

Green Accounting and Sustainable Development

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Abstract

Green Accounting and Sustainable development are inseparable .It is essential to adopt Green Accounting for sustainable development. Sustainable Development means the procedure of development should be in the manner that our upcoming generations may be left with adequate resources.

Green Accounting is a type of accounting that strives to include environmental costs into the financial results of operations. It has been argued that gross domestic product ignores the environment and therefore policymakers need a revised model that incorporates green accounting. The major purpose of Green Accounting is to help businesses understand and manage the potential quid pro quo between traditional economics goals and environmental goals. It also increases the important information available for analyzing policy issues, especially when those vital pieces of information are often overlooked.

Green accounting is said to only ensure weak sustainability, which should be considered as a step toward ultimately a strong sustainability. Keeping in mind the environmental depletion, we as inhabitants of this planet should utilize the available resources precisely so that the concept of sustainable development may be materialized in the fast growing era of technology which is accountable for the present global warming and other environmental damages. Every person should try to save this planet earth in every way whether it is saving water or it is avoiding air pollution or noise pollution.

Green Accounting *includes costs to environment in decision making* and the practice of including the indirect costs and benefits of a product or activity, for example, its environmental effects on health and the economy, along with its direct costs when making business decisions. In other words, the Green accounting is a type of accounting that attempts to factor environmental costs into the financial result of operations.

This term "Green Accounting" was first brought into common usage by economist and Professor Peter Wood in the year 1980.

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Dictionary Term

Accounting including costs to environment in decision making the practice of including the indirect costs and benefits of a product or activity, for example, its environmental effects on health and the economy, along with its direct costs when making business decisions. The Green Accounting is also called environmental accounting.

Green Accounting Definition

The term, **green accounting**, has been around since the 1980s, and is known as 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 forming decisions related to their business activities.

Definition of Environmental Accounting

It includes costs to environment in decision making the practice of including the indirect costs and benefits of a product or activity, for example, its environmental effects on health and the economy, along with its direct costs when making business decisions.

From the perusal of aforesaid meaning and definition of Green Accounting as well as environmental accounting, it reveals that green accounting as well as environmental accounting is synonymous but environmentalism is a broad philosophy, ideology and social movement regarding concerns for environmental conservation and improvement of the health of the environment, particularly as the measure for this health seeks to incorporate the concerns of non-human elements.

Environmentalists support the preservation, restoration and/or improvement of the natural environment, and may be referred to as a movement to control pollution. For this reason, concepts such as a Land Ethic, Environmental Ethics, Biodiversity, Ecology and Biophilia hypothesis figure predominantly. The environmentalist is an attempt to balance relations between humanity and their broader organism and biogeochemical milieu in such a way that all the components are accorded a proper degree of respect. The exact nature of this balance is controversial and there are many different ways for environmental concerns to be expressed in practice. Environmentalists and environmental concerns are often represented by the colour green, but this association has been appropriated by the marketing industries and is a key tactic in the art of Green washing.

As we all know, businesses are formed to deliver services or produce products in order to earn a profit. In the 21st century **accounting** goes beyond the bottom line of black or red – it includes “**green**”, too. With the growing **green** consumer awareness, companies are more than ever expected to align its business strategies with environmental initiatives. Environmentally conscious companies have already discovered that they can generate business strategies to help them reduce their carbon footprint, minimize their environmental impact, make the best use of natural resources, become more energy efficient, reduce costs, and exhibit social responsibility – all at the same time.

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Companies who are ready to become an integral part of President Obama's Green Economy through governmental initiatives will need to expand their **accounting** staff by hiring accountants who specialize in "**green**" or environmental **accounting**.

Green Management Accounting According to the EPA, **green** or environmental management **accounting** is "the identification, prioritization, quantification or qualification, and incorporation of environmental costs into business decisions." Green Management Accounting uses "data about environmental costs and performance for business decisions. It collects cost, production, inventory, and waste cost and performance for business decisions. It collects cost, production, inventory, and waste cost and performance data in the **accounting** system to plan, evaluate, and control."

Environmental management **accounting** thus represents a combined approach which provides for the transition of data from financial **accounting** and cost **accounting** to increase material efficiency, reduce environmental impact and risk, and reduce costs of environmental protection.

Green or Environmental Accountants

Green accountants are held responsible to identify and track **green** costs often times working with site, research and development, and production managers when planning their budgets. In the past, such costs were buried in overhead preventing a clear picture of the cost savings and benefits to the product, process, system or facility responsible for the **green** initiatives.

Green accountants help management recognize that the tax benefits, rebates and lower costs of being environmentally friendly add up to a real bottom-line reward for doing the right thing

Green Accounting Methodology for India

Green Accounting for India and to present a preferred methodology and models to reflect natural capital and human capital externalities in India's national accounts, measuring as depreciation the depletion of natural resources and the future costs of pollution, and rewarding education as an addition to human capital stock. Our over-riding purpose is to show that Green Accounting for India is desirable, feasible, realistic and practicable and that a start can be made with available primary data already being collected by various official sources of the Government of India.

