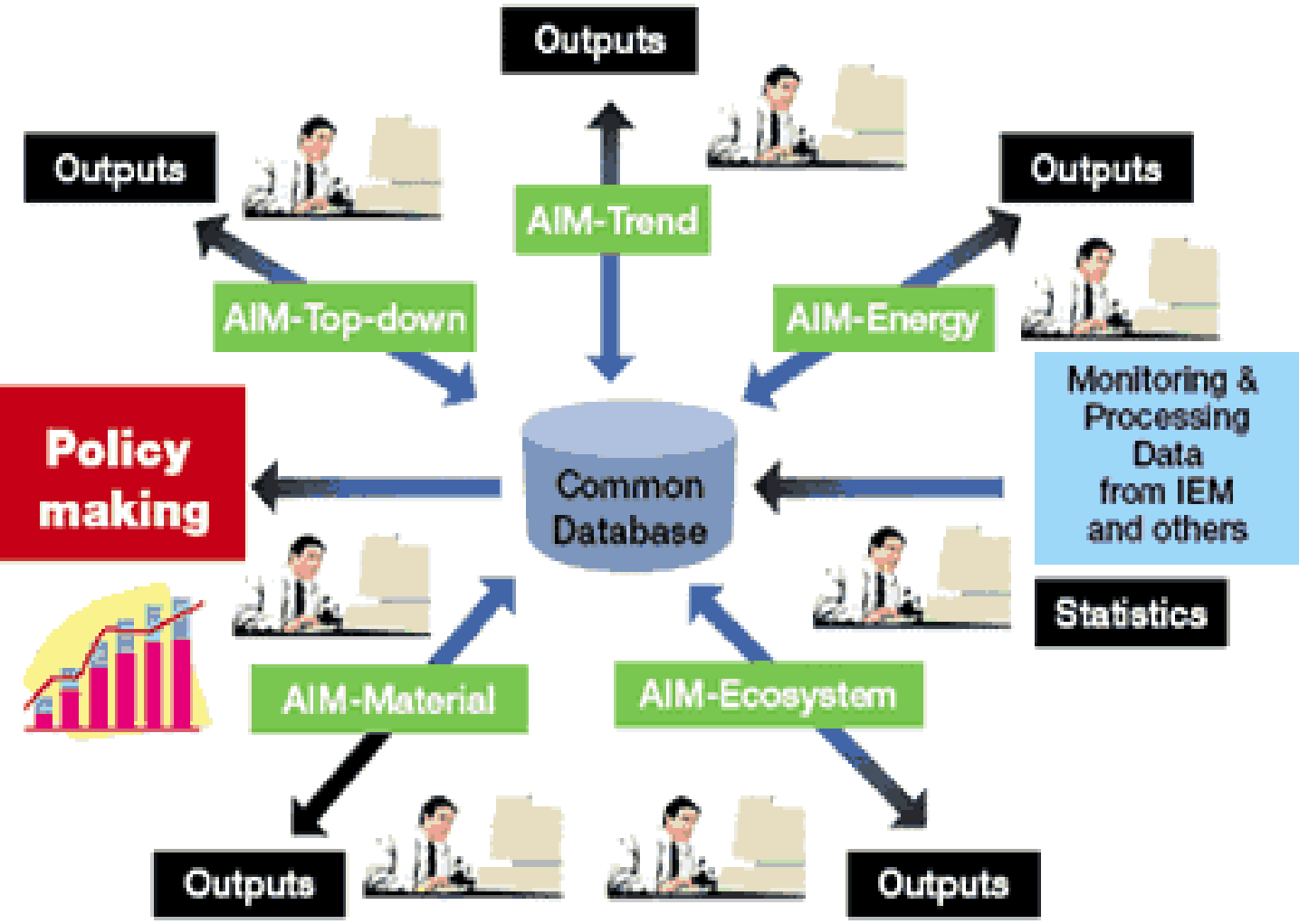
CHAPTER TWO



Development of Environment Statistics in India

CHAPTER TWO

DEVELOPMENT OF ENVIRONMENT STATISTICS IN INDIA

2.1 Introduction

The whole world has now realized the threat to its precious environment due to depletion of natural resources and the growing pace of degradation of the environment. Environmental issues, which have been for a long time part of Indian thought and social processes, are reflected in the Constitution of the Republic of India adopted in 1950. The Directive Principles of State policy, an integral and significant element of constitution of India, contain provisions, which reflect the commitment of the State to protect the environment with regard to forests and wildlife and which join upon the citizens of India the special responsibility to protect and improve the environment. The foundation of the present day institutional framework for environmental programmes in India goes back to the 1970s with the establishment of the National Committee of Environmental Planning and Coordination immediately after the historic Stockholm Conference on Environment held in 1972. The Committee was gradually upgraded into a Department of Environment in 1980 and five years later to a full-fledged Ministry of Environment and Forests (MOEF) of the Government of India (GOI). The State Governments also followed this example by establishing their own Departments of Environment to address the rapidly increasing policy initiatives and programmes in the environment and forests sectors.

