

TECHNICAL NOTES
Compendium of Philippine Environment Statistics 2012 – 2021
Component 6: Environmental Protection, Management, and
Engagement

I. Conceptual Framework

Compendium of Philippine Environment Statistics (CPES)

The compendium covers a core set of environment statistics which is grouped into six components namely: 1) environmental conditions and quality; 2) environmental resources and their use; 3) residuals; 4) extreme events and disasters; 5) human settlements and environmental health; and 6) environment protection, management, and engagement.

As described in the Framework for the Development of Environment Statistics (FDES), the Basic Set of Environment Statistics has been set up following a progression of three tiers based on the level of relevance, availability, and methodological development of the statistics. Tier 1 is the core set of environment statistics that serve as an agreed and limited set of environment statistics that are of high priority and relevance to most countries. Tier 2 includes environment statistics which are of priority and relevance to most countries but require greater investment of time, resources, or methodological development. It is recommended that countries consider producing them in the medium term. Tier 3 includes environment statistics which are either of lower priority or require significant methodological development. It is recommended that countries consider producing them in the long term.

Component 6: Environmental Protection, Management, and Engagement

Environmental protection, management, and engagement is a compilation of information on a country's activities involving the protection and management of its environment. This component consists of information on expenditures, regulations, and other activities such as international agreements focusing on the protection of the environment and management of resources.

Four sub-components of Component 6

Subcomponent 6.1: Environmental Protection and Resource Management Expenditure

This subcomponent monitors the level of environmental protection and resource management expenditures. Based on FDES 2013, environmental protection activities are activities whose primary purpose is the prevention, reduction, and elimination of pollution and other forms of degradation of the environment (e.g., protection of ambient air and climate, wastewater management, waste management, etc.). Meanwhile, resource management activities are activities whose primary purpose is preserving and maintaining the stock of natural resources and hence safeguarding against depletion (e.g., reducing the withdrawals of natural resources, restoring natural resource stocks, etc.)

There are two topics under this subcomponent: 1) government environmental protection and resource management expenditure and 2) corporate, non-profit institutions, and household environmental protection and resource management expenditure. Both topics' primary aim is to protect the environment and manage its resources.

Subcomponent 6.2: Environmental Governance and Regulation

This subcomponent provides a holistic view of national responses, requires institutional strength as well as regulatory capabilities. Policy makers use this as their basis to determine the current and desired levels of engagement and commitment from both the government and private sector.

There are three topics in this subcomponent. The first topic is institutional strength which covers engagement of the government and citizen in environmental and sustainable development public policy reflected in the extent to which institutions that manage and regulate the environment exist and function properly both at the national and subnational levels. Second is the environmental regulation and instruments, which are the policy responses to regulate and establish acceptable limits for protecting the environment and human health. Lastly, the participation in Multilateral Environmental Agreements (MEAs) and environmental conventions are the information on a country's participation in MEAs and other global environmental conventions.

Subcomponent 6.3: Extreme Event Preparedness and Disaster

This subcomponent captures the existence and strength of the extreme event preparedness and disaster management agency's facilities and infrastructure to minimize loss of life and economic losses. This refers to the expenditure of public or private assistance before, during, or after a disaster.

There are two topics under this subcomponent. These are 1) preparedness for natural extreme events and disasters; and 2) preparedness for technological disasters. Measures on preparedness for natural extreme events and disasters are different from technological disasters. This is because natural extreme events and disasters usually occur on a larger scale and, typically, the government is primarily involved in preparedness and clean-up, while technological disasters usually arise at an industrial location or on a mode of transportation where the corporate sector has a legal obligation in contributing to preparedness and clean-up.

Subcomponent 6.4: Environmental Information and Awareness

This subcomponent covers statistics related to the activities and processes that contribute to increase social awareness of environmental issues. Policy makers use this to learn which information and education programs are in place. Moreover, as information and awareness increase in a society, individuals and groups expect more pro-environmental actions and choices.

