

Green Accounting and its Role in Developing India

N Navya¹, PVSN Yamini Apoorva²

¹B.Com (Honors) {1H1}, Bhavan's Vivekananda College of Science, Humanities & Commerce

²B.Com (Honors) {1H2} Bhavan's Vivekananda College of Science, Humanities & Commerce

Abstract: *Green Accounting is the concept that assists business organizations by systematically recording all the environmental costs incurred in terms of damage and depletion of natural resources as a result of their operations. Addressing environmental aspects of the economy is the need of the hour, the world being faced with significant climate change. Business takes from the society and by being aware of the environmental damage being done in quantitative terms, the businesses can compensate through various measures and activities, in order to give back to the society which will be the moral justification it presents for using up natural resources. When we ignore the environmental costs while computing national income, we are in a way over-estimating our national income and hence, even development. Economics is not only concerned with creation of money, but also concerned with welfare of the society. Neither companies nor countries can be developed without addressing the environmental factors and actively taking steps to minimize these costs. In modern economics, welfare is a major component of national income and thereby making green accounting a very relevant practice even from the point of view of economics. Support from government is required for making it mandatory for large scale companies to follow green accounting. And by this we mean, the government encouraging movements that will ultimately help in saving our biodiversity and ecosystem while fulfilling economic objectives. India is also a part of the Paris agreement or in formal terms, Conference of Parties (CoP) protocol on combating climate change and maintaining these records will enable us to track progress comprehensively. Many MNCs have already adopted green accounting, the result of which is reflected in the fall of environmental damage caused by them.*

Keywords: *climate change, environmental costs, moral justification, national income, Paris agreement, welfare component.*

I. Introduction

We must think of our environment as an essential commodity that is universally on high demand by all kinds of buyers be it business buyers or consumer buyers, but the supply remains low and nearly constant owing to the non-renewable nature of a lot of natural resources like crude oil and coal. When we consider it from this point of view, we are consuming a commodity and any consumption has some value exchange associated with it. Every time we use up natural resources or cause damage we are reducing our stock of the commodity, we must hence account reduce in stock and its value to maintain correct records because accounting is the basis for monitoring and regulating all organizations. Making green accounting mandatory and setting limits on the permitted consumption of nature will make businesses accountable for the damage they cause and make it a compulsion for them to payback through their Corporate Social Responsibility (CSR) activities. This will also help in better marketing by creating a position of a socially responsible firm in the minds of the consumers. The policy makers and businesses must work together to achieve sustainable development with minimum environmental costs and high standard of living for the citizens of India.

II. Implications Of Green Accounting In Economics

Green Accounting does great service to the welfare concept of economics. It helps us understand actual environmental impact of businesses and helps take compensative measures to give back to the society. Businesses need to take responsibility for their influence on environment in the past, present and future. They are accountable for the damages caused by them before, during and after the production process, by this we imply that even the environmental costs incurred as a result of usage of the product should be accounted for. And they need to give quantitative analysis of these influences in order to be able compare the results from time to time and keep taking active measures to keep minimizing them. If we want to calculate actual costs during computation of national income and measuring development in a country, we cannot ignore environmental costs, though these might not directly involve monetary costs, they influence development and hence must be accounted and considered. If a business cuts down a large chunk of a forest and makes huge profits from it, the money income definitely rises but the damage done to forest will have severe effects on the ecological balance

of that particular area. So we have an illusion of growth from environmentally unsustainable business activities that will in the long term, backfire. All businesses have the basic economic objective of long term growth and survival, which makes it extremely relevant for businesses to have green accounting implemented.

Anthropogenic activities have destroyed half of the rainforests of our planet and we have no records tracking the damage. They continue to clear hundreds of acres of rainforests per minute all around the globe and most of this goes unaccounted in the national income. Delhi, the capital of our country, has reached such dangerous levels of air pollution that the schools and offices had to be temporarily shut down for a couple of days. And the situation continues to be critical but none this reflected in the GDP of our country. The GDP will continue to show growth giving us an illusion of development. It is clear from these examples that India will be benefited from implementing green accounting by painting the real picture of development.

