

Green Accounting: Sustaining the ecological balance

DR A H M MUSTAIN BILLAH

GENERALLY, Green stands for full coverage of forest and balanced ecosystem demonstrating a lively and sustainable environment. In environmental and resource economics literature green accounting is the practice of estimating the environmental costs/benefits and to adjust those with conventional System of National Accounts (SNA).

The development of environmental and natural resource economics has highlighted the critical role that policy failure and market failure play in the degradation of the environment. This has put the focus squarely on policy, where it belongs. Policy failures come in many forms, from inadequate property rights regimes, to under-pricing of natural resources, to subsidies on energy, fertilizers and pesticides that lead to negative impacts on the environment. Market failure exists wherever economic activities impose costs on others, in the form of pollutants carried downwind or downstream for instance, without any mechanisms for remedy. Thus the traditional economic indicators, in particular the conventional SNA, hardly demonstrate the true picture of the economy. This has led many schools of thought to conclude, like R Repetto, that the difference in the treatment of natural resources and other tangible assets [in the existing national accounts] reinforces the false dichotomy between the economy and 'the environment' that leads policy makers to ignore or destroy the latter in the name of economic development.

The net national product is estimated for measuring the sustainability, accounting only for the depreciation of produced assets, ignoring the value of depletion of natural resources and degradation of environment. They cannot serve, therefore, as guide for policies aimed at achieving sustainable development. 'Greener' aggregates, it is hoped, can. Therefore, the strong potential for resource and environmental accounting to influence policies in developing countries needs an urgent promotion.

Areas Covered

Environmental and resource accounting focuses on estimating stocks and their changes in natural assets in physical and value terms. This includes biological assets such as produced or wild sub-soil assets for example, proven reserves, water and air and land areas including terrestrial and aquatic ecosystem like ecotones. A biological natural asset refers to living plants and animals of economic importance. It has dichotomous role to play in green accounting as simple biotic resources such as endangered species and as part of complex ecosystems (Gilbert, 1990). Similarly land area represents not only the area itself but also other related ecosystems. This means land refers to soil and all other proven, probable and possible resources associated with land. Water and air are taken into account actually and potentially used or affected by economic

activities. Due to lack of clearly demarcated asset boundaries, accounting of air refers to only changes of quality in particular regions. Thus in green accounting measurement in both physical and monetary units would be necessary to obtain more comprehensive picture of changes of natural capital. Physical accounts are measured in units of weight, number and areas. Qualitative measures could supplement to quantitative measures for recording inventories of natural capital. The combined changes in asset quality and quantity are called volume changes.

Background

During the last five decades, ever since the end of World War II, industrial countries have experienced impressive economic growth and have achieved high standards of living. The developing world, which is the home to three-quarters of the world's population, has gained in purchasing power, life expectancies and literacy rates. However, inequitable distribution of income in low and middle-income countries prohibits large segments of society from enjoying development

buildings, and infrastructure, known as physical capital. Stocks of physical capital generate flow of goods and services as the assets are used in the production process. A second type of capital is known as natural capital. Natural capital is defined as "the stock that yields the flow of natural resources - the forests that yield the flow of cut timber; the petroleum deposits that yield the flow of pumped crude oil; the fish populations in the sea that yield the flow of caught fish" (Daly, 1992). Additional types of capital include human capital (i.e., the stock of knowledge, health and skills of the population, etc.) and social capital (i.e., civic institutions upon which functioning societies are grounded, popular participation in societal decision making, social cohesion, etc (Kellenberg, 1995).

In Agenda 21, a key document emerging from the Rio Summit in 1992, it made integrated environmental and economic accounting mandatory for the member countries. Such work would provide these governments with a set of supplementary indicators and would encourage the collection of relevant information and compilation in the area of natural resources and the environ-

ment. The multidisciplinary expert meetings were held from the mid-1980s to the early 1990s to address various issues in national accounting. From the environmental perspective, the two most significant changes introduced in the 1993 SNA were:

1. A more comprehensive view as to what constitutes an asset - all assets that contribute to marketable production are included. Such assets include land, subsoil resources, cultivated plants and livestock, and noncultivated natural assets that yield products such as timber. Where harvests exceed a sustainable yield, and where therefore stocks are being drawn down, the excess is subtracted from current income.