There are four topics in this subcomponent. The first is the environmental information which describes the state of the environment and its changes. Next, environmental education refers to the process of sharing and constructing environmental information and knowledge and information on how humans interact with the environment. Thus, it raises social awareness. Third, environmental perception and awareness refers to individuals and group's notions of, attitudes towards, and evaluations of the environment. Lastly, environmental engagement transforms perceptions and attitudes into pro-environmental actions.

II. Data Sources

The data on expenditures, regulations, and international agreements focusing on the protection of the environment and management of resources of component 6 were obtained from the following:

Data	Data Sources
Government Environmental Protection Expenditures	Budget of Expenditures and Sources of Financing (BESF), Department of Budget and Management (DBM)
Climate Change Expenditures by Department and Special Purpose Fund	
Climate Change Expenditures by National Climate Change Action Plan (NCCAP) Strategic Priorities	
Name of main environmental authority and year of establishment	Department of Environment and Natural Resources (DENR)
Annual budget of the main environmental authority	Biodiversity Management Bureau (BMB, DENR)
Number of staff in the main environmental authority	Ecosystems Research and Development Bureau (ERDB, DENR)
Name of institution and year of establishment	Environmental Management Bureau (EMB, DENR)
Annual budget of the institution	Forest Management Bureau (FMB, DENR)
Number of staff in the institution	Land Management Bureau (LMB, DENR)
	Mines and Geosciences Bureau (MGB, DENR)
	Laguna Lake Development Authority (LLDA)
	National Mapping and Resource Management Authority (NAMRIA)
	National Water Resources Board (NWRB)

Data	Data Sources
List of regulated pollutants and description	Philippine Clean Air Act of 1999 Department Administrative Orders (DAOs) of the DENR
List and description of licensing system	Regional Offices, DENR BMB
Number of applications for licenses received and approved per year	FMB MGB LLDA NWRB
Budget and number of staff dedicated to enforcement of environmental regulations	DENR BMB MGB LLDA
List and description of Multilateral Environmental Agreements (MEAs) and other global conventions	DENR
Existence of publicly accessible environmental information system	BMB FMB
Annual number of visits/users of specific environmental information programmes or environmental information systems	MGB LLDA NAMRIA NWRB
Description of national environment statistics programmes	BMB FMB LMB NWRB
Number and type of environment statistics products and periodicity of updates	DENR BMB FMB LMB MGB NAMRIA NWRB

Data	Data Sources
Allocation of resources by central and local authorities for environmental education	FMB NAMRIA
Number of students pursuing environment-related higher education	Commission on Higher Education (CHED)

III. Compilation Methodology

Following the structure and statistics listed in FDES 2013, data available within the national statistical system were identified and requested from data source agencies, gathered from statistical publications, or collected from website. The collected data are checked for consistency and formatted into statistical tables.

IV. Definition of Terms

- a. Air Pollutant - Any matter found in the atmosphere other than oxygen, nitrogen, water vapor, carbon dioxide, and the inert gases in their natural or normal concentrations that is detrimental to health or the environment, which includes but not limited, to smoke, dust, soot, cinders, fly ash, solid particles of any kind, gases, fumes, chemical mists, steam, and radioactive substances (*Republic Act No. 8749 “An Act Providing for a Comprehensive Air Pollution Control Policy and for other Purposes”*).
- b. Ambient Air Quality - The general amount of pollution present in a broad area. It also refers to the atmosphere’s average purity as distinguished from discharge measurements taken at the source of pollution (*R.A. No. 8749 “An Act Providing for a Comprehensive Air Pollution Control Policy and for other Purposes”*).
- c. Ambient Air Quality Guideline Value - The concentration of air over specified periods classified as short- and long-term, which is intended to serve as a goal or objective for the protection of health and/or public welfare. The value shall be used for air quality management purposes, such as determining time trends, evaluating stages of deterioration, or enhancing air quality, and in general, used as basis for taking positive action in preventing, controlling, or abating air pollution (*R.A. No. 8749 “An Act Providing for a*

Comprehensive Air Pollution Control Policy and for other Purposes”).

