

**IR-3 Establishment of Environmental and Natural Resource Accounting System
(Final Report)**

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Environmental and natural resource accounting (ENRA) attracts more and more attention from the world. United Nations adopted the System of integrated Environmental and Economic Accounting(SEEA) as a part of 1993 revision of the System of National Accounts(SNA). This study as a whole aims at establishing methodological framework of Japanese environmental accounting system. The study consists of four sub-themes.

In the "Methodology on ENRA reflecting Global and International Issues", following studies were carried out. (1)Review of the definition and goals of "Sustainable Development", (2)follow up of international activities on ENRA, (3)survey of problems and data availability in applying the SEEA to international issue, (4)theoretical framework for accounting environmental impacts by international money flow, (5)database and information system for the analysis of environmental changes caused by imported natural resources, (6)calculation of international balance of embodied GHG emission through trade, and (7)assessment of the effectiveness of Green-GDP as a tool for stabilizing climate change and moderating international relationship.

In the "Study on Forest Resource Accounting", in line with the research plan based on review of environmental accounts in Norway, France etc., methodologies for developing forest accounting system of Japan were studied. According to the framework of French Patrimony Accounts, (1)French satellite accounts on forest management and recreational use, (2)close examination and evaluation on data on forest sector/resources/products, and (3)experimental work for methodologies for handling and processing statistical data through GIS were made.

In the "Agricultural Environment Resource Accounting(AERA)", we discussed the evaluation method of agricultural environmental resources and the framework of environmental accounting which is in consistency with financial accounting. (1)We examined the assumptions rights and price evaluation of Contingent Valuation Method and showed how to avoid biases of CVM. (2)We discussed pollution stocks using a concept of environmental debt which is defined as undisposal service from this term to next one.

In the "The Research Study to Add the Integrated System of Environmental and Economic Accounting to the System of National Accounts", (1)A basic framework for the SEEA that is specific to Japan and taking Japanese environmental issues into consideration was prepared. (2)The conceptual definitions of the rows and columns of the matrix which represents the basic framework and practical definitions of each cell were mostly completed. (3)The types of necessary data for estimating actual and imputed environmental costs and where such data are were brought to light in most cases, (4)Based on a trial estimation for 1985 and 1990, tentative values, shares to GDP, changes in five years etc. of many kinds of actual and imputed environmental costs were obtained.