaluation" ("Institution Evaluation") in fiscal 2018 by hearing opinions in the experts committee. Research activities and the performance of institution operations were evaluated for the five years from FY2013 to FY2017.

The Institution Evaluation does not evaluate individual research topics and is not regard individual researchers since it is conducted every five years, and the preparation of presentation materials or holding of a committee meeting is apt to be considered as the purpose. This paper intends to review the last evaluation conducted, reconsider its significance and organize ideas for improving future research management.

2. Meaning of Institution Evaluation for NILIM

1) Grounds for requiring Institution Evaluation
First of all, why is it required to conduct an Institution Evaluation? Under the Japan's National Guideline on the Method of Evaluation for Government R&D (decided by Prime Minister in December 2016), institutions conducting R&D activities with national funding are required to "conduct evaluations" at an interval of "3 to 7 years" in accordance with the "middle- (long-) term objectives, etc."

2) Institution Evaluation by NILIM, which is different from the National Research and Development Agency

"Middle- (long-) term objectives" used herein are mainly based on the National Research and Development Agency (NRDA). For NRDA, the Act on General Rules for Incorporated Administrative Agency provides that the competent minister shall provide "objectives". On the other hand, NILIM is excluded from the application of the same act and no medium-term objectives are provided because it needs to flexibly respond to administrative needs as an internal agency of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT). NRDA is evaluated mainly based on the degree of achievement in light of the numerical indicators provided by the medium-term objectives, while an evaluation method needed to be established independently for NILIM since the same

evaluation method was not applicable. For this reason, we first set up an evaluation axis based on the following.

- Evaluate performance and work for improvement based on evaluation results.
- Show the intentions of activities and operations clearly and systematically.
- Value the presentation of quality, such as the depth of policy development of performance and thorough implementation of management measures, rather than the number of papers, etc.

3. Outline of Institution Evaluation

1) Evaluation axis

Figure 1 shows the contents of the material explained in the committee. The first half describes the performance of research activities and the last half represents the improvement in institution operation; all the contents, including details from (1) to (8), are in accordance with the research policy (revised in Nov. 2017). Revision of the research policy was not intended to respond particularly to the Institution Evaluation but served as a basis for systematically showing the intentions of NILIM.

2) Evaluation results

The committee summarized its evaluation of NILIM

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| I. Implementation / Promotion of R&D |
| (1) R&D to support planning, drafting, and dissemination of land, infrastructure, and transport policy |
| (2) Advanced technical support for response to disasters / accidents and upgrading of countermeasure technologies |
| (3) Support improvement of on-site technological capability of Regional Development Bureaus, etc. |
| (4) Collection, analysis, management, and social return of data serving as technical infrastructure of policy formation |
| II. Institution operation |
| (5) Establish a mechanism of management to support high quality research. |
| (6) Develop personnel who foresee policy development in terms of both research and administration / site based on technology. |
| (7) Maintain and strengthen the functions of test facilities, etc. that support technical research / development in the housing / social capital fields. |
| (8) Effective transmission of research findings and activities |

Fig 1: Contents of institution evaluation and presentation material

as follows: "Achieved outstanding performance", "Constructed a system that enables high-quality research", and "Sufficiently appropriate", while opinions for improvement were also provided (described below). The presentation material and deliberation on the day evaluated are separately summarized in the report ¹⁾.

4. Review of the Significance of the "Institution Evaluation"

Matters we noticed through this evaluation are roughly organized into the following three phases.

1) Constant awareness to improve research activities and institution operations

Since the "Institution Evaluation" is formally an "ex-post valuation" of five years, it is based on results and performance.

For the performance of research activities, however, simple aggregate or examples of performance required by the draft of evaluation criteria may be considered as activities with less uniformity because NILIM responds to various administration departments and needs. For this reason, we clarified what is "research that supports policies" and focused on what can be explained in common across the frames of administration and research fields.

This also applies to "institution operations", as merely listing various examples of improvement is hard to understand what the overall aim is. For specific activities, including cooperation with internal / external research management or outside parties, human resource development, and maintenance, management, etc. of facilities, we made it possible to provide the underlying concept of such activities and specifically explain the content of improvement in light of the concept.

However, the explanation itself is not a goal. What is important is the process of repeating discussions, sharing the concept as an organization, and using the concept for autonomous research activities and system improvement.

2) Recognition of the original significance triggered by "Institution Evaluation"

This Institution Evaluation also served as an opportunity to organize / recognize anew the meanings of terms in common use.

Taking the aforementioned "research that supports policies" as an example, it had been defined before as "drafting / implementation of technical standards, etc.", but it has been newly organized including the scope of "etc.", the meaning of "drafting" as research, and the roles played in "implementation."

There have also been increasing requests to NILIM in recent years for open data. In conducting this Institution Evaluation, we organize anew data held by NILIM at present, circumstances of acquisition / possession, original owner, characteristics of each data, etc. Various discussions would be required for open data and it seems that we have obtained a hint for a

future stance on data handling.

3) Assimilation of experts' opinions and merging of intentions

As the main opinion, further promotion was advocated with regard to the "Visualization of the use of findings to the public" and the "Promotion of international projects." It is also important to consider how to use opinions of experts for improvement. It is necessary to assimilate their opinions with proper intention, without sticking to only the indicated content.

For example, in the former opinion, attention should not be focused only on matters such as the improvement of publicity or the increase in press releases. These are just means and improving recognition of NILIM itself is not an ultimate purpose. It is necessary to have an idea of what the meaning of recognizing NILIM in policy realization / implementation is and how to position and conduct PR activities in the flow of research to that end.

For the latter opinion, quantitative indicators are important, but it would be more important to study from a viewpoint of what kind of international activities are required as an internal agency of the MLIT.

5. Conclusion

In the Institution Evaluation, what I felt in the series of actions from preparation to post-evaluation is described as follows.

As mentioned a little in the beginning, the Institution Evaluation is not a transient event but should be considered as an opportunity to review, from an external viewpoint as well, the continued effort to improve research activities and operations. In addition, since evaluation results are also deeply related to individual research operations by way of a specific policy / mechanism of an organization, not only management departments but individual researchers should consider the future vision of their research activities and have interest in the operations of the institution.

The content of this paper is mainly for the personnel of NILIM but is considered to have parts in common with research activities and management in general. We will be glad if this paper is used as reference.

☞ **See the following for details.**

1) Technical Note of NILIM, No.1057
<http://www.nilim.go.jp/lab/bcg/siryounn/tnn1057.htm> ¹