- d. Ambient Air Quality Standard - The concentration of an air pollutant which shall not be exceeded in the breathing zone at any time in order to protect public health and public welfare. It is enforceable and must be complied with by the owner or person-in-charge of an industrial operation, process, or trade (*Implementing Rules and Regulations of R.A. No. 8749 “An Act Providing for a Comprehensive Air Pollution Control Policy and for other Purposes”*).
- e. Criteria Pollutants – Pollutants for which National Ambient Air Quality Standards exist. The criteria pollutants include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, sulfates, hydrogen sulfide, and particulate matter with a diameter of 10 microns or less (*Implementing Rules and Regulation of R.A. No. 8749 “An Act Providing for a Comprehensive Air Pollution Control Policy and for other Purposes”*).
- f. Effluents - Discharges from known source which are passed into a body of water or land, or wastewater flowing out of a manufacturing plant, industrial plant including domestic, commercial, and recreational facilities (*R.A. No. 9275 “An Act Providing for a Comprehensive Water Quality Management and for Other Purposes”*).
- g. Emission - Any air contaminant, pollutant, gas stream, or unwanted sound from a known source which is passed into the atmosphere (*R.A. No. 8749 “An Act Providing for a Comprehensive Air Pollution Control Policy and for other Purposes”*).
- h. Environment - The totality of all the external conditions affecting the life, development, and survival of an organism (*UN Environment Glossary Updated Web Version 2001*).
- i. Environmental Awareness - Involves the gradual understanding of environmental issues and the recognition of the connections among human actions, development, sustainability, and human responsibility in these processes. Environmental awareness involves the realization that humans and ecosystems co-exist in a shared environment, which is ultimately the biosphere. Awareness

fosters pro-environmental attitudes and predispositions for action and changed behavior (*FDES Glossary, 2013*).

- j. Environmental Education - Refers to the process of sharing and constructing environmental information and knowledge, as well as information on how humans interact with the environment. Environmental education is carried out through a variety of programmes, including formal and informal education and training, directed towards different audiences. It may be curriculum- and classroom-based or experiential, and may be provided on-site or in community settings by government agencies or NGOs. Environmental education is integral to education for sustainable development (*FDES Glossary, 2013*).
- k. Environmental Engagement - Involves the transformation of perceptions and attitudes into concrete, pro-environmental actions. Individual and social participation and engagement in environmental processes intended to improve and protect the local and global environment are a concrete manifestation of understanding and motivation of, and commitment to protecting and improving the environment, expressed through behavior (*FDES Glossary, 2013*).
- l. Environmental Information - Includes quantitative and qualitative facts describing the state of the environment and its changes as described in the different components of FDES. Quantitative environmental information is generally produced in the form of data, statistics, and indicators and is generally disseminated through databases, spreadsheets, compendiums, and yearbooks. Qualitative environmental information consists of descriptions (e.g., textual or pictorial) of the environment or its constituent parts that cannot be adequately represented by accurate quantitative descriptors. Geographically referenced environmental information provides facts on the environment and its components using digital maps, satellite imagery and other sources linked to a location or map feature (*FDES Glossary, 2013*).
- m. Environmental Perception - Refers to individuals and group's notions of, attitudes towards, and evaluations of the environment, both as a whole or with respect to specific environmental issues. Individuals and communities make decisions and judgments, and take actions based on subjective perceptions of environmental information and

experiences. Values and attitudes thus “filter” information and transform it into perception in a culturally specific manner (*FDES Glossary, 2013*).

