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### ***GUEST EDITORIAL***



Our editorial has been prepared by Mr. Bedřich Moldan, Director of the Charles University Environmental Centre, Prague, Czech Republic. The following are his impressions of a recent meeting of renowned scientists, discussing the concepts and methods of indicators of sustainable development.

#### **Wuppertal Workshop on Indicators of Sustainable Development** (Wuppertal, Germany, 15-17 November 1995)

The Workshop was organized by the Scientific Committee on Problems of the Environment (SCOPE), the Charles University Environmental Center in Prague, and the Wuppertal Institute for Climate, Environment and Energy. Fifty-three scientists, government representatives and other experts from twenty-two countries of all continents participated. The Workshop succeeded in bringing together representatives of probably almost all the major approaches to indicator development.

The Workshop was built upon a more programmatic meeting in Ghent, Belgium, held in January 1995. SCOPE and the scientific community were then asked to focus on improving the policy relevance of indicators through the integration, aggregation and linkage of the economic, social, environmental and cultural dimensions of sustainability. This mandate was confirmed by the third session of the United Nations Commission on Sustainable Development (CSD) (New York, April 1995). At the workshop, participants welcomed the international work on indicators of sustainable development.

In specifying a rich research agenda, participants recognized that a major gap in knowledge is the lack of consensus on a clear, workable definition of sustainability. This concept is to a great extent normative and value-dependent. Values tend to be determined by many factors springing from cultural and spiritual traditions, and different geoenvironments. As a consequence no indicator is fully value-free and, even less so, "theory-free" or "paradigm-free". Many proposed indicators are still North-biased. The scope and coverage of the Agenda 21, the action plan of the United Nations Conference on Environment and Development, can be taken as a working basis for a broad definition of sustainable development. It is easier, however, to define unsustainability than sustainability. Most work to date has therefore focused on indicators of unsustainability.

Indicators need to integrate the economic, social and environmental aspects of development. We need a strong multidisciplinary scientific input to arrive at a coherent analytical structure for indicator development, compilation and dissemination.

Many new ideas emerged during the workshop, regarding concepts, frameworks and aggregation of indicators. Proposals were made for material flows systems; highly aggregated environmental indicators and indicators of environmental space; and indices of resource pressure, vulnerability, elasticity, productivity, biodiversity, rationality and marginality. The notion of exposure indicators was advanced, as well as the possibility of developing non-numerical indicators including those building upon geographical information systems. Operational concepts of the sustainability of economic growth, national wealth, and human, social and urban development were introduced. A dynamic approach addressed the question of maintaining sustainability over time. Other issues included early-warning and precautionary indicators, and the difference between stock and flow indicators.

The workshop considered several elements as essential in indicator development. They are transparency of methodologies, correct perception of indicators by the public, continuous dialogue with policy makers, and education of both users and producers of indicators. Practical obstacles to indicator development are data availability, and lack of compilation capacities in countries.

## WHAT?

### Environment Statistics



#### Glossary of Environment Statistics

The Inter-governmental Working Group on the Advancement of Environment Statistics, at its first meeting in 1990, requested UNSD to prepare a glossary of terminology, commonly used in environment statistics. The manuscript of the glossary which has now been completed, consists of almost 1,300 terms. Definitions and concepts covering various areas of environment statistics, environmental/sustainable development indicators and environmental accounting are included. The focus is on the requirements of environmental statisticians and the possible use of environment statistics in management and policy analysis. The glossary is expected to be published in all official languages of the UN by fall 1996.

### Environmental and Sustainable Development Indicators

Following the request by the Statistical Commission of the UN to conduct an international compilation of environmental indicators, UNSD is currently drafting a pre-filled questionnaire. The questionnaire will be designed to be fully compatible with the indicators compiled by the Organization for Economic Cooperation and Development (OECD) for its Member States so as not to duplicate efforts. The questionnaire will be circulated to the members of the Inter-governmental Working Group in fall 1996 for review before it is sent out to all national statistical services in 1997.

The Department for Economic and Social Information and Policy Analysis (DESIPA) has collaborated with the Department for Policy Coordination and Sustainable Development (DPCSD) in the development of methodology sheets for indicators of sustainable development in the areas of energy, national accounts, environment and population. DESIPA is the "lead" organization for 21 of the approximate 125 indicators which are part of the work programme on indicators of sustainable development of the CSD.

