

The Marine Economy and Environmental Values

Maricor Ebarvia-Bautista

Many economists and environmentalists have recently criticized the Gross National Product (GNP) and Gross Domestic Product (GDP) as inadequate measures of social welfare. The criticism stems from the fact that this measurement of national product only measures the depreciation of capital assets but does not account for depreciation of natural capital due to environmental degradation and resource depletion. An alternative approach involving the estimation and inclusion of these omitted environmental features into the national product has been the advent of the economic and environmental accounting and the 'Green National Product'.

An essential factor in developing plans and policies is the recognition of the probable availability of resources for human use and life-support systems. This uncertainty necessitated a shift in the approach wherein plans and projects are to be within the perspective of sustainable development. The policymaker needs to begin viewing the management of ecosystems in the broader context of social and economic objectives. This approach requires the proper identification of goods and services provided by resources and determination of their 'monetary' values. Often, resources are appreciated only in terms of the direct market values they provide, and these are the values reflected in the traditional national income accounts. Because non-use values and ecosystem services are not fully quantified in markets, they are often given little weight in policymaking. Unless the value of the natural environment is expressed in monetary units, it will continue to be assigned a zero value. The undervaluation of resources results in wrong policies being made and in the over-exploitation of natural resources by people who are not well-informed of the consequent impacts.

Valuation of natural resources and the environment necessitates the estimation of benefits and costs of using these natural assets. The concern is if a particular use (and non-use) is contributing net economic benefits to society. The total economic value (TEV) of a natural resource or environmental service is the amount of resources, expressed in common units of money that society would be worse off if the natural resource or environmental amenity were lost. The various use and non-use values of coastal habitats and resources are at risk due to a number of factors, primarily, population growth and unregulated development. In particular, over-fishing, use of destructive fishing gears and methods, widespread deforestation, conversion of mangroves, pollution, siltation and sedimentation, and over-exploitation of corals and other marine organisms are threats to the continuing existence of coastal ecosystems. These problems,



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if not mitigated, will lead to the loss of environmental values and services and economic opportunities.

Major economic development activities (e.g., tourism, commercial fishery, mariculture, shipping) occur in the coastal areas, which support a number of land uses, such as agriculture, aquaculture, settlements and industries, and provide a base for transport and trade. The artisanal fisheries and small-scale fish processing are also important sources of income, especially for coastal communities. Fish, shellfish and prawns are not just significant export products, but are vital sources of food and protein – the losses would result in considerable socioeconomic consequences. However, focusing on the contribution of the marine-related sectors to the economy can create a false sense of security if sustainability and adverse environmental and social impacts are not taken into account.

As urbanization takes place it is becoming obvious that many of the uses of the coastal ecosystems and the demands from them are incompatible. Sandy beaches provide both ecological and socioeconomic functions. They provide shoreline stabilization, and are primary nesting habitats for marine turtles, seals and other marine mammals and reptiles. These functions are being threatened by the use of beaches as recreational and tourism destination sites, and as places for docking of fishing boats and jet skis. Coral reefs, among the most diverse ecosystem, provide the base for marine fishery, sources of many varieties of subsistence foods and recreational opportunities as well as natural protection of islands and shorelines from wave action, typhoons and erosion. The fisheries and tourism industries, which benefit from coral reefs, are also creating pressures on the coral reefs, and affect sustainability.

Increasing threats to the coastal and marine ecosystems also stem from the drive to earn more foreign exchange and increase national income. For the fisheries sector, we can see improper practices such as the construction of aquaculture farms that was done through wide-scale conversion of mangroves. This conversion has been found to be a major cause of the unsustainability of aquaculture development, and decline of this industry, and at the same time has led to the loss of the other functional benefits of mangroves. Blast fishing and cyanide fishing are happening in order to catch more fish to meet increasing local and world demand. The water quality of many water bodies have continuously deteriorated due to increasing discharges from domestic and industrial sources, and urban and agricultural runoff beyond the carrying capacity of water bodies. There are also pollution problems contributed by sea-based sources (ports, ships, offshore oil extraction, etc.). Because of these conflicts, it is important to value each use at the sustainable level and take into consideration the optimal combination of uses. Coastal ecosystems that are most important are also the ones being subjected to adverse impacts.

The following are examples of projects/studies that aimed to estimate the contribution of the coastal and marine resources to the economy as well as their environmental services. The gross value of the marine and coastal resources in the Straits of Malacca was estimated to be around \$7.38 billion in 1997. The total net economic value was around \$5.55 billion, of which \$4.13 billion were accounted for by nonmarket values. Because of these benefits, which accrue to the global community (and not just to the countries where the resources are found), sustainable management of coastal resources is being advocated. One of the interventions put forward was the establishment of a marine electronic highway, which would primarily serve as navigational aid to ships plying the Malacca Straits, and consequently prevent shipping accidents that may result in the destruction of the coastal and marine resources.

A similar effort in estimating the total economic value of the mangroves, coral reefs and seagrass beds was done under the UNEP/GEF Project on Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand.

In the Manila Bay area, the economic value of the selected major uses (fisheries, aquaculture, tourism, ports and shipping) and the mangrove ecosystem amounted to PhP 8.3 billion in 2004. However, this amount does not include yet the non-use values of mangroves, as well as the use values of other coastal habitats (coral reefs, seagrass beds, mudflats, etc.) due to data constraints. The damages to human health and ecosystems amounted to PhP 3.98 billion, a major indication of the ecological, economic and social consequences of human activities in the bay and its watershed areas.

Efforts in institutionalizing the system of environmental and economic accounts and the Green GDP have not progressed due to lack of data and accepted common methodology. There are also arguments against the formal adoption of green accounting since some key economic sectors that are causing the environmental damages and depreciation of natural resources (indicating the over-estimation of their contribution to the nation's income), are also 'strategic' sectors in the national economic development plans. It is common to see political policies that call to to increase the GDP while disregarding the environmental and social impacts.