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RESEARCH METHODOLOGY

**RESULTS & DISCUSSION** 

**FINDINGS** 

RECOMMENDATIONS/SUGGESTIONS

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• Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

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#### GREEN ACCOUNTING: A STUDY ABOUT ITS IMPORTANCE AND CONCEPT

# DR. R. JAYANTHI LECTURER DEPARTMENT OF COMMERCE UNIVERSITY OF MADRAS ARTS & SCIENCE COLLEGE (UNIVERSITY CONSTITUENT COLLEGE) NEMMELI

#### **ABSTRACT**

The Green Accounting term was first introduced into common usage by economist and Professor Peter Wood in the 1980s. The main purpose of this paper is to study and analyze the available literature based on the green accounting and to understand how it has been studied and evaluated by different authors who are working in this area. Current literature focuses on Green Accounting - importance and it's Concept. The study suggests that there should be wide empirical studies in this area so that, through the Green accounting system we can analyze the environmental performance of each companies or organizations. 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. Mr Jairam Ramesh, the former environment minister, advocated greening India's national accounts by 2015 and encouraged policy makers to recognise the trade-off between pursuing high growth economic policies against the extensive impact they could have on India's natural capital. GDP growth has become virtually every nation's default measure of progress. For India, its slowing GDP continues to make headlines and is the subject of much debate. Like all emerging and growing economics security of its growing population: On the one hand, there is pressure to maintain GDP growth as this is the perceived foundation upon which the future economic security of its growing population is based, but conversely, India must also take into consideration the costs of development and not self-cannibalise its rich natural capital wealth and jeopardise the very future of the people it is trying to secure. Over-reliance on GDP as a measure of economic health can be misleading. As noted long ago by Robert F. Kennedy: "it measures everything, in short, except that which makes life worthwhile."

#### **KEYWORDS**

green accounting, environmental performance.

#### **INTRODUCTION**

n account is a statement or measure that provides an assurance about the financial information. Accounting is discipline of measuring, communicating and interpreting the financial activity. Green accounting is considered as a subset or superset of accounting proper. Green accounting is a management tool used for a variety of purposes, such as improving environmental performance, controlling costs, investing in "cleaner" technologies, developing "greener" processes and products, and informing decisions related to product mix, product retention, and product pricing. It incorporates the environmental sources and assets into corporate accounts. It measures environmental, social and economic impact of business. It aims to incorporate both the economic and environmental information. It can be operated at company level or at national level or at international level. Green accounting is a growing field that identifies resource use, measures and communicates costs of a company or the national economy actual or potential impact on the environment. Green accounting is also referred to as environmental accounting which incorporates environmental assets and their source and sinks function into national and corporate accounts. It is a popular term for environmental and natural resource accounting.

#### **OBJECTIVES OF THE STUDY**

The objective of the present study is to review the following:

- 1. The importance of Green Accounting in India and
- 2. Analyze the Concept, Need, Advantages and limitations of Green Accounting for developing our Country India.

#### RESEARCH METHODOLOGY

The study has been done mainly on the basis of secondary data and information available from books and published works and reports.

#### **HISTORY OF GREEN ACCOUNTING**

- The term Green Accounting has been enounced since the 1980s and known as a management tools.
- The conventional SNA was first started in the USA in 1942.
- The present situation of green accounting and its most evolved from, sustainable accounting, has been receiving continues attention in the academic accounting literature in the early 1990s
- The concept started almost three decades ago in the early 1970s with important contributions.

#### **GREEN ACCOUNTING SYSTEM**

A Green Accounting system is composed of environmentally differentiated conventional accounting and ecological accounting. Environmentally differentiated accounting measures impact of the natural environment on a company in nominal or monetary terms. It measures the impact a company has on the environment, but in physical unit (e.g. Kilogram of waste produced) rather than monetary unit. It is closely related to sustainability.

#### **SUSTAINABILITY**

It is a characteristic of a process or state that could be afforded to be maintained at a certain level indefinitely. Often it is confused with sustained which means irreversible growth. Sustainability in its environmental usages, refers to the potential longevity of vital human ecological support systems, such as the planet's climatic system, systems of agriculture, industry, forestry, and fisheries on the one hand and the increasing pressure by human communities, their consumption patterns in general, and their impact on the various systems on which they depend, on the other hand.

#### **GOALS OF GREEN ACCOUNTING**

Green accounting is used to increase the amount of relevant for those who need it or can use it. Relevant data depends on the scale and scope of coverage. It is to increase the sustainable development.

#### **SCOPE OF GREEN ACCOUNTING**

The scope of Green Accounting (hereinafter called as Environment Accounting - EA) is very wide. It includes corporate level, national & international level. The following aspects are included in Green Accounting: Internal and External Aspects.