### Environmental Accounting

UNSD is preparing an operational manual on integrated environmental and economic accounting in collaboration with the Working Group on Environmental and Natural Resources Accounting (Nairobi Group). The manual will provide, based on experience gained in country projects, a practical step-by-step description on how to implement the main parts of the System for integrated Environmental and Economic Accounting (SEEA). The manual will focus on both the implementation as well as the policy uses of integrated accounting. It will result from cooperative efforts of international organizations, including the Statistical Office of the European Communities (EUROSTAT), United Nations Environment Programme (UNEP), United Nations Centre for Human Settlements (HABITAT), UNSD, the World Bank, the World Wide Fund for Nature (WWF), Accounting for the Environment, and individual experts in the field.

## WHO?

### Guest Editorial



**Bedřich Moldan** is the Director of the Charles University Center for Environmental Scholarship and Associate Professor of Geochemistry, positions he has held since 1992. He holds a PhD from Charles University, Prague. From 1958 - 1989 he worked with the Geological Institute of Prague.

He was the first-ever Environment Minister in Czechoslovakia where he served as Minister for the Environment of the Czech Republic from 1989 - 1991. He has held various positions, including:

- \* Vice Chairman of the UN Commission on Sustainable Development, 1993 - 1994;
- \* Chairman of SCOPE project on indicators of sustainable development, 1994 - present;
- \* Chairman of the Scientific Board, Czech Statistical Office, Environment Statistics Unit, 1994 - present.

He is the author, co-author and editor of a great number of scientific papers, articles, chapters in monographs and books, translations and editions in the field of analytical chemistry, biochemistry, environmental policy and environment in general.

### Appointment:

**Kathy Gieri** has recently joined the Environment Statistics Section. She is participating in the work on concepts and methods of environmental indicators and statistics and the development of the questionnaire for indicator compilation. Prior to her current assignment, she worked in the Management and Planning Section and most recently in the Industry Statistics Section of UNSD.

## WHEN AND WHERE?



**The Asian Development Bank (ADB) Inception Workshop on Institutional Strengthening and Collection of Environment Statistics in Selected Developing Member Countries (DMCs)** (Manila, 18-22 September 1995) - sponsored jointly by ADB and the National Statistical

Coordination Board of the Philippines. ADB is implementing a technical cooperation project aimed at assisting DMCs in developing environment statistics and compiling priority environmental statistics and indicators. It is intended to integrate those statistics in the Bank's statistical data system.

**Accounting for the Future** (World Bank, WWF and others, Washington, D. C., 3 October 1995). The conference was to expand to the global level the results of a similar conference, organized by the European Parliament, WWF and the Club of Rome earlier this year. It reviewed progress made in environmental accounting and initiated an international programme of action.

**Monitoring Environmental Progress (MEP)** (Washington, D.C., 3-5 October 1995) - organized by the World Bank. The meeting brought together a number of experts on indicators for sustainable development that had met informally since 1993. The main purpose was to coalesce around a common indicator framework and consolidate the loose consultative process.

**World Energy Council 16th Congress** (Tokyo, 8-13 October 1995). The theme of the Congress was "Energy for our Common World - What will the future ask of us?" The main answer was: requisite policy-makers, business and consumers must start immediately to ensure the transition to sustainable commercial energy provision and use in the long term.

**Scientific Workshop on Indicators of Sustainable Development** (Wuppertal, Germany, 15-17 November 1995) - *see guest editorial*.

**Expert Working Group on Environmental and Natural Resource Accounting** (UNEP, Nairobi, 20-22 November 1995) - organized by UNEP. The workshop agreed on an agenda which would lead to a joint effort in developing an operational manual of environmental accounting (*see page 2 WHAT*).

**Expert Meeting for the Conception of a Course on Environmental Statistics at the Munich Centre for Advanced Training in Applied Statistics for Developing Countries** (Munich, 22-23 November 1995). The purpose of the meeting was to give advice to the Munich Centre on the conception and elaboration of a course programme on environment statistics. The Centre is planning to carry out such a programme for the first time in 1997 for selected African, Caribbean and Pacific countries. The meeting decided that the Framework for the Development of Environment Statistics (FDES) and related methodologies of UNSD would be used as part of the training materials for the courses.

