International Journal of Education, Modern Management, Applied Science & Social Science (IJEMMASSS)
ISSN : 2581-9925, Volume 01, No. 03, July - September, 2019, pp.66-70

GREEN ACCOUNTING: INITIATIVE & STRATEGIES

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ABSTRACT

Environment plays an important role in maintaining ecological balance and also at the same time helps in the sustainable development of the country. Therefore there is an urgent need to take into account the contribution of environment while calculating the National Domestic Product (NDP) of the country. Traditional methods ignore this valuable contribution, so a new and more refined method should be developed to take into account the environmental services, the cost-benefit analysis while formulating the policy instruments. Green accounting or environmental accounting is an improvement over the SNA. Though the method is not completely flawless, it still helps in including the contribution of the environment.

Keywords: *SNA, Green Accounting, Pollution Abetment Measures, SEEA, CSR, Biodiversity.*

Introduction

Environment is defined as the place, people, things and nature that surround any living organism. It is our basic life support system. It provides the air we breathe, the food we eat, the water we drink and the land where we live. It is the combination of natural and human made phenomenon. Human beings are completely dependent on the environment for their continued survival therefore, it is important that it should be kept clean and utilized in a sustainable way[1]. As per Mahatma Gandhi- "Earth provides enough to satisfy every man's need but not every man's greed." Earth is wealthy enough to satisfy the needs of everyone living in it but the greedy man exploits the abundant resources of the environment and therefore in the present context, the environment protection becomes the bottom line. Today, the magnitude of environmental pollution is at an alarming level in many parts of the globe.[2]

Environmental degradation means a decline in the quality of environment as a result of pollutants that spoil the air, water or food supply, the over-extraction of resources leads to its crunch for future use, or the destruction of habitats results in non-availability of resources. While natural disasters can cause environmental degradation, more often it is the result of human activities[3].The main reason behind the environmental problem is market failure which arises due to lack of well-defined property rights and the lack of proper valuation of "public bad". Therefore there is a need to reinvent environmental policy. Some key factors should be considered while formulating and evaluating policy instruments.

- Effectiveness, i.e. the instrument should be good enough to effectively tackle the problem of pollution.
- Socio-economic efficiency, i.e. environmental objectives should be realized with minimum cost for optimal utilization of societal resources.
- Dynamic efficiency, i.e. policy instrument should provide incentives for environmental improvement over time and space.
- Equity i.e. cost and benefit should be equally distributed among all the sections of society.
- Operational feasibility, i.e. given the level of socio-economic development, it should be feasible to implement the policy instrument.
- Community acceptance, i.e. public consultation and education programmers should be organized to make community understand the objectives and benefits of policy instruments.

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For better environmental policy formulation, internationally best methods must be taken into consideration. Indeed, environmental degradation is a global problem and its solution also lies in inventing globally best practices. Broadly, three types of pollution abetment options are available nationally as well as internationally i.e. command and control approach, market based instruments and government production expenditure.

- Command and control option entails imposition of bans, specifying quotas and laying down the standards for polluting activities i.e. pollution tax, vehicle congestion tax etc.
- Government production expenditure works through its regulatory agencies by undertaking various activities like cleaning of water bodies, treatment of effluent by setting up treatment plants, proper disposal of household waste etc.
- Market based instruments use economic incentives or market stimuli for internalizing the environmental cost. It aims at creation of market mechanism where the social cost of pollution will be borne by polluters known as “polluter pays principle”.

Green Accounting: The Need of Hour

GDP (Gross domestic Product) measures the value of output produced within a country over a certain period of time. Any depreciation in output will account only for the man-made capital and not on the negative impact of growth on natural capital, such as land, water, forest and biodiversity, leading to negative effect on human health and welfare. Biodiversity is a valuable asset and the underlying foundation of the earth’s ecosystem, the variety and abundance of species that inhabit them and the variability and diversity of genetic material found within them. It provides numerous benefits, from food and fuel, to services such as freshwater, soil fertility, flood control, pollination of crops and carbon sequestration by forests that are crucial to both environmental and human well-being. To this end, biodiversity loss does not only mean the loss of species, but also the loss of ecosystem functioning.