- From Internal point of view investment made by the corporate sector for minimization of losses to environment. It includes investment made into the
  environment saving equipment devices. This type of accounting is easy as money measurement is possible.
- 2. From external point of view all types of loss are indirectly due to business operation/activities. It mainly includes:
  - a. Degradation and destruction like soil erosion, loss of bio diversity, air pollution, water pollution, voice pollution, problem of solid waste, coastal & marine pollution.
  - b. Depletion of nonrenewable natural resources i.e. loss emerged due to over exploitation of nonrenewable natural resources like minerals, water, gas, etc
  - c. Deforestation and Land uses. This type of accounting is not easy, as losses to environment cannot be measured exactly in monetary value. Further, it is very hard to decide that how much loss was occurred to the environment due to a particular industry. For this purpose approx idea can be given or other measurement of loss like quantity of non-renewable natural re-sources used, how much Sq. meter area deforested and total area used for business purpose including residential quarters area for employees etc., how much solid waste produced by the factory, how much wasteful air pass through chimney in air and what types of elements are included in a standard quantity of wasteful air, type and degree of noise made by the factory, etc. can be used.

#### TYPES OF GREEN ACCOUNTING (ENVIRONMENTAL ACCOUNTING)

**Environmental management accounting**: It is the identification, collection, estimation, analysis, internal reporting and use of materials and energy flow information. This type of accounting can be further classified in the following subsystems:

- a. **Segment Environmental Accounting:** This is an internal environmental accounting tool to select an investment activity, or a project, related to environmental conservation from among all processes of operations, and to evaluate environmental effects for a certain period.
- b. **Eco Balance Environmental Accounting:** This is an internal environmental accounting tool to support PDCA for sustainable environmental management activities.
- c. Corporate Environmental Accounting: This is a tool to inform the public of relevant information compiled in accordance with the Environmental Accounting. It should be called as Corporate Environmental Reporting. For this purpose the cost and effect (in quantity and monetary value) of its environmental conservation activities are used

Environmental Financial Accounting: It focuses on reporting environmental liability costs and other significant environmental costs.

 $\textbf{Environmental National Accounting:} \ \textbf{It focuses on national resources stoke and externality costs etc.}$ 

#### System of national account (SNA)

- SNA is the set of account which government compiles routinely to track the activity of their economic.
- SNA data are used to calculate major economic indicators GDP, GNP, saving rate and trade balance figure.
- The system of NA views the relationship between the environmental and the economy free economic perspective only.

#### STANDARD NATIONAL ACCOUNTS (SNA) FRAMEWORK

#### **Net Domestic Product**

NDP = C + I - D + X - M

Where:

NDP = Net Domestic Product

C = final Consumption

I = Investment (fixed capital)

D = Depreciation

X = Exports

M = Imports

Misleadingly used as measure of welfare: welfare not proportionate to consumption of produced goods

#### **GROSS DOMESTIC PRODUCT**

The gross domestic product (GDP) is one of the primary indicators used to gauge the health of a country's economy. It represents the total dollar value of all goods and services produced over a specific time period; you can think of it as the size of the economy.

- The sum of all officially recognized final goods and services produced within a country in a given period of time
- GDP can be measured using the income approach, the output approach and expenditure approach

The formula for GDP is which measures the output of a nation by summing:

GDP = C+I+G+Xn

Where

Т

- C The total spending by households on goods and services
  - The investments firms make in new capital or that households make in real estate and homes
- G The spending government does on public goods
- (n The spending of foreigners on goods produced by our country (Exports) minus the spending our consumers do on goods produced abroad (Imports)

The GDP of a particular nation in a particular year therefore equals the sum of C, I, G and Xn.

#### WHY IS GDP IMPORTANT?

GDP is considered by economists to be the most important measure of economic activity in nations for several reasons:

- It tells us something about the relative size of different countries' economies
- It is a monetary measure, so it tells us how much income a country earns in a year (assuming everything that is produced is sold).
- When we divide GDP by the population, we get GDP per capita, which tells us how many goods and services the average person consumes in a country.
- When real GDP grows more than the population, that tells us that people on average, have more stuff than they did before.
- If you believe that having more stuff makes people better off,
- Then GDP per capita tells us how well off people in society are.

#### TO ACCOUNT FOR WHAT GDP DOES NOT, ECONOMIST HAVE CREATED GREEN GDP

The green gross domestic product (green GDP) is an index of economic growth with the environmental consequences of that growth factored into a country's conventional GDP.

