

Chapter 4

Natural Resources Accounting for Sustainable Development: Approaches and Some Applications

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ABSTRACT

Economic growth has been conventionally looked upon as the measure for the development of society, while ignoring the other aspects viz., human development, natural resources, environment and ecology. In the conventional accounting of economic development, the value of services and goods provided by natural resources like air, water, land and biota are ignored; neither any attempts are made to monitor and account for the changes in natural resources and environment. For the economic development to be sustainable, the environmental costs have to be limited and to be growing at slower pace than the economic gains. In this chapter, an attempt is made to outline the importance of using Natural Resource Accounting (NRA) for sustainable development through an attempt to estimate the environmental costs and benefits, and also to compare with economic growth in the case of India. This chapter highlights the potential of using NRA to make decisions for sustainable development through policies for conservation, management and development of natural resources.

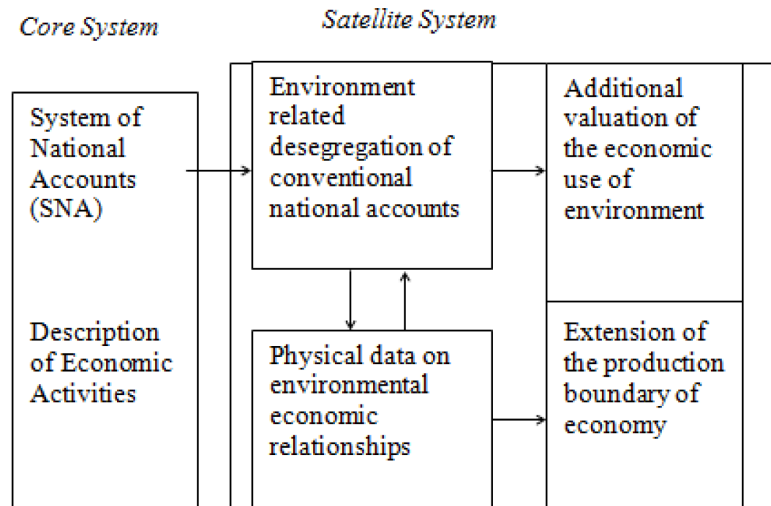
INTRODUCTION

Sustainable development is now accepted as an important goal of the development of human society, which requires the development to pass on the same benefits from current generation to future generation and which requires sustainable utilization of natural resources like air, water, land mass, biota and

other ecological resources (WCED 1987). Natural resources like air, water, land and biota provide material and non-material inputs to the economic development of a country or region, but traditionally they do not enter the conventional national/regional income accounts, which capture only value addition from economic activities within the country/region. Natural Resources Accounting (NRA) is an alternative approach, which essentially involves the accounting of material and non-material services

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Figure 1. The UN system of environmental economic accounting (Adapted from Ahmed et al. (1989))



rendered by natural resources viz., air, water, land and biota (El Sarafy 1989). An important utility of NRA is that the national income accounts can be revalued after adjusting for changes in the economic values of natural resources utilized in the past fiscal year (Pearce et al., 1989).

To some extent, NRA can play a major role in the planning of development of existing resource base, as it provides the estimates of economic values as well as the costs associated with the utilization of natural resources, upon which the country/ region's economy is critically dependent. Therefore, NRA provides an opportunity to integrate environmental changes into economic planning. Towards this end, the United Nations pronounced on the need for creating a System of Environmental and Economic Accounting (SEEA), comprising 'Satellite Accounts' of environmental changes that are based on NRA framework (see Figure 1)1. Such system of accounting leads to the development of Integrated Environmental Economic Accounting (IEEA) to serve the purpose of aiding decision and policy making.

NRA framework provides a system of collecting, organizing and analyzing environmental and natural resources data to policy planners and

decision makers so that the information can be utilized in decision making. However, it requires standardization; also, it needs to cover information exhaustively in physical and monetary terms that is comparable over time and space. When integrated into the conventional system of economic accounts, these accounts would yield Integrated Environmental Economic Accounts (IEEA), which are useful for the prudent management of economy with ecological harmony, as (United Nations 1993):

- they are potentially very useful in decision making from policy to management level, because, environmentally corrected national accounts provide correct information directly useful to resource conservation/ management
- they are not an end in themselves but a means to decision-making

Resource accounting methods vary widely with the nations/regions in their form as well as structure because of the differences in the frameworks adopted. They vary from the satellite accounts to flow resource accounting of natural resources that consists of inflows and outflows of

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