
Sewerage Technology Development and Introduction Dissemination

Shigeharu INOUE, Director, Water Quality Control Department

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1. Introduction

As the trends of declining birthrate and aging and depopulating society are accelerating, it is required to establish a society enabling sustainable development while addressing the issues of shortage of energy, global warming, increasing risk of major disasters, aging of infrastructure, deterioration of financial conditions in the central and local governments, etc. In order to such changes in socioeconomic conditions, Sewerage Works has been working for development, introduction, etc. of low-cost and highly efficient technologies to promote energy creation, energy saving, inundation control measures, aging countermeasures, etc. In development, introduction, etc. of such new technologies, not only support of technology development but management enabling local governments as sewerage administrators to introduce smoothly new technologies for solving their issues is important. NILIM is indicating the direction of sewerage technology development as a vision to promote technology development for issue solution and considering for introduction dissemination of new technologies through follow-up on the vision, etc.

2. Vision and follow-up for technical development

In technical development, it is important to share the direction of policy, consistency with on-site needs, etc. among the persons concerned, etc. In development of sewerage technologies, in response to the policy vision "New Sewerage Systems Engineering Vision" (formulated on July 2014), "Sewerage Technology Vision" ("Technology Vision") was formulated in December 2015 in order to solve technical issues. This Technology Vision aims to promoted steady technical development by showing technical goals and technical development items needed to achieve the goals with road maps for 11 technical development fields and by specifying the issues that should be addressed by persons concerned in the central government, business entities, private-sectors, research institutions, etc. in order to solve important issues in the future sewerage work, including measures for aging of sewerage facilities, inundation control measures responding to torrential rain etc. that frequently occur in recent years, and promotion of the effective use of sewage resources. Of the road maps,

particularly those for which R&D is urgently required or those that indispensably required mid- to long-term solution of issues continue to be published as priority issues on road map, and the direction indicated by the Technology Vision is to be realized by concentrating the central government's support for development, etc. In addition, progress control, such as confirmation of achievement, is important for promotion of technical development, As an opportunity of follow-up on the Technology Vision, "Conference on Technical Development of Sewerage Systems" ("Technical Conference"), established in January 2016 and composed of industry, academia and government, has been utilized for progress control of the Technology Vision, review reflecting the trend of up-to-date R&D, etc. In fiscal 2017, in response to the 2017 basic policy on economic and fiscal management and reform and the 2017 future investment strategy, the sewage heat utilization technology was positioned as a technical development item in order to further study energy creation and energy saving in the sewerage service. In addition, in response to the New Sewerage Systems Engineering Vision Acceleration Strategy, formulated in August 2017, technical development etc. contributing to improvement in labor productivity, such as ICT technology, were also included in the technical development items. NILIM intends to continue to support the realization of policies from technical viewpoint.

3. Introduction dissemination of new technology

As a measure to support introduction dissemination, etc. of new technologies by the central government, Breakthrough by Dynamic Approach in Sewage High Technology ("B-DASH") has been implemented since fiscal 2011. This project aims at nation-wide development by demonstrating innovative sewerage technologies in real sewage treatment facilities, etc., creating guidelines, and utilizing the know-how and funds of private enterprises. Until now, 34 technologies were demonstrated, for 18 of which guidelines were created. In addition, research etc. in the scale of pilot plant have been conducted to demonstrate technologies for issue solution. Note that since B-DASH is an empirical study, it should be promptly disseminated after

the research is finished. To this end, we continue to establish a dissemination strategy at the beginning of research and further clarify introduction dissemination targets during research so that we are able to effectively explain details of technology and examples of dissemination / development to local government personnel etc. and respond to consultation from them about introduction of technology after making guidelines, and thereby promote understanding, introduction dissemination, etc. for new technologies.