2. It was recommended that integrated environmental and economic accounting should be done in satellite accounts that are linked with the main (or 'core') accounts of the SNA. Satellite accounts try to integrate environmental data sets with existing national accounts information, while maintaining SNA concepts and principles as far as possible. Environmental costs, benefits and natural resource assets, as well as expenditures for environment protection, are presented in flow accounts and balancesheets in a consistent manner. That is how the accounting identities of the SNA are maintained.

Need for Green Accounting

produce goods and services in perpetuity. The decline in the productive capacity of capital is accounted for by a depreciation allowance, which amortizes the capital asset's value over its useful life. Like an allowance is made for the depreciation of physical capital, so there must exist an accounting for the decline in productivity of natural capital. Hicks wrote that if an individual's receipts are derived from the exploitation of a wasting asset, liable to give out at a future date, the receipts are considered in excess of his income, the difference between them being reckoned as an allowance for depreciation (Hicks, 1946).

Globally there is increasing awareness that economic production cannot be measured without accounting for environmental concerns. While revenues derived from resource extraction have the potential to finance investments in industrial capacity, infrastructure, and education, a reasonable accounting representation of the process would recognize that one type of asset has been exchanged for another. If natural capital elements can be identified and purged from income measurements, a more accurate level of income would emerge which can better reflect economic performance and can provide an improved basis for policy prescriptions.

A system of natural resource and environmental accounts provides a framework for organizing the information required for effective policy. In

their most basic form, NRA provides consistent inventory of resource stock and flow accounts may be developed for various resources, including a unique set of resources such as special ecosystems. In a more advanced form, natural resource and environmental accounts are used for analyzing and forecasting the impacts of changes in environmental policy. As an analytical tool, natural resource and environmental accounts link changes in policy to changes in human activity and resource depletion or growth.

As long as human activity is at the level below the regeneration capacity of natural environment, there is no secular decline in the quality of these resources. In order to maintain the above balance, a measurement of income incorporating degradation of the natural resources becomes necessary. True income can be thought of as a maximum amount that can be consumed in a given period without reducing the amount of possible consumption in the future period. This concept encompasses not only current earnings but also changes in the assets: capital gains increase income; capital loss reduces income. Present economic management requires that

whereas net price method measure the benefits foregone for the current period. Fahmida (1998) applied the later method for the valuation of forest resource in Bangladesh. The attempts of Green Accounting by IUCN, the estimation of forest resource depreciation by Fahmida (1998) using net price method and gas resource accounting by Billah et al. (2000) applying user cost method can be good guide to identify the major constraints of resource accounting in Bangladesh.

As mentioned earlier, depletion of forest resources expressed in purely physical terms hides important differences in composition, quality, age, and value among timber stands. However, accounting methods for renewable resources are not well developed. Renewable resources like forestry and fishery are more difficult to value for several reasons: (a) these resources often have a commercial value as well as an amenity or a recreational value; (b) ownership rights cannot always be established (e.g., ocean fish stocks); and (c) these resources have the potential to regenerate, so their use does not necessarily result in a net reduction in either the yield or value of the stock (Landefeld and Carson, 1994).

In order to carry out forest resource accounting in Bangladesh urgent attention is needed to generate data on species wise domestic and FOB log prices for commercial species. Primary data for resource extraction cost may be generated through sample survey. Post felling forest growth study will provide species wise growth rate per hectare per year or biomass volume in tonne. For estimating forest management an economic cutting cycle needs to be determined. The valuation of mangrove forest such as non-timber forest products, non-forest products and its value in ecosystem and global warming reduction is equally important to capture. Moreover, the value of forest resource in terms of eco-tourism and medicine needs to be captured. In these cases Travelling cost Method (TCM) and Contingent Valuation Method (CVM) are quite appropriate.

