EXECUTIVE SUMMARY

The publication, *Environmental Degradation due to Selected Economic Activities*, 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.

In terms of pollution to air, several pollutants were measured for several economic activities. These include PM, SOx, CO, HC, NOx, Aldehydes, VOC, Pb and CO_2. For PM, the highest level of emissions for 1994 was recorded for Electricity Generation at 6,300,000 MT. For the manufacturing sector, the cement industry recorded the highest level of PM emission for the same year at 1,020,324 MT followed by sugar milling at 42,570 MT. The lowest level of PM emission was recorded for tuna canning at 8 MT (1994). Consequently, in monetary terms, the highest amount of degradation was recorded for cement manufacturing at P 3.3 billion in 1994. The least amount of environmental degradation was recorded for tuna canning at P 43,000 for the same period. No monetary estimates were compiled for the electricity generation sector.

In terms of pollution to water, several pollutants were measured for several economic activities. These include BOD, SS, PO_4, NH_3, NO_2, NO_3, TS, TSS and tailings. For BOD, the highest level of effluents was recorded for intensive shrimp aquaculture at 1,393,200 MT followed by hog raising at 470,283 MT in 1994. The lowest level of effluents was recorded for leather tanning at 773 MT for the same period. In monetary terms, the cost of environmental degradation was highest for hog raising at P 2 billion followed by upland palay farming at P 1.5 billion in 1994. The least amount of environmental degradation was recorded for leather tanning at P 6.6 million.

For degradation to land, soil erosion parameters were used to account for the degradation brought about by the Logging industry and Upland Palay Farming. For the Logging industry, soil loss amounted to 362,519 MT in 1988. Soil loss dropped to 137,948 MT in 1991 and was assumed to be zero in 1992 to 1994 due to the implementation of the logging ban. Likewise, the cost of environmental degradation exhibited a decreasing trend from P 1.3 billion in 1988 to P 851 million in 1991. For degradation to land caused by upland palay farming, soil loss was measured in terms of soil nutrient loss. Soil nutrients measured include Nitrogen (N), Phosphorus (P) and Potassium (K). In 1988, nitrogen loss was pegged at 36,000 MT or 82% of the total nutrient loss due to upland palay farming. This proportion remained constant throughout the accounting period. In monetary terms, soil nutrient loss was valued at P 128 million in 1988, increasing throughout the accounting period, and was pegged at P 1.4 billion by 1994.