NILIM is also making consideration etc. for introduction dissemination of developed technologies centering on six activities through operation of the Technical Conference, etc. (see Figure). In this regard, it is important to conduct technical development etc. strategically according to the importance and urgency of technical issues through proper matching of needs, i.e., issues facing local governments, and seeds owned by universities, private enterprises, etc., i.e., technical elements that serve as the core of development, etc. Accordingly, we first of all investigated necessity for technical development and issues on technology introduction in local governments and grasped details through hearing, etc. From the results of the questionnaire surveys conducted for local governments, etc., it was found with issues of new technology introduction that the main hurdle in introduction is a concern about procurement or performance of technology in big cities, such as "Estimation / technical standard" and "Uncertainty about reliability" and starting point of consideration of introduction in small cities, such as "Shortage of information" and "Difficulty in selecting technology." Under such circumstances, to solve "shortage of information" and other issues, we are considering wide

transmission of information on good examples from local entities using the Technical Conference as platform, while mapping systematically the contents of studies in the water environment field and collaborating with the activity of "Project GAM" of the Sewerage and Wastewater Management Department of MLIT, which is implemented to strengthen cooperation of industry, academia and government. For "Estimation / technical standard, etc.," we are going to establish a subcommittee in the Technical Conference, where persons concerned make discussion based on specific examples including new technical development methods.

4. Conclusion

Almost three years have passed since formulation of the Technology Vision. We are going to grasp in detail the progress in activities in each field and review it on the whole. In addition, in future development, etc. of sewerage technologies, considering that an "era of management" has already begun, the following five viewpoints are also important --- (i) CAPD starting with stock evaluation, (ii) Utilization of civilian power including residents, (iii) Return to society through excavation and utilization of information, (iv) Awareness of time as a valuable asset, and (v) Flexible and mobile response to uncertainty. We intend to communicate widely the Technology Vision, etc. and use them for technical development etc. from new viewpoints including cooperation with other fields.

☞ See the following for details.

- 1) 2016 Sewerage Technology Development Report
<http://www.nilim.go.jp/lab/eag/gesuidougijyutsukaihatsureport.html>

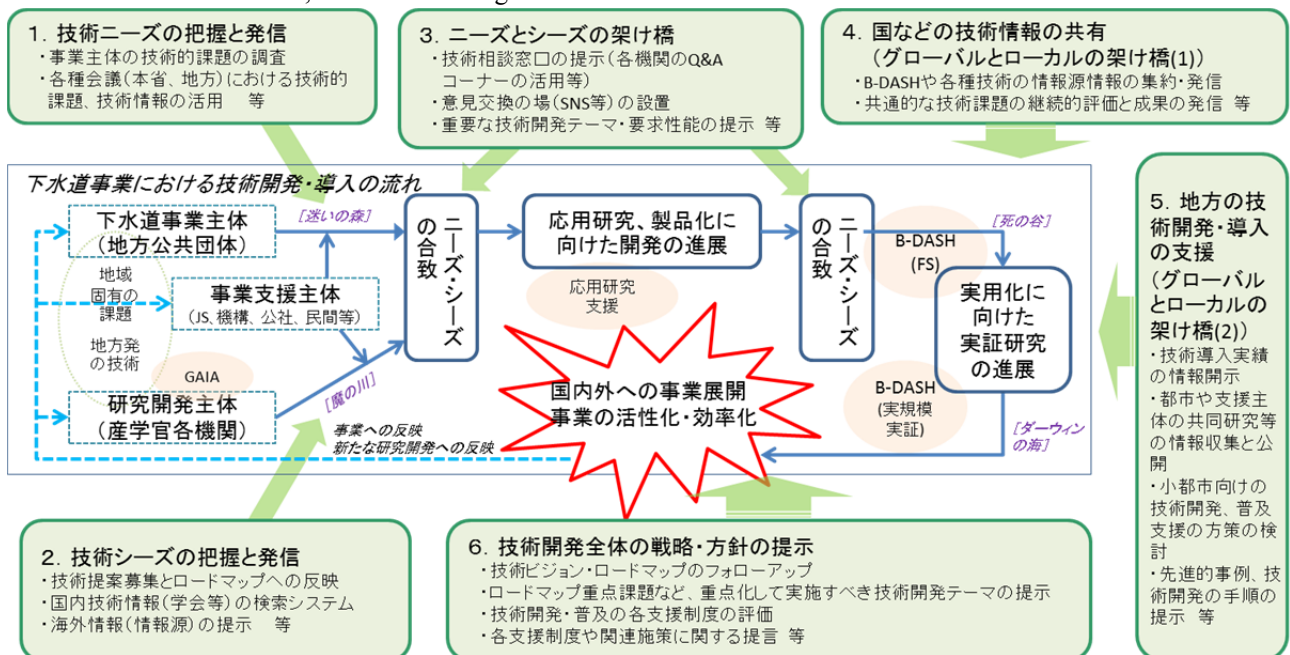


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