- n. Environmental Protection Activities - Activities whose primary purpose is the prevention, reduction, and elimination of pollution and other forms of degradation of the environment. These activities include the protection of ambient air and climate, wastewater management, waste management, protection and remediation of soil, groundwater and surface water, noise and vibration abatement, protection of biodiversity and landscapes, protection against radiation, research and development for environmental protection, and other environmental protection activities (*FDES Glossary, 2013*).
- o. Environmental Regulation and Instruments - Refer to policy responses to regulate and establish acceptable limits for protecting the environment and human health. It entails both direct regulatory and economic instruments. Direct regulatory instruments include environmental and related laws, standards, limits, and their enforcement capacities. These can be described using statistics on regulated pollutants, licensing systems, applications for licenses, quotas for biological resource extraction, and budget and the number of staff dedicated to enforcement of environmental regulations. Economic instruments may comprise the existence and number of green/environmental taxes, environmental subsidies, eco-labelling and certification, and emission permits (*FDES Glossary, 2013*).
- p. Government Environmental Protection and Resource Management Expenditure - Includes government expenditure whose primary aim is to protect the environment and manage its resources (*FDES Glossary, 2013*).
- q. Multilateral Environmental Agreements - A generic term for treaties, conventions, protocols, and other binding instruments related to the environment. It covers a wider geographic scope extending beyond instruments that are agreed upon between two states. (*United Nations*).

- r. Pollutant - Any substance, whether solid, liquid, gaseous, or radioactive, which directly or indirectly (i) alter the quality of any segment of the receiving water body so as to affect or tend to affect adversely any beneficial use thereof, (ii) is hazardous or potentially hazardous to health, (iii) imparts objectionable odor, temperature change, or physical, chemical, or biological change to any segment of the water body, or (iv) is in excess of the allowable limits or concentrations or quality standards specified, or in contravention of the condition, limitation, or restriction prescribed in Republic Act No. 9275 (*R.A. No. 9275 "An Act Providing for a Comprehensive Water Quality Management and for Other Purposes"*).
- s. Resource Management Activities - Activities whose primary purpose is preserving and maintaining the stock of natural resources hence, safeguarding against depletion. These activities include, but are not limited to, reducing the withdrawals of natural resources (including the recovery, reuse, recycling, and substitution of natural resources), restoring natural resource stocks (increases or recharges of natural resource stocks), the general management of natural resources (including monitoring, control, surveillance, and data collection), and the production of goods and services used to manage or conserve natural resources. They cover the management of mineral and energy resources, timber resources, aquatic resources, other biological resources, water resources, research and development activities for resource management, and other resource management activities (*FDES Glossary, 2013*).
- t. Waste Management - Includes collection, transport, treatment, and disposal of waste, control, monitoring, and regulation of the production, collection, transport, treatment, and disposal of waste, and prevention of waste production through in-process modifications, reuse, and recycling (*UN Environment Glossary Updated Web Version 2001*).
- u. Wastewater - Refers to waste in liquid state that contains pollutants. It also refers to use water that is typically discharged into the sewage system and contains matter and bacteria in solution or suspension (*R.A. No. 9275 "An Act Providing for a Comprehensive Water Quality Management and for Other Purposes"*; *UN Glossary of Environment Statistics*).

- v. Water Body - Refers to both natural and man-made bodies of fresh, brackish, and saline waters, and include but is not limited to, aquifers, groundwater, springs, creeks, streams, rivers, ponds, lagoons, water reservoirs, lakes, bays, estuarine, and coastal and marine waters. These do not refer to those constructed, developed, and used purposely as water treatment facilities and/ or water storage for recycling and reuse that are integral to process industry or manufacturing (*R.A. No. 9275 "An Act Providing for a Comprehensive Water Quality Management and for Other Purposes"*).

- w. Water Quality - The set of characteristics of water, which defines its use in terms of physical, chemical, biological, bacteriological, or radiological characteristics by which the acceptability of water is evaluated (*R.A. No. 9275 "An Act Providing for a Comprehensive Water Quality Management and for Other Purposes"*).