First of all to introduce the system of Green Accounting in India, we should focus on sustainability of Green Accounting, which is time and again also discussed by Hon'ble Supreme Court in catena of judgments, therefore, we should set out a rationale for Green Accounting for India.

In this paper, we describe how, applying and developing SEEA (2003) methodology further, our "Green Accounting for Indian States & Union Territories Project" ("GAISP") has set up "top-down" economic models for State-wise annual estimates of adjusted Gross State Domestic Product (GSDP) in order to capture at a State level the main externalities from unaccounted flows of non-marketed services & unaccounted changes in human capital & natural capital stocks. We outline the approach used by GAISP in all key areas, and we also comment on the degrees of conservatism built into our approach. Our preferred methodology as outlined has the advantage of having been feasibility-tested,

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as we have completed most of our project work. The dissemination of our results and the adoption of a Green Accounting methodology in India's 5-year plans and in presenting annual growth statistics could enable policy makers and the public to engage in a debate on the sustainability of growth, enable inter-state comparisons to be made, and support more appropriate budgetary allocations to areas which provide economic value but are not recognized in conventional national accounts.

In this respect, the Central Statistical Organization (CSO) in India is working on a methodology to systematically incorporate natural resources into national accounts in different states for land, water, air, & sub-soil assets. However, the CSO approach develops accounts for some states & for some sectors, and their studies are still in progress. In contrast to the CSO approach, we use a top-down or macroeconomic approach to model adjustments to GDP/GSDP accounts, for two reasons.

Firstly, a top-down approach has the advantage of providing a consistent and impartial national framework to value hitherto unaccounted aspects of national and state wealth and production. Secondly, it optimizes extensive existing research which is not yet tied together in a manner to be useful for policy analysis. Thus we hope to provide a much-improved toolkit based on international best practice for India's policy makers to evaluate the economics of their policy trade-offs, and will enable them and the public to engage in a better informed debate on the sustainability of economic growth, using national as well as inter-state comparisons. The materiality of calculated externalities in sectors such as education, health and natural resources are particularly interesting as these sectors are essential contributors to both sustainable development and poverty eradication.

1. Rationale for a system of "Green Accounting" for India

India has spent the past decade building a growth dynamic that was missing in the earlier quasi-socialist regime. The cumulative impact of the reform process appears to be generating growth, however, it is also desirable to monitor and channel the forces of growth and investment in order to ensure that they truly improve the quality of life for current and future generations, and to manage the economy sustainably, one must also measure it with the lens of sustainability. Furthermore, there is an asymmetry between man-made and natural capital in that depreciation in the former reflects in GDP accounts but the latter does not. In this context, it should be recognized that GDP growth is too narrow a measure of economic growth and not a measure of national wealth, and this is why we propose a "Green Accounting" framework for India and its States and Union Territories. Key externalities in the form of creation and destruction of Human Capital and Natural Capital both need to be explicitly measured, because they have a significant impact on the long-term *sustainability* of India's growth.

1.1. Human Capital Externalities: Education and Health

Education and health are key components of human capital, and our adjusted measure of state wealth must therefore include estimates of investment in these two areas. Public investment in education as a % of GDP has been low in India (in comparison to China and developed nations) and much of this has traditionally been skewed towards tertiary education. However, the primary school enrollment rate is now at about 95% due to private spending and the work of NGOs (and some improvement in targeting by government as well). Unfortunately, according to ADB data, only 65% of girls and 70% of boys who

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enter the first grade are able to reach the fifth grade. The equivalent rates in China are 94% for girls and 93% for boys. India's traditional skew towards tertiary education has supported the country's recent success in the hi-tech services sector. However, this phenomenon will not spread through the rest of the economy unless primary and secondary schooling is also strengthened, as it provides a productive foundation as well as a means of identifying the highest potential from amidst a gigantic human resource pool. Public spending on health as a % of GDP is even lower than on education, and also lower than the corresponding percentages in China. The threat to public health is compounded by the poor state of civic amenities such as water supply, drainage and sanitation. Privatization of education and health are observable trends in India, and the authors believe that to be the right direction. Nonetheless, we feel it is important to quantify the scale and effectiveness of both public and private efforts. In our view, this would allow proper targeting of public spending and improvement in the framework for attracting private funding.

1.2 Natural Capital Externalities: Freshwater, Forests, Agricultural Land and Sub-soil Assets

India's Natural Capital, apart from its Human Capital, is the other large area of unaccounted externalities. India's record in conserving natural capital over the last fifty years is mixed, and reflects a combination of factors and circumstances. On one hand, there has been an effort towards creating protected areas around the most precious accumulations of bio-diversity.

India has 592 protected areas, National Parks and Sanctuaries, predominantly forested, covering 4.6 % of land mass (MOEF, 2003) and extensive protective legislation has been enacted since independence. On the other hand, there is widespread violation of regulations by encroachers, illegal miners, property developers, poachers and loggers. Legal action by mining and logging interests to overturn protective legislation is not uncommon, although this have been countered quite effectively by environmental NGO's and citizens interest groups. Whilst the pace of conversion of forest land to other uses is the most visible depletive trend impacting natural capital, there are many other forms of depletion of natural capital – sometimes helped by populist or insensitive government policy. For example, subsidies have often led to the use of inappropriate agricultural technology and crop choice that have led to falling water tables, rising salinity, water logging, surface water pollution and impoverishment of cropland. Similarly, India's mineral wealth has been exploited directly or indirectly by government without adequately considering import alternatives that would have come at a lesser environmental cost. Failures range from the use of out-dated technology to out-dated policy frameworks that have not been changed from the days of 'import substitution' as a key policy objective.