III. Applications Of Green Accounting In Sustainable Development

The standard of living is an important indicator of economic development of a country and constant national policy changes are made with an ultimate aim of achieving high standards of living. Green accounting gives the policy planners information about the environment in real time. And having real time information about the most important factor that is implied by standard of living i.e. quality of environment gives the policy planners an opportunity to make fully informed decisions that will help India bridge the gap between being a developing country to a developed country soon and in a sustainable manner. India is slowly becoming the global hub for start-ups and we have recently gone fifty ranks ahead in the ease of doing business category. This is a massive achievement but can also prove to be destructive because as businesses operating grow there will be a sharp rise in the demand for natural resources. Growth of businesses is inevitable for development of our country but it is vital to ensure that the development is sustainable in all aspects. Making this process sustainable is a humongous challenge faced by policy makers of our country and for this to work out policy planners and businesses have to work closely together.

IV. Advantages Of Following Green Accounting For Marketing Operations

Green accounting has very important applications in marketing as well. Marketing is all about adding value to the consumer. A consumer using products from a socially responsible firm will be more satisfied than the consumer of a firm which is not. For example, a consumer buying organic vegetables will be more satisfied because he/she is aware of the fact that it has been produced using environment friendly techniques and that they can consume their vegetables without the fear of any chemicals in them. The relationships they develop with consumers become strong and consumer loyalty increases^[1].

A company following green accounting is socially responsible and hence will reap the benefits of increased goodwill. As more and more consumers are becoming conscious and aware of their responsibilities as buyers, they prefer products that have no negative impacts on the society or environment. In marketing, the consumers wants are fulfilled by the marketers in the best possible way, the product are designed keeping the objective of adding value to the customer. When consumers demand products with no negative impact on the environment, marketers will work towards fulfilling their demand to ensure maximum satisfaction of the consumers.

Marketers have to take initiative and educate their customers about the possible impact the production and usage of their products can have on the environment and what the consumers can do on their part to minimize these effects and they must also inform them about the steps being taken by the firm for the same.

V. Implementation

Green accounting can be implemented at the level of a firm or at the national level. Implementing at national level definitely has more benefits to offer. If our government manages to implement green accounting as a compulsion by passing an act in the parliament for all businesses we will be getting a more accurate picture of the national income and actual developmental status of our country which will aid decision- making for the future. Starting off with large scale companies in the initial stages of implementation, the policy must aim at regulating the environmental costs with predetermined limits and making it mandatory for the businesses to cover the costs up through their Corporate Social Responsibility (CSR) activities. It must keep making policies that will encourage businesses to cooperate with them, like, providing tax benefits and other concessions to companies that successfully implement green accounting into their operations. Successful implementation will lead to saving of millions of dollars in terms of environment that will ultimately make India a sustainable business hub and attract foreign investment. This will improve our infrastructure and lead to creation of more Special Economic Zones (SEZs) with world class facilities.

India will also be able to take up more projects aimed at reducing these costs by shifting to renewable sources of energy, thus, making enough contribution to the Paris Agreement. The agreement was signed by

India along with 174 other countries including the European Union, to battle climate change by reaching the goal of controlling the temperature rise of our planet by taking active measures to reduce the emission of Green House Gases (GHGs). The Paris Agreement’s central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. Additionally, the agreement aims to strengthen the ability of countries to deal with the impacts of climate change. When Businesses start reporting their financial statements factored with environmental costs, they get to know how much improvement is required in order to achieve the goals of CoP and can take the necessary measures to cut down these costs. Successful implementation will also require regular monitoring of the accounts presented through auditing. The government needs to play the watchdog in this scenario. So, we can say that implementation of this policy will have a huge impact on the economic and environmental situation of our country.