- x. Water Quality Guideline - The level for a water constituent or numerical values of physical, chemical, biological, and bacteriological or radiological parameters, which are used to classify water resources and their use, which does not result in significant health risk and which are not intended for direct enforcement but only for water quality management purposes, such as determining time trends, evaluating stages of deterioration, or enhancing the water quality, and as basis for taking positive action in preventing, controlling, or abating water pollution (*R.A. No. 9275 "An Act Providing for a Comprehensive Water Quality Management and For Other Purposes"*).

V. Dissemination of Results and Revision

The Compendium of Philippine Environment Statistics is published bi-annually with three (3) components released and posted on the PSA website every year. The web release materials include press releases, statistical tables, technical notes, and infographics. Social media cards are also posted in the social media accounts of PSA.

Statistical Tables

Table 6.1.1	Climate Change (CC) Expenditures by Department and Special Purpose Fund
Table 6.1.2	Climate Change (CC) Expenditures by National Climate Change Action Plan (NCCAP) Strategic Priorities
Table 6.2	Government Environmental Protection Expenditures
Table 6.3.1 to 6.3.3	Environmental Institutions and its Resources
Table 6.4.1	Initial List and Values of Hazardous Air Pollutants for National Ambient Air Quality Guideline for Criteria Pollutants
Table 6.4.2	Initial List and Values of Hazardous Air Pollutants for National Ambient Air Quality Standards for Source Specific Air Pollutants from Industrial Sources/ Operations
Table 6.4.3	Maximum Limits of Concentration of Air Pollutants at the Point of Emission with Respect to any Trade, Industry, Process, and Fuel-Burning Equipment or Industrial Plant
Table 6.4.4 to 6.4.6	Maximum Limits of Particulates in Stationary Sources
Table 6.4.7 to 6.4.8	Maximum Limits for Exhaust Gas in Other Stationary Sources of Pollution
Table 6.4.9 to 6.4.12	Emission Limits for Light Commercial Vehicles Type Approval (Directive 93/59/EEC)

Table 6.4.13 to 6.4.15	Emission Standards for Vehicles
Table 6.4.16 to 6.4.19	Emission Limits for Motorcycle
Table 6.4.20 to 6.4.21	Emission Limits for Motorcycle and The Provisional National Ambient Air Quality Guideline Values for PM2.5
Table 6.4.22 to 6.4.28	Standard Parameters and Values for Drinking-Water Quality
Table 6.4.29	Vehicle Emission Limits for Euro 4/ IV, and In-Use Vehicle Emission Standards
Table 6.4.30 to 6.4.34	Water Quality Guidelines
Table 6.4.35	Significant Effluent Quality Parameters Per Sector
Table 6.4.36	Effluent Standards
Table 6.4.37	Effluent Standards for BOD Applicable to Establishments with Influent BOD of $\geq 3000\text{mg/L}$
Table 6.5	Description of Licensing System
Table 6.6.1 to 6.6.4	Number of Applications for Licenses Received and Approved Per Year
Table 6.7.1 to 6.7.2	Budget and Number of Staff Dedicated to Enforcement of Environmental Regulations
Table 6.8	List and Description of Multilateral Environmental Agreements and Other Global Environmental Conventions
Table 6.9	Publicly Accessible Environmental Information System
Table 6.10	National Environment Statistics Programme

Table 6.11	Environment Statistics Products
Table 6.12	Budget Allocation for Environmental Education
Table 6.13	Number of Students Pursuing Environment-Related Higher Education

VI. Citation

Philippine Statistics Authority. (30 June 2022). *Technical Notes on Compendium of Philippine Environment Statistics 2012 – 2021 Component 6: Environmental Protection, Management, and Engagement*
[Link](#)

VII. Contact Information

Ms. Virginia M. Bathan
 Chief Statistical Specialist
 Environment and Natural Resources Accounts Division
 (632) 8376-2041
enrad.staff@gmail.com
enrad.staff@psa.gov.ph

For data request, you may contact:
 Knowledge Management and Communications Division
 (632) 8462-6600 locals 839, 833, and 834
info@psa.gov.ph