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RESEARCH ARTICLE

ENVIRONMENTAL ACCOUNTING (A SYSTEMATIC APPROACH FOR MANAGING NATURAL RESOURCES)

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Abstract

‘Green accounting’ is the popular term for environmental and natural resource accounting, which incorporates environmental assets and their source and sink functions into national and corporate accounts. It is broadly defined as the identification, collection, analysis, dissemination, and use of physical flow information (materials, energy and water flows), environmental cost information, and other monetary information for both conventional and environmental decision-making. This definition of Green Accounting is similar to the definition of conventional natural resources management methods, but has several key differences:

- It places particular emphasis on identifying environmental costs, including the costs of producing waste;
- It includes information on physical flows and use of materials, water, and energy, as well as cost information;
- Its information is particularly useful for activities and decisions with environmental impacts.

Green Accounting or Environmental Accounting is an important function that provides a means to incorporate information to manage and conserve environment in the globalize world. The most compelling reason for practicing green accounting is the growing body of evidence indicating that environmental costs can make up a much larger proportion of costs than any country can realize. Environmental accounting will also serve as a solid foundation for an Environmental Management System (EMS) which increases the effectiveness of an existing one management system not only for developing countries but also for developed ones.

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INTRODUCTION**GREEN ACCOUNTING- A GREEN STEP FOR SUSTAINABLE FUTURE**

Growth can no longer be measured in strictly economic terms such as the monetary value of output, income or expenditure per head. Additional criteria are needed for green growth. **According to UK economist Tim Jackson: “Prosperity consists in our ability to flourish as human beings -- within the ecological limits of a finite planet”.** The challenge for our society is to create the conditions under which this is possible.” Green growth will come from applying green public procurement and green research and development. Appropriate penalties such as

making the polluter pay for pollution and incentives like tax breaks for investment in green R&D are required. However, measuring green growth will need additional criteria such as sustainability, greenness, happiness or well-being.

In its 2009 Communication "**GDP and Beyond: Measuring progress in a changing world**", the European Commission proposed five actions as part of the EU roadmap for the development of indicators relevant to the challenges of today:

1. Complementing GDP with environmental and social indicators;
2. Near real-time information for decision making;
3. More accurate reporting on distribution and inequalities;
4. Developing a European Sustainable Development Scoreboard; and
5. Extending national accounts to environmental and social issues.

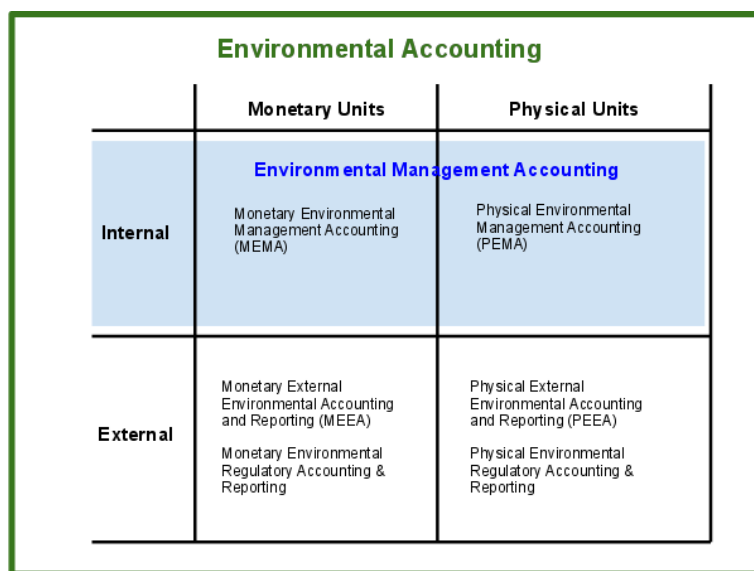
Green accounting incorporates environmental assets and their source and sinks functions into national and corporate accounts. It is the popular term for environmental and natural resource accounting. Conventional national accounts largely ignore:

1. New or newly observed scarcities of natural resources, which threaten to undermine the sustainability of economic performance and growth, and
2. Environmental degradation as an 'external' (social) cost of economic activity.

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Green Accounting or Environmental Accounting is an important function that provides a means to incorporate information to manage and conserve environment in the globalize world. The most compelling reason for practicing green accounting is the growing body of evidence indicating that environmental costs can make up a much larger proportion of costs than any country can realize.