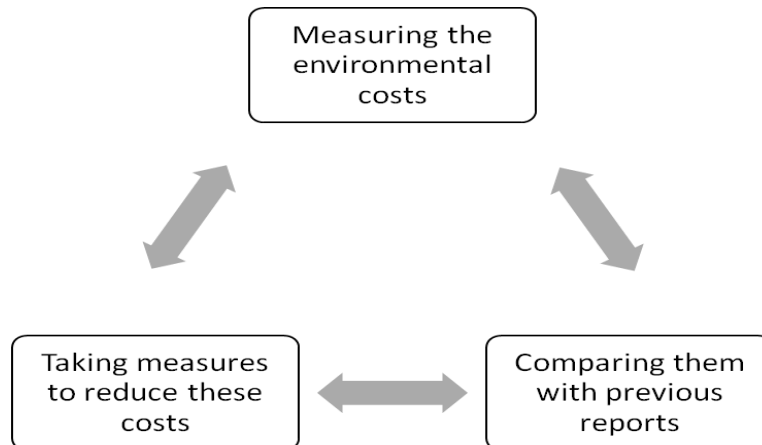


figure 1: cyclic chart representing implementation of green accounting

5.1 Measuring Green Gross Domestic Product

The Green Gross Domestic Product (GGDP or Green GDP) is computed by deducting the environmental costs incurred during the financial year as a consequence of economic growth from conventional GDP. Green GDP measures the loss of biodiversity and climate change in monetary terms. The following is the equation for computing Green GDP:

$$(1) \text{ GDP} - \text{Net Natural Capital Consumption} = \text{GGDP}$$

Economists have developed several approaches for estimating impacts, of these the most reliable techniques examine the impact of environmental damage on different activities and then put market-derived values on those activities. A few environmental economists follow a technique known as contingent valuation^[2] that involves questioning people taken as a random about how much they would be willing to pay in a hypothetical situation ,say ,to keep some natural resource undamaged. This technique will yield answers, but they have not always proved to be accurate. There are obvious downsides to this process in terms of accuracy but it does give us an approximation based on scarcity and rate of depletion, which makes more sense than ignoring them altogether for not being able to get completely accurate values.

VI. Simple Models Representing Practical Applications of Green Accounting.

The following are examples which clearly indicate the magnitude of benefits green accounting can provide to India:-

6.1. Effects commercial plantations on forest cover of India

Commercial plantations like palm and soya plantations are one of the main causes of clearing rain forests. These crops not lead to clearing of forests but also lead to infertility of the soil due to excessive use of chemical fertilizers and pesticides in order to maximise the output. Palm oil and soy products are used for production of almost all processed foods like chips, noodles, chocolates etc., these can be substituted for other kinds of oils and ingredients. If producers manage to substitute these inputs with other alternatives and consumers make an active effort in making sure they consume products that do not harm the environment, we will be cutting down on the environmental costs incurred to a very large extent and thus, there will be real growth in the GDP.

6.2. Electricity Generation and its implications on our natural capital.

66.6% of India’s electricity is generated through fossil fuels which are non-renewable sources of energy and lead to depletion of natural capital, of this installed capacity of generation through coal is 58.7%. Industrial consumption of electricity in India is at 44.20% which is expected to grow owing to the fact that we are a developing country. Generating electricity from fossil fuels is cheaper due to the abundance of coal reserves India holds. But, coal is an exhaustible resource and at the rate at which it is being consumed will deplete the reserves to scarcity at some point in the future. The share of electricity produced from renewable sources is 31.3% and the installed capacity of generating electricity through solar energy is currently at 4% in India. The investments involved in setting up solar power-plants are relatively very high in the short-run. But in the long-run the low operating costs and sustainability of solar power will prove to be extremely beneficial in many aspects. And the benefits are threefold:-

- Firstly, we will have guaranteed consistent supply of energy, benefitting producers.
- Secondly, there is no pollution involved in the process of generating electricity, benefitting the environment.
- Thirdly, the operating costs incurred are low and the cost per unit of electricity generation is low, therefore, the selling price will also reduce, benefitting consumers.

We can gather that in the short-run fossil fuels, particularly coal, may offer generation at cheaper rates, but, in the long-run renewable sources like solar energy will only sustain.