Just like many developing countries, India too faces the twin problems of saving environment alongside the imperatives of economic development. Traditionally, more attention is given to improving country’s economic condition as it is still not up to the mark. As per a study of World Bank, approximately INR 34,000 crores were lost by India due to environmental changes.[4] India suffered 8.5% of its GDP i.e. around $550 billion due to externalities caused by air pollution, water pollution and land degradation. India fails to take into account the externalities despite being having a GDP of $2.65 trillion.[5]

According to many economists, if environmental concerns and human well-being are considered in the traditional national accounts then, India’s growth rate will fall considerably. The current Environment Impact Assessment (EIA) scenario in India is viewed with doubts because of inadequate methodologies and the qualitative nature of estimation alongside lack of objectivity in such studies poses major problem that need to be resolved to internalize the problem of externalities and to reach an efficient outcome in the market for ecosystem services.[6]

Better macroeconomic and societal indicators are needed to reflect the contribution of biodiversity and ecosystem services to human well-being. One approach that is gaining momentum across the globe is “green accounting” whereby national accounts are adjusted to include the value of nature´s goods and services. Green accounting is a new system of sustainable accounting which permits the computation of income for a nation by taking into account the economic changes and depletion of natural resource base of an economy.[7]Environmental accounting sometimes referred to as "green accounting", "resource accounting" or "integrated economic and environmental accounting".

Traditional measures of economic activities such as GDP and GNP are inadequate because firstly, they cannot accurately measure the contribution of environment and secondly, the impact of economic activities on environment is missing. Therefore, incorporating environmental/natural resources into national income accounting can be a better indicator of economic progress and well-being. The present method of national income accounting is known as System of National Accounting (SNA), which establishes a relationship between environment and economics from economics point of view only. Economic assets in SNA include those natural assets whose ownership rights exist and also those that can bestow economic benefits to their owners. Present system of national accounting reflects Keynesian Macroeconomic model and it largely ignores the productive role of natural resources. Major aggregates of Keynesian analysis are consumption, saving, investment and government expenditure.

Flaws in SNA

The flaws in conventional System of National income Accounting (SNA):

- It focus mainly on goods and services that are bought and sold in the market and ignore the non-marketed goods and services provided by natural assets.
- There is inconsistent treatment of man-made and natural assets. Natural resource assets are not so valued and loss in natural resources is not similarly depreciated.
- GDP and GNP do not accurately represent the degradation of environment.

Approaches to Green Accounting

To measure national income more accurately, requisite modifications to national income are required. Two types of adjustments can be taken out to measure national income more accurately, firstly, defining and valuing non-marketed environmental goods and resources, and secondly, measuring and valuing the changes in the stock of natural resources. For greening of national income account four different approaches has been adopted: Pollution expenditure accounting, Physical accounting, Development of green indicators and Extension of SNA type system.

- **Pollution Expenditure Accounting**

This approach is based on developing database on pollution abetment and other environmental expenditure. But there exists some limitations to this approach. One, these data refer to expenditure already incurred either due to policy or standard business or household practices. Hence, it should be considered as addition to conventional economic account. Two, abetment expenditure data tend to overestimate the true opportunity cost. Three, the practice of comparing pollution abetment expenditure with GDP is misleading since GDP covers primary cost and is free from double counting. The use of pollution expenditure data has limited scope in policy making and it acts as a mere indicator as to how various environmental policy affect productivity.

- **Physical Accounting**

It supplements traditional accounting system with physical information about the natural environment and its status. It provides information on physical indicators like forest, quality of air, etc. alongside providing input for construction of various environmental indicators. This method is difficult to use for policy purposes because:

  - Choice of appropriate physical units of measures in not clear.
  - Incomparability of units.
  - Difficulties in getting aggregate information, as the units are not the same.
  - Involves development of huge data sets due to different quality indicators.
  - Potential severity of the environmental problem is not reflected.

- **Development of Green Indicator**

To construct green GDP, twin approaches are required: one, to construct new indicators of well-being, by altering the conventional aggregates by subtracting out pollution expenditure from GDP, adding factors like negative impacts of urbanization, etc. and two, it involves modification of conventional measures of net product.