The declining quality of freshwater in India has received occasional attention when it is raised by the press in the context of specific "point sources" of pollution in various locations, and when it affects the quality of drinking water in high-profile cities. It passes notice that the decline in water quality due to chemical pollutants from ill-managed industrial wastes, use of fertilizers and pesticides in agriculture, and from the accumulation of poisonous solid wastes in and around cities and towns is a nation-wide phenomenon of significant proportions. There is enough tracking of water quality, but no widely-accepted means of evaluating the damage done in economic terms, in the form of potential costs towards purification and restitution of water quality.

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1.3 Inadequacy of Democratic 'Checks and Balances'

Despite the above problems on both the Natural capital and Human capital fronts, two positive influences are present which can take India along a path of sustainable development. Firstly, India is a vibrant constitutional democracy with the attendant democratic institutions, especially an independent judiciary and a free press. We feel that public interest does prevail if long-term costs and benefits are clearly demonstrated in specific cases. Secondly, the growing exposure of citizens to the rest of the world (helped by widespread use of the English language) and the educational work of NGOs has increasingly sensitized sections of the urban public about environmental degradation and to the value of education as a means to better employment. Nevertheless, there are limitations to what can be achieved by an educated public and the checks and balances of democracy. In reality the action taken by the public boils down to sporadic or narrowly focused public interest litigation. Albeit well-meaning, such public action can only have limited conservation or sustainability benefits whilst the vastness of India's lands and the opaqueness of its public information systems (again, notwithstanding appeals made under the Right to Information (RTI) Act) prevents material achievement on the sustainability front through this route. Since we do not see the efforts of NGO's and public interest litigation as sufficient action to reverse the current trend in India towards natural capital degradation, we point to the need for incorporating the importance of natural resource evaluation and management into the mainstream of public policy and administration. This in turn argues for the creation of an appropriate set of metrics for natural resource accounting at the National and State level - quite simply, one cannot manage what one does not measure.

1.4 Traditional ('SNA') GDP Accounting versus Green Accounting

The only yardsticks of growth or development that are available today -Gross Domestic Product (GDP) at the National level or Gross State Domestic Product (GSDP) at the State level - is unfortunately not designed to capture the significant gains/losses to human capital and natural capital that happen year after year and affect the true or holistic wealth of the nation and its people. Much recent work on 'inclusive wealth' measurement highlights the importance of holistic measures of wealth. National wealth should include not just a measure of manufactured assets and financial assets (physical capital), but also natural capital (oil, other minerals, forests, freshwater resources, cropland, fisheries, etc. human capital (knowledge and skills), and social capital (institutional and legal infrastructure, political maturity, social harmony, etc. Sustainable growth is then defined as that which increases per-capita national wealth, defined in this 'inclusive' or holistic manner. In the absence of any measure of sustainable growth, it is not surprising that India and its States often embark on unsustainable growth initiatives, at a very large future cost to the economy, to society, and to the natural ecosystems within which they survive.

The emphasis of SNA on "GDP" as the key measure of growth will probably be studied by future generations as the single most significant design defect in the economic history of mankind. An appropriate alternative, Green Accounting, entails the estimation of prices for all national assets, including natural and human capital assets, and their inclusion in the 'financial statement' of the nation, so it is no mean task. 'Green Accounting' is a methodology for capturing the so-called 'externalities' of

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'mainstream' economics (which include most material and unaccounted changes in natural capital, human capital, and social capital) by estimating their stock or net asset values, and thus bringing them within a common framework of value accounting for the nation. In practice, Green Accounting involves an array of quantitative estimations modeling and valuing the non-marketed services of environmental assets such as forests, calculating the value of education as a generator of future incomes, present-valuing future liabilities in the form of pollution abatement costs and healthcare costs, etc. This appears quite daunting an exercise, however, as we describe below, there is a sufficient body of work and precedent which will enable India to implement holistic Green Accounts. The benefits are immense, as Green Accounting would better enable governments to evaluate choices without a bias against future generations, or a bias in favour of man-made assets as against natural assets. It would present in a different & holistic economic light choices such as conserving precious ecosystems rather than surrendering them at throwaway prices to logging interests for a relatively minor economic gain.

There are other legitimate grounds for dissatisfaction with GDP as a measure of growth, such as the inability of GDP- optimizing policies and systems to engender financial and economic inclusion, but in this paper we do not address this issue. However, we do wish to point out that Green Accounting - driven policy focuses on conserving forest resources (a significant dependency for the poor household) and on investing more in primary and secondary education (important means of providing the poor with better future livelihoods) can only serve to improve India's current and disappointing state of financial and economic inclusion.

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