Ministry of Environment and Forests has engaged itself in the task of managing country's environment by focussing on the development of important administrative tools and techniques, impact assessment, research and collection and dissemination of environmental information. However, environment being a multi-disciplinary subject involving complex subjects like Bio-diversity, Atmosphere, Water, Land and Soil and Human Settlements, it seemed difficult to collect and analyse data on these parameters and developed interrelationships among them. It, therefore, became necessary to develop an efficient statistical system on environment that could meet the growing demand of data on various aspects of environment by the various governmental agencies, environmentalists and general public.

2.2 Setting up of Environment Statistical Unit in Central Statistical Organisation

Recognising the importance of Environment Statistics as an emerging area, the subject was first discussed in the fifth Conference of Central and State Statistical Organisation (COCSSO) held at New Delhi in 1981. The Conference recommended the need for developing an appropriate environment statistical system in the country. The subject was again discussed in the Sixth and Seventh Conferences of Central and State Statistical Organisation. On the recommendation of the Seventh Conference of Central and State Statistical Organisation held in 1985, a multidisciplinary working group comprising Department of Environment, Central Statistical Organisation (CSO), State Directorates of Economics and Statistics, and other concerned Central and State organisations and research institutions involved in the related subjects, was set up in CSO under the Chairmanship of its Director General in July, 1986. The Working Group in its Report submitted in 1990 suggested a provisional list of variables for Framework for Development of Environment Statistics. The group also suggested a few variables on

which data needed to be collected on priority basis.

During the second half of 1996, a Steering Committee on Environment Statistics under the chairmanship of Director General, Central Statistical organization was constituted. In its first meeting held in January 1997, a draft framework for the development of environment statistics was discussed along with the table formats to be used for preparing the compendium. The data source agencies were identified and it was decided to hold a workshop cum second meeting of the Steering Committee to discuss draft compendium of environment statistics. The workshop cum second meeting was held at Pune in March 1997. As per the recommendations of the second meeting, the said draft compendium was modified and finally got approved in the third meeting of the Steering Committee held in August 1997.

2.3 Compendium of Environment Statistics

The Central Statistical Organisation brought out seven issues of the publication entitled "Compendium of Environment Statistics" for the years 1997, 1998, 1999, 2000, 2001, 2002 and 2003 presenting available data relating to environment of the country. Due to unavoidable circumstances, 2004 and 2005 issues were not brought out. Although, the present coverage of information in the compendium may not be exhaustive with respect to entire domain of Environment, it does however provide a glimpse of the present scenario of the environmental degradation, its causes and the reasons for concern. It provides the necessary base to bring out the magnitude of the problem. The compendium consists of seven chapters. The first two chapters give a general introduction to environment, its degradation through different sources and their impact on human health and the development of environment statistics in India. The remaining five chapters are on Biodiversity, Atmosphere, Land/soil, Water and Human Settlements. Besides, statistical tables depicting environment data, suitable graphs and charts have also been added to make the publication more user friendly.

2.4 National Workshop/Seminars on Environment Statistics

To disseminate information on the development of environment statistics in India and provide a forum for interaction between users and producers, six National Workshops/ Seminars on Environment Statistics have been organised so far since 1998. The first one was organized on different aspects of Environment and its impact on land and soil degradation, health including data gaps in different sectors of environment in Goa during 12-13 January, 1998, the second one was held during 6-7 April, 2000, at Hyderabad, the third one was organised during 8-9 February, 2001 at Thirurananthapuram and the fourth one was held during 22-23 April, 2003 at Shillong. Thereafter as per the recommendations made in third workshop, it was decided to organise Seminar on sector specific subject. The fifth Seminar on Statistical Accounting of Water Resources was organised during 24-25 June, 2005 at Institute forSocial and Economic Change (ISEC) Bangalore and sixth Seminar on Statistical Accounting of Land and Forestry Resources was organised during 29-30 April, 2006 at Indian Institute of Forest Management(IIFM), Bhopal. All the workshops were attended by academicians, data users, and data producing agencies. The technical sessions focussed on different aspects of the environment such as environment statistics, population and human health, status of databases on different types of pollution,

status of data bases on human settlements and impacts on other aspects of the environment; status of data base on land and soil and degradation; and natural resource accounting. Proceedings of the National Workshops/Seminars are brought out regularly.

2.5 Training on Environment Statistics

Environment statistics being a multi-disciplinary emerging subject, the Statisticians working both at the Centre as well as State Governments are required to be fully familiar with the relevant terminologies, and concepts and definitions. To fulfil this need, the C.S.O. organized an International Training Programme on Environment Statistics during 27 Jan-6 Feb, 1998 with financial support from Asian Development Bank. Twenty-two participants from South and South East Asia, including nine from India, participated in this programme. The second such training programme was organized at Hyderabad during December, 2000 and the third one again at Hyderabad during April, 2001. The fourth training was organised at Jadavpur University in 2002. Two training programmes on Environment Statistics were organised in the year 2003 at EPTRI, Hyderabad and at NEHU, Shillong. The sixth training programme was organised at NEHU in the year 2004. The seventh training Programme was organised in 2005 at EPTRI, Hyderabad. The eighth training programme was organised at IIFM, Bhopal in 2006.