#### Green GDP = GDP – the value of environmental degradation – P

#### P = all expenditures resulting from cleaning up pollution, avoiding further environmental damage, and health care costs of pollution-induced illnesses

- Green GDP is an under-used measure of economic activity which subtracts from real GDP the losses to the environment and biodiversity resulting from
  economic growth.
- Places a monetary value on environmental degradation and subtracts this from the nation's GDP
- Is a measure preferred by environmentalists who believe that economic growth overstates increases in peoples' well-being due to the fact that it ignores the
  externalities that accompany growth?

#### **IMPLICATIONS OF GREEN GDP**

Lower 'growth' rates

High 'growth' rates would necessitate expenditure to protect and even enhance the environment

According to conventional methods of measurement, China's real GDP has been growing at over 10% per year (for several years), whereas the Green GDP method showed it to be close to zero in some Chinese provinces.

#### IMPORTANCE OF GREEN ACCOUNTING

GDP growth has become virtually every nation's default measure of progress. For India, its slowing GDP continues to make headlines and is the subject of much debate. Amid concerns from the Government, the business community and citizens on what impact external events such as the evolving European sovereign debt crisis may have on India's growth and jobs, it might also be the perfect time to take a moment and reflect on India's economic journey over the last decade, and ask whether the remarkable GDP growth has been a true measure of the nation's wealth and more significantly, its economic sustainability.

Like all emerging and growing economies, India is facing a catch-22 situation: On the one hand, there is pressure to maintain GDP growth as this is the perceived foundation upon which the future economic security of its growing population is based, but conversely, India must also take into consideration the costs of development and not self-cannibalise its rich natural capital wealth and jeopardise the very future of the people it is trying to secure. Over-reliance on GDP as a measure of economic health can be misleading. As noted long ago by Robert F. Kennedy: "it measures everything, in short, except that which makes life worthwhile."

(A catch-22 is a paradoxical situation from which an individual cannot escape because of contradictory rules. An example includes: To apply for a job, you need to have a few years of experience; but in order to gain experience you need to get a job.)

GDP measures the value of output produced within a country over a certain time period. However, any depreciation measurements used, will account only for manmade capital and not the negative impact of growth on valuable natural capital, such as water, land, forests, biodiversity and the resulting negative effects on human health and welfare. For India, there is much to lose if action is not taken to preserve its natural environment. Its wide range of climate, geography and culture make it unique amongst biodiversity rich nations. Biodiversity is an incredibly valuable asset. It is the underlying foundation of the earth's ecosystems, 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. Although India's economic growth is to been couraged, the double-digit GDP fixation is threatening India's biodiversity and ironically, its long-term growth and security.

For example, despite India having set in place a remarkable Protected Areas network (4.8 percent of the total geographical area of the country), it continues to be challenged by the loss of natural habitats. Over the course of the last fifty years, India has lost over half its forests, 40 percent of its mangroves and a significant part of its wetlands. At least 40 species of plants and animals have become extinct with several hundred more endangered.

Livelihoods have been lost, poverty increased, food security threatened and health risks raised. Today, annual economic costs of air pollution, contaminated water, soil degradation, and deforestation are estimated to be close to 10 per cent of India's GDP.

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. Mr Jairam Ramesh, the former environment minister, advocated greening India's national accounts by 2015 and encouraged policy makers to recognise the trade-off between pursuing high growth economic policies against the extensive impact they could have on India's natural capital.

#### **GREEN LIFE CYCLE**

The life cycle of a product, process, system or facility begins with (up-front) acquisition to make it green to the (back-end) decommissioning which can include toxic removal and remediation. Life cycle is a more systematic and complete assessment of a firm's long term costs.

#### **NEED OF GREEN ACCOUNTING**

Practically for developing countries like India it is a twin problem about saving environment and economic development. As the country economic condition is not very strong, hence it should be improved first. A study by World Bank estimated that about 34,000 crores were lost by India due to environmental damage. Company like AT&T is implementing Green accounting.

#### **NEED OF GREEN ACCOUNTING AT CORPORATE LEVEL**

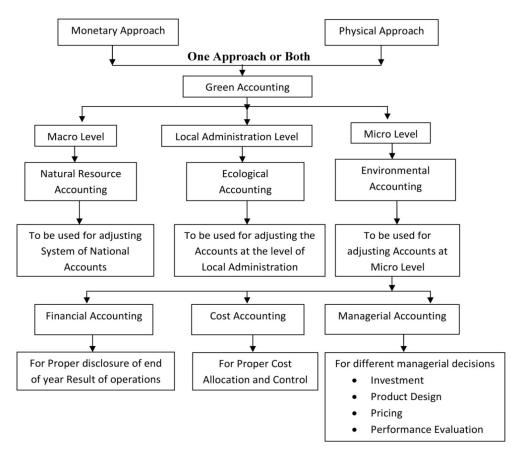
It helps to know whether corporation has been discharging its responsibilities towards environment or not.