**Workshop on Methodologies for Indicators of Sustainable Development** (Glen Cove, New York, 6-8 February 1996) - organized by the Government of Japan and DPCSD. The purpose of the workshop was to provide guidance on the further improvement and use of the methodology sheets for indicators of sustainable development, prepared by "lead" organizations.

**ESCAP Expert Group Meeting on Environmental and Resource Accounting** (Bangkok, 20-23 February 1996). The meeting was organized by ESCAP under a technical cooperation project funded by the Government of the Netherlands. The purpose of the Expert Group Meeting was to review reports of case studies on the implementation of the SEEA for selected natural resources. A final regional seminar of the project will be held in Seoul, 27-31 May 1996.

**Special IARIW Conference on Integrated Environmental and Economic Accounting in Theory and Practice** (Tokyo, 5-8 March 1996) - organized by the Economic Planning Agency of Japan and the United Nations University in cooperation with the International Association for Research in Income and Wealth (IARIW). The purpose was to take stock of practical experience with and theoretical research in environmental accounting since the first Special IARIW Conference on the subject in Baden, Austria (27-29

May 1991) - the seminal event for the preparation of the UN Handbook on *Integrated Environmental and Economic Accounting*. While revealing a number of commonalities in the different approaches and case studies presented, numerous conceptual and methodological issues remain unresolved or controversial, notably the valuation of environmental degradation. Alternatives discussed included physical (land use) accounts and modelling (*see also POINT OF VIEW*).

#### Planned meetings

**International Conference on Environmental Accounting for Chinese Pilot Areas** (Beijing, 11-13 March 1996).

**Workshop on Valuation Methods** (Washington, D.C. 20-22 March 1996).

**Fourth Session of the Commission on Sustainable Development** (New York, 18 April - 3 May 1996).

**National Accounts and the Environment** (third meeting of the "London Group", Stockholm, 28 -31 May 1996).

**Regional Seminar on Systems of Environmental and Resource Accounting** (Seoul, 27-31 May 1996).

## POINT OF VIEW



(Opinions stated here present personal views and not necessarily those of the affiliated organizations).

### Environmental accounting - measurement or modelling?

By Peter Bartelmus, UNSD

The recent IARIW Conference on Integrated Environmental and Economic Accounting in Theory and Practice (*see WHEN AND WHERE*) discussed the borderline between observation and modelling of monetary values for the environment. The SEEA's maintenance costing approach of assessing the costs that would have been incurred if environmental impacts would have been avoided during the accounting period was considered as "what-if" (hard) modelling - contrary to "what-is" (soft) modelling. The latter is already part and parcel of conventional accounting when closing data gaps or estimating unobservable processes, e.g. in the case of capital consumption. It was argued that hard modelling should not be part of ex-post accounting.

As a consequence, environmental degradation would be effectively excluded from environmental costing, since alternative valuations of environmental welfare effects are hardly possible at the national level. Two "solutions" can be suggested: (a) use maintenance cost as monetary weights for aggregating environmental impacts at the sectoral level, without attempting to deduct these costs from NDP; and/or (b) model the incidence of environmental costs and their effects on production and consumption patterns for obtaining a - shadow priced and thus hypothetical - Environmentally-adjusted net Domestic Product (EDP).

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## Capacity building and methodological standardization

*by Giovanni Carissimo*

The main constraints in the application of UN methodologies of environmental statistics and accounting in developing countries are data gaps, the lack of skilled human resources and absence of consensus on statistical concepts and methods. Greater efforts need to be made by the international community to: (a) strengthen the capacities of developing countries in data collection and analysis and (b) standardize methodologies for country use and implementation. At the same time, a pluralism of research and experimentation with controversial questions should be encouraged.

You are invited to give your opinion on concerns, technical questions, approaches and uses of environment statistics.

**envstats** is produced by the Environment Statistics Section of the United Nations Statistics Division (UNSD). The views expressed here do not necessarily reflect those of the United Nations. Comments and contributions for inclusion in future issues should be sent to **Kathleen Suite, envstats**, DC2 - 1638, 2 United Nations Plaza, New York, New York 10017. Tel: (1-212) 963 4847. Fax: (1-212) 963 9851. E-mail: [suite@un.org](mailto:suite@un.org)