INTRODUCTION

Man's economic activities, more often than not, put undue stress to the environment, either as a sink for unwanted by-products and wastes or as a source of raw materials needed to support the increasing demands of the population.

Throughout the years, the economic significance of these activities is measured through the System of National Accounts or the SNA. Specifically, the SNA provides a measure of the economic performance of a given country – the amount (in monetary terms) of goods and services produced by a country, expressed either as Gross National Product (GNP) or as Gross Domestic Product (GDP). However, such measure of economic performance is quite limiting when viewed from an environmental and sustainable development perspective. In this respect, the SNA fails to measure or clearly segregate the economic cost of resource depletion and the cost of environmental degradation due to anthropogenic activities.

To address such limitations in the SNA, a satellite environmental account, termed the United Nations System of integrated Environmental and Economic Accounting (UN SEEA), was developed. This satellite accounting system would account for the cost of resource depletion and the cost of environmental degradation due to economic activities not otherwise accounted for in the SNA. Being a satellite account, the environmental accounts would not in any way disrupt the various existing accounts of the SNA.

This publication is a compilation of environmental accounts which show the degradation of the environment due to selected economic activities. The accounts provide estimates of pollutants to land, air and water generated by selected economic activities: Agriculture, Fishery and Forestry, Manufacturing Industry, Mining Industry, Electricity Generation and Transportation Services. Except for electricity generation, which is only measured in physical terms, all of the economic activities covered were measured in both physical and monetary terms.

The estimates cover a six-year period, from 1988 to 1994, except for electricity generation, which covers 1988 to 1995, and land transportation services, which covers the period 1988 to 1996. Due to data limitations, coverage of the agriculture, fishery and forestry was further limited to upland palay farming, intensive shrimp aquaculture, hog industry, and logging in dipterocarp and pine forests. For manufacturing, the following industries were prioritized: tuna canning industry, textile industry, leather tanning industry, paint industry, sugar milling industry, cement industry and petroleum industry. The mining industry covered small-scale gold mining activity while electricity generation focused on bunker-fuel based, diesel based and coal-fired power plants. Under the transportation industry, only land transportation services were considered.

A review of the production processes and the corresponding pollutants and waste generated was done for all industries. In the estimation of pollutants generated in physical terms, the pollutants or wastes emitted were limited to those that are quantifiable. This implies that not all known pollutants for the sub-sectors presented were estimated.

In valuing the environmental degradation caused by economic activities, this compilation adopted three broad types of maintenance cost valuation. The first type are those that are preventive in nature, e.g., upland farming, wherein the cost of implementing vegetative and engineering measures to prevent soil erosion and water pollution was used. The same is true for dipterocarp and pine tree logging wherein an average reforestation cost per hectare was used. The second type of maintenance valuation are those that treat wastewater generated by industries such as the hog industry, leather tanning and intensive shrimp aquaculture. Lastly, those that use the annualized capital cost (AnCC) and annual maintenance and operating cost (AOMC) of pollution control devices, such as those used by the manufacturing sector e.g., anaerobic facultative ponds/lagoons, sludge collector, sludge drying bed, electrostatic precipitator, etc.

The value of environmental degradation caused by the industries was assumed to be an additional cost to the economic activity and was deducted from the corresponding industry's Net Value Added (NVA) to arrive at the environmentally adjusted net value added (EVA). With these adjustments applied to the NVA for each economic sector, the value added is said to be more "environmentally realistic" and thus, more attuned towards the environmental and sustainable development aspirations of the government. Moreover, the heightened awareness on the current state of the environment, both locally and throughout the rest of the world, underscores the need for more useful tools and indicators that would facilitate the creation of environmentally sound policies and programs. It is in this light that this compilation is published with the hope of providing for the present and future needs of policy makers.