Similarly, in order to carry out gas resource accounting in Bangladesh like that in Thailand (1996) urgent attention is required to ascertain current and potential reserves of gas in the country with differences in the quality. The unit price and extraction cost in different locations are also the vital information to be collected. Gas is depletable resource with supply situation a projection of the potential demand with respect to growing population may provide a guess of exhausting the stocks. Thus the information on annual rate of extraction, consumption, demand and supply situation are very crucial for physical resource account. The estimation of physical account is the prerequisite for monetary valuation. The adjustment of resource depletion with national accounts will demonstrate the future economic sustainability.

Dr Billah is an Environmental and Resource Economist

Accounting serves to separate from the proceeds accruing to owners that part which they could use to finance their families' current needs. Owners have to guard against consuming their capital because it is the source of their continued well being. Maintaining capital intact is prudent. Thus, in order to account for income properly, a portion of current receipts must be used to repair, restore and maintain capital; to preserve its ability to produce goods and services in perpetuity.

Advertising communication in augmenting economic growth

ABMS ZAHUR

TO some much advertising represents wasteful expenditure because (a) sellers compete in persuasive advertising with the result that their efforts and resource go into reputation making, (b) By building strong brand following advertisers avoid price competition and consequently often secure high prices, (c) It contributes to concentration of supply, and makes entry into industry difficult thereby interfering with free play of price competition. They also question its contribution to innovation and product development by laying stress on view that advertising has encouraged only product of differentiation thereby adding to the cost of goods and tending to make the consumers' buying problems complex and confusing. Some others, however, do not accept this view. They opine that the critics have ignored the forces that have called forth advertising in changing patterns of use and in increasing volume.

Advertising rests on the need for communication to inform people of things for sale or things needed. In Great Britain and the United States by the end of the eighteenth century advertising communication had become common posters, handbills, newspapers and periodicals were used to inform the public of luxury goods for sale. There was no national market either in England or the United States. The markets were strictly local. The towns were so small that the craftsmen retailers, the small specialised retailers and such general shops handling a variety of merchandise were generally known to the populace. In Great Britain advertising by retailers and the fixed shops were not inclined to use advertising because of tradition. In America closely regulated guilds never gained a foothold and the retailers were never held back from

aggressive selling by the guild tradition.

Advertising as a significant force in trade did not occur until the use of power machinery and the factory system of production had become well established during the nineteenth century. Large use of advertising started with the process of industrialisation, which called for development of roads, and canals and then rail roads and automotive power to take care of the needs of commerce in national markets. With the factory system the trade mark came into its own. The value of these marks as a basis for securing patronage had become known to businessmen. After factories become well-established and their

consumers in their buying and to what degree they might reduce brand advertisement is not determinable. Standards can always be helpful to the sophisticated, logical buyer. However, availability of government grades has not replaced the use of and reliance of consumers on brands in certain items.

There were only relatively minor changes in the character of trade in towns of the seventeenth and eighteenth centuries and small towns, a hundred years later, at the dawn to the industrial revolution. By the middle of the nineteenth century the first phase of the industrial revolution was complete in Great Britain. In the United States by 1850

growth of the mail order firms, the increasing importance of the corporate chains, and the amalgamation of independent retailers into cooperatives and voluntaries have brought mass distribution channels with a mass buying power that parallels the power of the large manufacturers. Over this period as manufacturers increasingly sought to gain control of ultimate demand, wholesalers and retailers did not remain passive. When the volume of sales became large enough to make packaging and labelling feasible branding of retailers occurred. In recent years, however, there has been a growing tendency on the part of the large private brands to use magazines and other national or

traded, in market reached and in their competitive strengths; (b) The main objective of each management is to grow and prosper or at least survive in a competitive world; (c) For a successful marketing of the goods it produces or trades, each management must use its best judgement as to what sort of marketing programme or mix of marketing tools and policies it should adopt for both short and long run success; (d) How much a management should spend on advertising has never been known with precision. The amount rests on judgement as to whether the overall marketing programme is promising and whether the volume and kind of advertising employed in the programme is well designed; and (e) Freedom in innovation in the design of institutional organisation and in procedures and techniques which promise success in the marketing of goods, has been valuable from the standpoint of bringing efficiency in the marketing of goods. Therefore, such freedom of innovation should not be restricted provided that it does not appear as counter to public policy.