6.3. Biodiversity protection and tourism industry in India

In 2016, India received 9.6% of its GDP from its tourism industry. And India’s tourism industry thrives on its biodiversity because of the extravagantly high levels of species richness apart from our cultural heritage. India is home to 2 of the world’s 25 biodiversity hotspots, protecting these is of extreme importance to our government. Green accounting is going to help the government track the state of the quality of environment and biodiversity.

6.4. Advantages of going paperless in the average Indian office.

- The number of sheets of paper an average Indian office uses per year is 10,000.
- We are assuming that there are 250 employees in an average office.
- A single sheet of paper costs Rs.0.50.
- A single tree provides raw material for the production of 8333.3 sheets of paper.
- There are around 15.27 lakh registered offices, but, there are only 10.76 lakh active offices.

We considered the above while calculating the number of trees that would be saved per year by going paperless. A single firm will save 300 trees in a year and in totality of all the firms we could possibly save 322,800,000 trees in a year. This is an exorbitantly high amount of saving which can be done by going paperless. Further, going paperless would mean increase use of digital records which use electricity to operate, if they manage to use clean sources of electricity, the environmental costs saved would be beyond imagination. This is definitely an opportunity to tap .

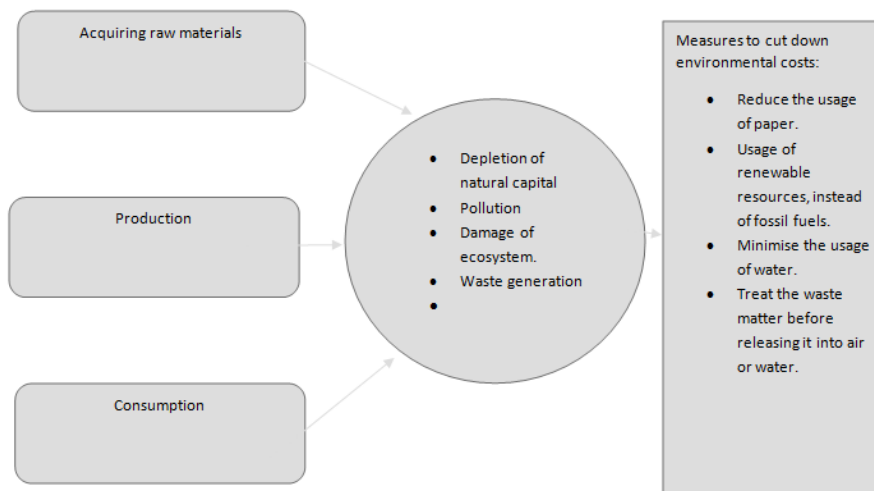


Figure 2: Diagram representing the kinds of environmental costs and measures to cut them down.

VII. Conclusion

All throughout, we can observe that accounting of environmental costs provides a conspicuous basis for managerial decisions, policy making and taking measures to reduce these costs that will ultimately help save our environment. Even though the government has been making several efforts through special acts and policies for the environment, none of them integrate environmental costs into business operations, which reflect in our GDP. Green accounting thus, gives us a more authentic picture of the actual development taking place.

Mandatory green accounting will prove to be a successful policy implementation only with governments and businesses collectively making efforts. Businesses need to aim at minimising their environmental costs in the present and plan and redesign their products and operations to reduce them in the future. The government needs to regulate the standards to be followed for the businesses and also has to make sure they are being complied with.

Businesses might find the costs of redesigning their products and operations expensive in the short-run but they will help the business sustain and grow in the long-term. Redesigning products and operations might involve steps like using new technology, changing input, modifying product design etc.

Through examples, we have examined the importance of green accounting to developing India from various aspects. Once India implements green accounting successfully we will start pacing faster on our road to becoming a developed country.

References

- [1] Philip Kotler, Gary Armstrong, Prafullah Y. Agnihotri, Ehsan ul Haque, *Principles of Marketing: a South Asian Perspective* (Tamil Nadu: Pearson India Education Services Pvt Ltd, 2001)
- [2] Paul A. Samuelson, William D. Nordhaus, *Economics* (New Delhi: Tata McGraw-Hill Companies, 1948)