Source: - eco-efficiently-action-project.com

OBJECTIVES OF GREEN ACCOUNTING

1. Segregation and Elaboration of all Environment related Flows and Stocks of Traditional Accounts:

The segregation of all flows and stocks of assets related to environment permits the estimation of the total expenditure for the protection of the environment. A further objective of this segregation is to identify that part of the gross domestic product that reflects the costs necessary to compensate for the negative impacts of economic growth, that is, the defensive expenditures.

2. Linkage of Physical Resource Accounts with Monetary Environmental Accounts:

Physical resource accounts cover the total stock or reserves of natural resources and changes therein, even if those resources are not affected by the economic system. Thus natural resource accounts provide the physical counterpart of the monetary stock and flow accounts of SEEA.

3. Assessment of Environmental Costs and Benefits:

- a) The use (depletion) of natural resources in production and final demand;
- b) The changes in environmental quality, resulting from pollution and other impacts of production, consumption and natural events, on the one hand, and environmental protection, on the other.

4. Accounting for the Maintenance of Tangible Wealth:

The SEEA (**System of Environmental Economic Accounting**) extends the concept of capital to cover not only human-made but also natural capital. Capital formation is correspondingly changed into a broader concept of capital accumulation allowing for the use or consumption and discovery of environmental assets.

5. Elaboration and Measurement of Indicators of Environmentally Adjusted Product and Income:

The consideration of the costs of depletion of natural resources and changes in environmental quality permits the calculation of modified macro-economic aggregates, notably an environmentally adjusted net domestic product (EDP).

MAIN STEPS IN GREEN ACCOUNTING

There is no single, formal methodology associated with green accounting. The Satellite Economic and Environmental Accounts (SEEA) is a widely discussed effort to compile economic and environmental data into a common framework using green accounting. SEEA (**System of Environmental Economic Accounting**) is structured as a series of methodological options from which users choose the techniques that are most appropriate to their needs. In addition, the National Academy of Sciences, USA reviewed a system of environmental accounts developed by the Bureau of Economic Analysis (BEA) in 1994 called the Integrated Economic and Environmental Satellite Accounts. However, there has been little progress in developing a standardized system for green accounting.

Some of the overarching methods currently in use for green accounting include-

1. Natural resource accounts;
2. Emissions accounting;
3. Disaggregation of conventional national accounts;
4. Value of non-marketed environmental goods and services; and,
5. Green gross domestic product.

PROBLEMS OF GREEN ACCOUNTING

1. It does not include comprehensive natural resource accounting because regional natural resource accounts are not reflected in the main accounts.
2. It focuses on the use of natural resource for economic activities and ignores the flows and transformations within the natural resources.
3. The types of data needed are not available in the necessary format. Thus lack of data has been one of the main problems in the SEEA.
4. Another problem arises when environmental data are directly connected with data of existing national accounts for the preparation of the green accounting. They require assigning of environmental pollution loads to the appropriate economic activities. However, the costs of preventing pollution can only be determined if the causes of pollution are identifiable. But the causes of many types of environmental pollution are not clear. If there are several pollution factors which cause environmental damage, the assignment of this damage will be highly arbitrary.
5. Another problem arises when some of the consequences of environmental pollution become visible after a long time. Estimating only the immediate consequences will lead to wrong policy decisions.
6. There is no simple justifiable valuation system for the green accounting. For different aspects of environmental problems, different valuation problems are used such as prevention and restoration costs and contingent evaluations based on surveys.
7. The pricing of all environmental variables in monetary terms in the green accounting has consequences:
 - a) The accounting system is restricted to those variables which are easily monetized thereby reducing the range of the accounting system,
 - b) Monetization of environmental variables and their concentration of only a few aggregates results in a drastic reduction of the green accounting system.

GREEN ACCOUNTING AND SUSTAINABLE DEVELOPMENT

By integrating social and ecological costs and benefits resulting from the natural environment into traditional economic accounting systems, green accounting aims to capture the interdependency and dynamic interactions between the three pillars of sustainability (economy, society, and environment). More accurately valuing natural resources costs and benefits may contribute to the development of more appropriate and sustainable economic, trade, and development policies.

Incorporating green accounting into national economic accounts could provide a measure of sustainability; however, considerable advances in methods of measurement and valuation are needed. From a purely accounting perspective, particular forms of capital could be diminished or, in an extreme case, wholly eliminated without decreasing overall welfare if other forms can be substituted for it. There are, of course, no substitutes for the life-sustaining services of nature and the question of when and how to account for this fact is the source of many ongoing debates in green accounting.

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