Surveillance study on convenience calculation technique in sewage works by CVM method (virtual money making)

Whole term	2002.1 ～ 2002.3	

(Purpose)

In conducting social infrastructure projects, as more efficiency and transparency is required, there have been increased demands in disclosing and assessing its outcome. The effective method is considered to be a cost-benefit analysis in which the cost and benefit, converted into money, is compared.

With respect to the cost-effect analysis of sewage treatment facilities, "Unification of the cost-effect analysis method" is notified as of December 14, 2001 by the three ministries: Ministry of Land, Infrastructure and Transportation, Agricultural Forestry and Fisheries Ministry and Ministry of the Environment. The notification designates "CVM method", a unified cost-benefit calculation method, for the sewerages.

Since "Instruction manual for the cost-effect analysis for sewage projects (draft)", produced in March 1998, only introduces the overview of CVM, supplemental documents such as "Guide to the CVM cost-benefit calculation pertaining to the sewerage projects" are required.

The survey as trusted by the Ministry of Land, Infrastructure and Transportation is conducted with the purpose of improving living environments utilizing sewerages and producing the guide to analyze the benefits, including maintained public basin water quality, with the CVM method.

(Result)

- The CVM (Contingent Valuation Method) is a method to directly ask residents about the amount they are willing to pay (WTP) for the difference between two contingent scenarios, with or without building sewerages. The benefit is calculated by multiplying WTP by the number of households.
- Fig. 1 shows the procedures of the cost-benefit calculation.
- Following is defined in the survey planning: (1) how to ask WTP; (2) how to conduct the questionnaire; and (3) the number of copies of the question sheets distributed.
- Following is defined in producing the question sheet: (1) standard composition of the question sheet; (2) contingent scenarios; (3) how to ask WTP; (4) reasons for WTP and (5) properties of respondents.
- The preliminary survey defines its purpose.
- Following is defined in conducting the questionnaire: (1) how to conduct the questionnaire; (2) scope of the questionnaire subjects; (3) subjects of the questionnaire and (4) the number of question sheets.
- Following is defined in the estimation of total WTP; (1) abnormal data elimination and (2) calculation of WTP.
- The calculation methods for a variety of benefits including improved living environment, toilets with sewerage and water quality maintenance of the public basin are defined as well as the examples of the CVM cost-benefit calculation results.
- The CVM method is designated as the unified cost-benefit calculation for sewage treatment facilities by the notice issued by the tree ministries. As more cost-benefit calculations are expected to employ the CVM method, we hope this paper would be helpful for those who conduct the survey.

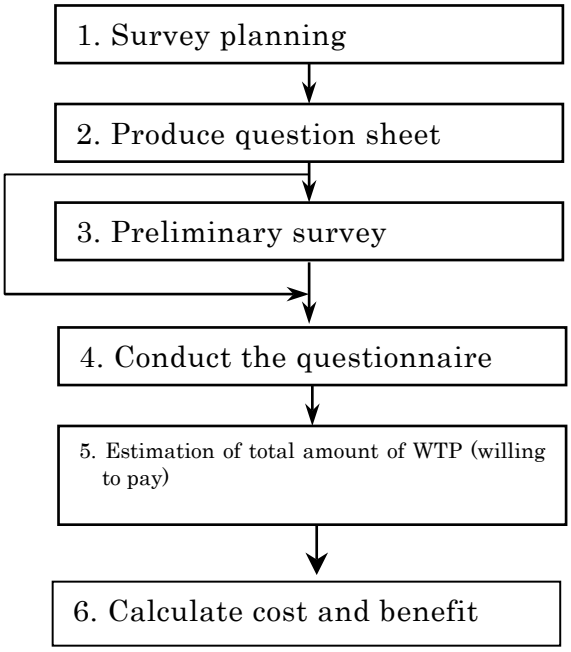

Fig. 1 Procedure of the CVM method for cost-benefit calculation

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Person in charge of study: Miyahara Shigeru, Kuribayashi Sakae, Uematsu Ryuji, Nikaido Etsuo, Nojiri Maremori

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