- **Extension of the SNA type System**

It covers all sectors that interact with the environment rather than focussing on the just one element of conventional accounting i.e. UN satellite System of Integrated Environmental and Economic Accounting (SEEA) and Environmental and Natural Resource Accounting Framework (ENRAP). Both approaches require sector specific information on the use of environmental assets and are concerned with management and score keeping function accounting. SEEA is more concerned with adherence to the principles of SNA than to economic theory, whereas ENRAP stresses more on the consistency with economic theory than with the SNA.

SEEA attempts to overcome the limitation of SNA by reclassifying the elements by changing them so that they can be included in calculation of NDP (Net Domestic Product). Satellite system becomes a link between SNA and the account describing the natural environment. Its success depends on its close integration with SNA and also due to its ability to address various flaws of conventional national account by means of alternative elements or modules. The underlying objectives of SEEA are:

- All environment related flows and stock of traditional account be segregated and elaborated. It presents separately environmental protection expenditure as the part of costs necessary for compensation to overcome the negative impacts of economic growth.
- Physical account to be linked with monetary environmental account and balance sheet. It shows the inter-relationship between natural environment and economy in physical terms.
- Assessment of environmental cost and benefits. SEEA expands and complement SNA with respect to use of natural resources and the changes in environment quality on one hand and environmental protection expenditure on other hand.
- Accounting for maintenance of tangible wealth. SEEA broadens the concept of capital to cover not only man-made but also natural capital.
- Indicators of environment for adjusted product and income, cost of depletion of natural resources and changes in environment quality in SEEA are being measured and elaborated.

The important improvement in SEEA over SNA is its extension of the asset boundary. SEEA identifies separately non-produced economic assets (those natural assets that are currently exploited or likely to be so, for economic purpose, even if no explicit ownership or control is exerted over these resources) and non-produced environmental assets (those asset for which neither ownership rights are enforced nor direct monetary benefits are derived from their use.).

ENRAP is a type of economic accounting that attempt to cover all the economic input and output that together comprise an economic system. For input and output to be economic they need not have the market value. ENRAP includes all those goods and services from the national account under three categories, one, input services i.e. waste disposal services, two, output or environmental quality services i.e. recreational and aesthetic services and three, negative output i.e. pollution.[8]

New Developments or Strategies

As per European Union, green accounting plays a crucial role in unveiling the answer to some of the important questions regarding the linkages between the ecology and economy i.e. the most greenhouse gases emitting industry? How do the patterns of production and consumption affect the environment? How environment is affected by the various government policy measures, like pollution tax?

Recently, a Green skilling programme has been launched by the government, under which youth, especially the school dropouts, would be trained in a range of green jobs, as operators of scientific instrument used to measure environment quality, as tourist guides and as field staff in nature parks. [9]

Corporate social responsibility was made compulsory under The Companies Act (2013), to invest a substantial amount of their profit for environment protection and other social causes. But the crux is that whether the optimal investment decisions can be made in absence of environmental indicators reflecting the current status of environmental hazard. The way forward is to have trust in natural capital assessment agenda of such large companies as a part of their CSR function vis-à-vis institutional efforts to develop advanced Green Accounting methodology[10]

Challenges

Developing environmental account is not easy especially for developing countries. The complexities are profound.

- SEEA does not reflect the regional natural resource accounts; therefore, it is not a comprehensive natural resource accounting method.
- Lack of availability of data and also the data available is not in the necessary format.
- Social values of environmental goods and services are uncertain and change very rapidly.
- It mainly focuses on the use of natural resources for the economic activities and given no importance the flows and transformation within the natural resources.
- The practicability for using SEEA is limited. For different aspect of environmental problem, different valuation methods need to be implied. Therefore, it is mainly theoretical and arbitrary constructions of SEEA.
- The cost-benefit analysis relevant to the environment is not easily measurable.
- Environmental accounting is not a legal obligation except for few industries in India.

Conclusion

In reality, green accounting is in its introductory stage in India. Development of environmental accounting will not be successful unless common people are not made aware about environmental safety. This method will only put forth the related data for analysis but expecting changes on ground requires an all-out drive for environmental awareness among the school students, college students and the public at large. Then, a well-defined environmental policy along with a proper follow up and accounting procedure can bring fruitful changes in the arena of sustainable development of the country. [11]Green accounting system should be developed in such a manner that it should include almost all types of different indicators which makes system more dynamic and flexible.

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