Though advertisement and aggressive selling are not the causes of investment in either new enterprise or the expansion of established business, management have come to rely on advertisement as a tool that can speed up the demand that make investment worthwhile.

output was moving into distant markets, trademarks assumed new dimensions and advertising was assigned a new role, namely the seeking of sales and the building of reputation for manufacturers' branded products in widespread traditional or national markets. For consumers brands provided a basis for securing merchandise of known or reputed quality. For manufacturers they provided a means of seeking sales and continuing patronage over large areas.

With the advent of the widespread practice of branding of manufacturers a grading device which permits the consumers to identify a particular product as one which he has learned to associate with an expected standard of taste or performance or other quality. People want further standard specifications for consumer goods. How far these standards will be an aid to



regional media to build reputation for their brands and institutions. The managements have been seeking to determine whether brand and institutional advertising on a broad scale will help keep their corporations viable in the complexes of a dynamic, competitive world. The private branders have generally made price an important element. In their bid for consumer favour against the stress on product differentiation employed by manufacturers.

There are different opinions about the extent of expenditure on advertising communication. We have to determine the extent. In support of retaining management's freedom of determination of the amount to spend the following points may be considered. (a) The free economy is made up of a host of enterprises varying in size, in products manufactured or

the century, brand advertising grew rapidly and competition between brands became keen. Competition under the brand system has turned in increasing degree to a competition in product quality. The quest for improvement or innovation that might be exploited through advertising has been a common management formula, particularly since World War II.

The trend towards manufacturers management problems arising in the marketplace rather than in the production areas came into full play since World War II. In recent years managements have turned increasingly to institutional advertising or to the promotion of overriding family brands or symbols in their efforts to build reputation to aid in gaining the patronage of consumers.

From the early twentieth century the groundwork was laid for widening of the battle of the brands. The

Dr. Rubaiul Murshed

All health information to keep you up to date

Tips on peptic ulcer

- 1. Ulcers are "sores" that frequently affect the stomach and the first part of the small intestine (duodenum).
- 2. Bacterial infection is the most common cause of duodenal ulcers.
- 3. Stomach ulcers are often a side effect of pain killers and anti-inflammatory drugs used primarily to treat arthritis.
- 4. Alcohol ingestion, cigarette smoking, and emotional stress may also influence the development of an ulcer or interfere with its healing.
- 5. Upper abdominal pain is the most common symptom of ulcers, but many ulcers cause no symptoms at all.
- 6. Ulcers may hemorrhage (bleed) into the gastrointestinal tract; this results in the passage of black ("tarry") stool. Very serious ulcer may also cause a blockage between the stomach and small intestine and this complication results in persistent vomiting. Severe pain results from the most urgent complication of ulcers peritonitis caused by a tear through the wall of the stomach or duodenum.
- 7. Almost all ulcers can be treated successfully, usually without surgery. Many ulcers can be prevented.
- 8. Ulcer treatments include antibiotics, agents that neutralize gastric acid or reduce its secretion, and drugs that strengthen the resistance of the stomach and duodenum.

Health and mind

Keep yourself busy

This means many different things to different people, from being active in religious places to keeping informed about political issues. People who regularly participate in activities that are meaningful to them, such as helping out family members, taking care of a child, volunteering, gardening, and even doing housework and routine house maintenance, appear to age more successfully than people who don't regularly participate in such activities.

Tomorrow: Around the world and other tips.

Garfield®

by Jim Davis