Basically, a company has to fulfill following environmental responsibilities.

- a. Meeting regulatory requirements or exceeding that expectation.
- b. Cleaning up pollution that already exists and properly disposing of the hazardous material.
- c. Disclosing to the investors both potential & current, the amount and nature of the preventative measures taken by the management (disclosure required if the estimated liability is greater than a certain percent say 10 per cent of the company's net worth).
- d. Operating in a way that those environmental damages do not occur.
- e. Promoting a company having wide environmental attitude.
- $f. \qquad \hbox{Control over operational \& material efficiency gains driven by the competitive global market}.$
- g. Control over increases in costs for raw materials, waste management and potential liability.

#### APPROACHES AND CLASSIFICATION OF GREEN ACCOUNTING

FIG. 1



#### **ADVANTAGES OF GREEN ACCOUNTING**

- Pollution control
- Sustainable development
- Projection, cost, estimating life cycle in the environment.
- Product circulation, administration form environmental prospective.
- Environmental-centered management system.
- Assessing, testing and reporting performance of environmental activities.

#### LIMITATIONS OF GREEN ACCOUNTING

- Lack of standard accounting method
- Social values for environmental goods and services are uncertain and change very rapidly.
- Valuation techniques for environmental goods and services are imperfect and shadow prices are only partial valuations. This applies to both deductive and interrogative techniques.
- Comparison between two countries or firms is not possible if method of accounting is different and which is quite obvious
- It mainly considers internal cost of the company and ignores cost to society.
- . Since costs and benefits relevant to the environment are not easily measureable. Hence Input for Green Accounting is not easily available
- Initial cost for its tools and application is high.
- Since it is a long-term process. Therefore, to draw a conclusion with help of it is not easy.
- Large and well managed Business and the Government organizations don't adequately track the use of energy and material or the cost of inefficient materials use, waste management and related issue. Many organizations, therefore, significantly underestimate the cost of poor environment performance to their organization.
- It cannot work independently. It should be integrated with the financial accounting, which is not easy.
- There is no reliable industry data.

#### ADVANTAGES OF GREEN ACCOUNTING FOR INDIA

India is a big country which is heavily burdened with overpopulation, natural calamities, backlashes of global warming, climate change, pollution, exhaustion of natural resources, ozone depletion, desertification, species decimation, marine pollution and many more environmental hazards. To save and salvage the country, it is highly essential to enact laws and provisions and implement the same without further loss of time. Green accounting for green economy is an important concept that needs to be implemented in India.

India may gain the advantages of implementing green accounting as summarised below:

#### **GREEN ACCOUNTING**

- is meant to be used for both internal and external users;
- provides useful information regarding decision-making on the level and structure of production, value of investment, environmental costs, etc.;

- indentifies and analyses the environmental costs and debts, identifies and manages the ratio between the environmental expenses and its afferent debt;
- identifies, collects and analyses data about raw materials, energy and other information about the environmental impact of the business, that will lead to more informed decision-making, with consequent implications for improved profitability and environmental protection;
- manages the acquisitions, consummation and sales of materials, including waste;
- contributes to a better management of energy and water costs, etc.;
- provides information regarding the performance of an economic entity which leads to a better relationship between partners and the external environment;
- brings new clients, a better image of the society;
- leads the managers to purchase materials that will minimise the costs;
- Creates accountability of the stakeholders towards environment.

#### CONCLUSION

- Green accounting takes into consideration Environmental resources and changes in them, and integrate the result with the system of national account so as provide a valuable information base for planning and formulating policy for the integrated sustainable development and growth of the nation.
- Green accounting is in preliminary stage in India and whatever shows in the accounts in this regard is more or less compliance of relevant rules and regulation in the act.
- The environmental Ministry in India has issued instruction to prepare detailed environment statement.
- Actually unless common people of India are not made aware towards environment safety, development of this regard is a little bit of doubtful.
- It is the call of the time that corporate prepares a firm environmental policy.
- Take steps for pollution control.
- Comply with the related rules and regulations.
- Mention adequate details of environmental aspects in the annual statements.
- For sustainable development of country, a well-defined environmental policy as well as proper follow up and proper accounting procedure is a must.

#### **SCOPE FOR FURTHER ANALYSIS**

This study has made an attempt to analyze the Importance's, Concept, Need and limitations of Green Accounting. However, no attempt has been made to make a comparative study of factors among the Green Accounting in corporate level, national & international level.

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