

IR-1.2 The Research on the Establishment of the Integrated Environmental and Economic Accounting

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Total Budgets for FY1998 - 2000 34,780,000 Yen (FY2000 11,014,000 Yen)

Abstract When the United Nations revised the System of National Accounts (SNA) in 1993, introduction of “the Satellite System for Integrated Environmental and Economic Accounting (SEEA) as a satellite account for SNA was advocated, and its concept and structure were presented in the revised SNA Manual and “Handbook of National Accounting; Integrated Environmental and Economic Accounting” that was separately published by the U.N.

In light of this, research and development on Integrated Environmental and Economic Accounting has been carried out in Japan as a medium and long term task since 1991, and the primary trial estimates and secondary trial estimates were published in 1995 and 1998 respectively.

However, the System for Integrated Environmental and Economic Accounting itself included some things that were yet to be theoretically matured, and in presenting the secondary trial estimates in 1998, various basic data were presumed and figures were divided and rounded off based on the theory. For these reasons, in the study conducted from 1998 to 2000, a Waste Account which was a part of the Integrated Environmental and Economic Account and focused on waste disposal and recycling as well as an Environmental Protection Expenditure Account Matrix which indicated economic activities for environmental protection, was developed to elaborate the System for Integrated Environmental and Economic Accounting.

Keywords SNA, 93SNA, SEEA, Environmental Protection Expenditure Account, Waste Account

1. Introduction

The “System of National Accounts (SNA)” is a comprehensive statistical system for systematically and statistically recording flow and stock from economic activities in a nation.

Based on the SNA, however, it is difficult to clarify details of activities for environmental protection included in economic activities and it is impossible to determine the environmental degradation caused by economic activities (external diseconomies.) Therefore, the establishment of a statistical system that can clarify relationship between the environment and the economy is desired.

2. Research Objective

According to the international trend of sustainable development, it is required to develop an accounting system consistent with SNA that can evaluate the environmental burden caused by economic activities on a uniform basis and gain comprehensive awareness regarding the environment and the economy. Based on this recognition, the Satellite System for Integrated Environmental and Economic Accounting (SEEA) shall be developed as a practical tool for apprehension and analysis of the relationship between the environment and the economy.

In order to analyze the relationship between specific environmental issues and the economy, a Waste Account focusing on waste disposal and recycling as well as the Environmental Protection Expenditure Account indicating economic activities for environmental protection shall be developed.

3. Results

(1) Outline of the Resulting Trial Estimates of the Waste Account

1) Waste treatment services

The total amount of charges for waste treatment services in 1995 was 3.0947 trillion yen. With respect to suppliers of the services, about 60% or 1.8719 trillion yen were industrial services and about 40% or 1.2227 trillion yen were governmental services.

2) Recyclable goods

The total amount for the supply of recyclable goods in 1995 was 781.2 billion yen (amount of output 649.6 billion yen, import 131.5 billion yen— in 1990, the total amount for the supply was 1.1670 trillion yen, within which amount of output was 975.3 billion yen, import was 191.7 billion yen), within which the majority of the output was from fixed capital formation by industries (314.6 billion yen, structural proportion

48.4%) and from the manufacturing industry (232.2 billion yen, structural proportion 35.7%). The amount of the recyclable goods output in 1995 decreased from that of 1990. The major reason of this is decrease in output of iron scraps and nonferrous metal scraps. However, due to the fact that the Physical Table for 1990 is incomplete, whether this decline was caused by decrease in the quantity of the output of such scraps or by fall in market price could not be determined.

3) Imputed environmental costs related to waste disposal

Monetary value of environmental load caused by waste disposal (imputed environmental costs) was estimated with respect to final disposal, air pollution caused by combustion of waste and global warming.

The monetary value related to waste disposal in 1995 was 1.0008 trillion yen, within which 8.5 billion yen was for air pollution, 40.7 billion yen was for global warming, and 951.6 billion yen was for final disposal.

(2) Outline of Trial Estimates on the Environmental Protection Expenditure Account

1) Production of Characteristic Services (Table B)

“The output of Characteristic Services” in 1995 was 6.9218 trillion yen, within which non-market output was 4.1753 trillion yen, market output was 2.0798 trillion yen and ancillary output as internal activities for environmental protection within offices was 666.7 billion yen.

2) National Expenditure by Components and by Users/Beneficiaries (Table A)

“The national expenditure for environmental protection” in 1995 was 16.0108 trillion yen, 3.2% of GDP.

As for the breakdown, current expenditure was 9.8945 trillion yen and capital expenditure was 6.1163 trillion yen.

3) Financing of National Expenditure (Table C)

In “the National Expenditure for Environmental Protection”, expenditure by general governments was the largest, 12.3341 trillion yen, followed by technical producers in industries, 1.7020 trillion yen, non-technical producers in industries, 1.0868 trillion yen, and household, 887.8 billion yen.

(3) Outline of the Integrated Environmental and Economic Account

The net domestic product of activities for environmental protection by industries was 1.4781 trillion yen and the net domestic product of activities for environmental protection by governments was 1.0265 trillion yen. The sum of these two, 2.5046 trillion yen was the net product of activities for environmental protection in

Japan.

In the imputed environmental costs including monetary value of environmental degradation, 3.6402 trillion yen was related to production activities and 1.9362 trillion yen was related to final consumption expenditure. As for environmental improvement through the restoration of nature, 9.2 billion yen was related to water and 8.9 billion yen was related to soil. The total of the imputed environmental costs in 1995 was 5.5583 trillion yen.

The environmentally adjusted net domestic product, which was calculated by deducting the imputed environmental costs from the net domestic product, was 400.3168 trillion yen, and the ratio of the imputed environment costs to the net domestic product was 1.4%.

(4) Problems of the Integrated Environmental and Economic Account

These estimations clarify that even such an estimation focusing on a particular environmental field and an account which disposes of theoretical immaturity do not have sufficient data on the environment and the economy, and therefore, considerable efforts are required for collecting and arranging the basic data and its subsequent combination.

4. Results from This Research

Participating in “the London Group”, the international expert group taking charge of revision of the U.N. Handbook on SEEA, we contribute to the international discussion by presenting study results in Japan. We also participate in “the Manila Group”, the expert group of SEEA in Asia and Oceania and lead the study on the environmental and economic accounting.

By making estimations of the Waste Account focusing on waste and the Environmental Protection Expenditure Account composed only of actual expenditures, we have verified the reliability of basic statistical data published by ministries and agencies and the combination of such data, and clarified problems in developing accounts on the environment and the economy.

5. Publication

“Trail Estimation of the Environmental Protection Expenditure Account in Japan”

June 1999

“Secondary Trial Estimation of the Environmental Protection Expenditure Account and the Trial Estimation of the Waste Account in Japan ”

June 2000