

Environmental accounts - sweden

Progress report for the 15-19 November meeting in Canberra

Statistics Sweden works on the physical accounts. The status on these are:

Asset Accounts

Forest accounts have been developed. **Water** accounts are in the initial stages. The link to NAMEA (flows) is being developed. **Sub-soil** assets have not been dealt with so far. Work on **Land** accounts have only started.

Flow accounts

Emissions to **air** are basically in a production phase with emissions by industry covering 1991, 1993 and 1995. 1996-97 and intervening years will be added in the coming year. **Water** emissions and **waste** are being added although coverage and quality of the underlying surveys are problematic. A first project on **material flows** has just been completed and a couple of projects started that will link the material flows to the NAMEA.

Monetary I/O-analysis is used in most cases to look at flows and relationships.

SERIEE

Work is continuing with **environmental expenditures** (a new survey planned for next year) and **environment industry** (further development and extension of existing database).

Environmental taxes and subsidies have been introduced into the NAMEA framework, i.e by tax base and industry.

Applications and developments

A number of applications have been developed over the last year:

Households have been analysed in a project where the NAMEA (I/O) framework is linked to data from Household Budget Surveys, Travel surveys, Time Use surveys as well as energy surveys. This gives the opportunity for distributional analysis and for linking two satellite accounts (environment and household production).

Trade has been the focus in a project where Imports and Exports are analysed from an environmental

point of view - creating an environmental trade balance between Sweden and its trading partners.

Indicators have been developed for presenting the statistics in the environmental accounts. Ideas on using the environmental accounts for **forecasting/scenarios** are being tested. The possibilities and benefits of **regional** accounts will also be studied.

Swedish National Institute of Economic Research (NIER) works on environmental accounting to develop methods for analyzing the interaction between the economy and the environment. Since this involves *both* identifying the major sources of pollution *and* the measurement of emissions and effluents close cooperation with Statistics Sweden and Swedish Environment Protection Agency is necessary. There are 3-4 researchers working on environmental economics issues at NIER, and the focus has been on two approaches:

1. Macroeconomic modeling (EMEC)
2. Environmental accounting in monetary terms (adjustment of conventional NNP)

1. A computable general equilibrium model, EMEC, which is built up on the environmental accounts provided by Statistics Sweden, has been used to study macroeconomic effects of environmental and energy policy. This kind of research is increasingly important for economic policymaking, and a report on "Environment and economy --- future scenarios up to 2015" has been prepared for the Department of Finance as a part of their medium term survey of the Swedish economy. Additional model analyses have been carried out for Swedish Committee on Climate Change. Moreover, Swedish Committee on National Environmental Targets has requested further model analyses. For this purpose the model has been developed to include abatement technology for certain air pollutants, and the Committee together with the Swedish EPA will provide the data for calibrating the model for the avoidance costs.

2. The aim of the research project of "greening" conventional NNP is to provide information on the magnitude of environmental deterioration and depletion of natural resource stocks, even though aggregated "green" NNP cannot be considered as a reliable indicator of local/regional environmental performance. A partially environmentally adjusted Swedish NNP measure has been calculated for the Department of Finance. In addition, a consistent theoretical framework for national economic-environment accounts is being developed for valuation of effects from emissions of sulfur and nitrogen.

The Institute has arranged a workshop on "Nordic environmental economic research concerning the monetary value of reduced emissions to air" together with the Swedish EPA.