2.6 Natural Resource Accounting

The economy draws inputs from the environment. These consist of natural resources, both non-renewable and renewable including mineral resources, timber and non-timber forest produce, aquatic resources, and also the ecosystem services *viz.* recycling of nutrients and supply of clean air and water necessary for sustaining life. Besides, economy also uses the environment as a sink for dumping unwanted wastes generated in industrial and other anthropogenic activities.

The conventional accounting [System of National Accounting (SNA)] though operates in natural environment, hardly takes into account the environmental components and the goods and services they contribute to the economic development. Rather, it is entirely based on monetary considerations, which if dealt in isolation may prcve disastrous, both to the economy as well as to the environment. Hence, links between economy and environment have to be properly understood and appreciated in order to achieve sustainable development of the society. There is an urgent need to generate data on environmental goods and services and their valuation in economic terms, so that information generated can be used for proper policy formulation to achieve overall sustainable development of the society.

As a result, concept of Integrated Environmental and Economic Accounting (IEEA) has emerged on the initiative of the United Nations. The main objectives of integrated environmental accounting are segregation and elaboration of all environmental and economic accounts, linkages of physical resource accounts with monetary environmental accounts and balance sheets, assessments of environmental costs, benefits and accounting for the maintenance of the tangible wealth. It is, thus, a complete accounting procedure for environmental assets. The IEEA later revised and termed

by the City Group formed by UNSD namely, London Group as "System for Environmental and Economic Accounting" (SEEA) taking into consideration the contributions of the environment to the economy and the impacts of the economy on the environment.

The United Nations, the European Commission , the International Monetary Fund, the Organisation for Economic Co-operation and Development and the World Bank undertook jointly the task of revision of the United Nations handbook of National Accounting-Integrated Environmental and Economic Accounting (commonly referred to as SEEA- 2003). Much of the work was done by the London Group on Environmental and Natural Resources Accounting, through a review process that started in 1998. SEEA 2003 provides a common framework for economic and environmental accounting, permitting a consistent analysis of contribution of environment to the economy and of the impact of the economy on the environment. It is intended to meet the needs of policy makers by providing indicators and descriptive statistics to monitor the interaction between the economy and the environment as well as serving as a tool for strategic planning and policy analysis to identify more sustainable development paths.

However, data on environmental components and the goods and services rendered by them, and their valuation in economic terms required for Environmental Accounting are lacking in various areas like Land, Water, Air, Energy, Agriculture, Forest, Mining, Industry etc. At present, in the fast changing environmental and economic scenario, data pertaining to various natural resources are highly desirable for proper policy formulation for sustainable development.

2.7 Natural Resource Accounting in India

The field of Environmental Accounting of Natural Resources in India is in developing stage. Various works done by experts on methodology of generating data and adding values to it (Chopra and Kakekodi, 1997; Parikh and Parikh, 1997; Kakekodi, 2002) have given valuable inputs for development of the area. **The entire process of Environmental Accounting of Natural Resources involves three steps viz. Physical accounting; Monetary valuation; and Integration with Economic Accounting.** Physical accounting determines the state of the resources types and extent (qualitative and quantitative) in spatial and temporal terms. Once the physical account of resources is available, monetary valuation is done to its all-tangible and intangible components. Thereafter, the net change in natural resources in monetary terms is integrated into the Gross Domestic Product in order to reach the value of Green GDP of a nation/state/region. The process does not require any change in the core system of SNA, rather it is achieved by establishing linkages between the two.

A pilot project on Natural Resource Accounting in Goa was initiated by C.S.O. in 1999-2000. A Technical working Group on Natural Resource Accounting constituted in the Ministry of Statistics & Programme Implementation held its first meeting in November 1997. Following the deliberations, a concept paper was got developed which was considered by the Technical Working Group in its meeting held in September 1998. The Group recommended that scope of study would be to cover all sectors of the economy. However, major emphasis would be given to Forests and Biodiversity, Minerals, Marine Resources, Tourism and Energy. In

the first phase, the Natural Resource Accounting would be attempted with the available secondary data and the gaps and requirement of additional primary data to be collected would be identified.

The first phase started in April 1999.The project was implemented by TERI under close supervision of Directorate of Planning, Statistics and Evaluation, Government of Goa. The findings of the study generated a lot of discussion in the National Statistical Commission, which, inter-alia, recommended replication of the Goa (Phase-I) project in other States also.

In order to develop sector-wise uniform methodology for computing Green GDP, eight projects on NRA are now under implementation through different institutions, namely, Indian Institute of Forest Management (Bhopal), Institute of Economic Growth (Delhi), The Energy and Resources Institute (Delhi), Centre for Multi Disciplinary Research (Karnataka), Madras School of Economics (Chennai), Jadavpur University (Kolkata), North Eastern Hill University (Shillong) and Integrated Research and Action for Development (Delhi).