



TECHNICAL NOTES
Compendium of Philippine Environment Statistics 2014-2023
**Component 6: Environmental Protection,
Management, and Engagement**

I. Conceptual Framework

The Compendium of Philippine Environment Statistics is a compilation of environment and related socio-economic statistics collected from various government agencies. It is an adoption of the Framework for the Development of Environment Statistics (FDES) 2013.

FDES 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) environmental protection, management, and engagement.

As described in 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 serves 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.

The Global Set of Climate Change Statistics and Indicators (GSCCSI) is a comprehensive statistical framework, with statistics, indicators, and metadata, designed to support countries in preparing their own sets of climate change statistics and indicators according to their individual concerns, priorities, and resources. The Global Set was developed by the United Nations Statistics Division in collaboration with the UN Framework

Convention on Climate Change. The GSCCSI consists of five thematic areas, namely: drivers, impacts, vulnerability, mitigation, and adaptation.

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.

This component has four subcomponents: environmental protection and resource management, environmental governance and regulation, extreme event preparedness and disaster management, and environmental information and awareness. These are helpful in compiling the activity/purpose accounts as described in the System of Environmental-Economic Accounting. The statistics under this component are connected to the adaptation and mitigation thematic area of GSCCSI.

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.

6.1.1 Government environmental protection and resource management expenditure – includes government expenditure which is usually found by examining official government finance statistics in government budgets and/ or administrative reports on actual government expenditure. The main institutional partners are the

official institutions in charge of reporting government expenditure (e.g., internal revenue services) and the national and subnational level institutions (e.g., municipalities).

6.1.2 Corporate, non-profit institutions, and household environmental protection and resource management expenditure – includes statistics on corporate, non-profit institution, and household environmental expenditure whose 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 and requires institutional strength as well as regulatory capabilities. Policymakers 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.

6.2.1 Institutional strength – 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.

6.2.2 Environmental regulation and instruments – contains policy responses to regulate and establish acceptable limits for protecting the environment and human health.

6.2.3 Participation in Multilateral Environmental Agreements (MEAs) and environmental conventions – includes 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.

6.3.1 Preparedness for natural extreme events and disasters – relevant information may include the existence and description of national disaster plans; the type and number of shelters in place; the type and number of internationally certified emergency and recovery management specialists; the number of volunteers; and the quantity of first aid, emergency supplies, and equipment stockpiles. The existence of early warning systems for all major hazards, and expenditure on disaster prevention, preparedness, clean-up, and rehabilitation, are also important data requirements.

6.3.2 Preparedness for technological disasters – measures of 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. Policymakers 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.

6.4.1 Environmental information – describes the state of the environment and its changes.

6.4.2 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.

6.4.3 Environmental perception and awareness – refers to individuals' and groups' notions of, attitudes towards, and evaluations of the environment.

6.4.4 Environmental engagement – transforms perceptions and attitudes into pro-environmental actions.

II. Data Sources

The data on environmental protection and resource management expenditure, environmental governance and regulation, extreme event preparedness and disaster management, and environmental information and awareness of component 6 were obtained from the following:

Data Item	Data Sources
Environmental Protection and Resource Management Expenditure	
<ul style="list-style-type: none"> • Climate Change Expenditures by Department and Special Purpose Fund • Climate Change Expenditures by National Climate Change Action Plan (NCCAP) Strategic Priorities • Government Environmental Protection Expenditures 	Budget of Expenditures and Sources of Financing (BESF), Department of Budget and Management (DBM)
<ul style="list-style-type: none"> • Main environmental institutions and its resources 	Department of Environment and Natural Resources (DENR)
<ul style="list-style-type: none"> • Environmental institutions • Annual budget and number of staff of environmental institutions 	Biodiversity Management Bureau (BMB, DENR) Environmental Management Bureau (EMB, DENR) Ecosystems Research and Development Bureau (ERDB, DENR) Forest Management Bureau (FMB, DENR) Land Management Bureau (LMB, DENR) Mines and Geosciences Bureau (MGB, DENR) Laguna Lake Development Authority (LLDA) National Mapping and Resource Management Authority (NAMRIA)

Data Item	Data Sources
	National Water Resources Board (NWRB)
<ul style="list-style-type: none"> • List of regulated pollutants and description 	Philippine Clean Air Act of 1999 Department Administrative Orders (DAOs) of the DENR
<ul style="list-style-type: none"> • Description of licensing system 	BMB, DENR FMB, DENR MGB, DENR LLDA
<ul style="list-style-type: none"> • Number of applications for licenses received and approved per year 	DENR Regional Offices BMB, DENR FMB, DENR MGB, DENR LLDA NWRB
<ul style="list-style-type: none"> • Budget and number of staff dedicated to enforcement of environmental regulations 	DENR BMB, DENR MGB, DENR LLDA
<ul style="list-style-type: none"> • List and description of Multilateral Environmental Agreements (MEAs) and other global conventions 	DENR
<ul style="list-style-type: none"> • Existence of national disaster plans and programmes • Number of pending and approved volunteer organizations and accredited community disaster volunteer members • Existence of early warning systems for all hazards 	OCD
<ul style="list-style-type: none"> • Publicly accessible environmental information system • Annual number of visits/users of specific environmental information 	BMB, DENR FMB, DENR MGB, DENR LLDA NAMRIA

Data Item	Data Sources
programmes or environmental information systems	NWRB
• National environment statistics programme	DENR BMB, DENR FMB, DENR LMB, DENR NWRB
• Environment statistics products	DENR BMB, DENR FMB, DENR LMB, DENR MGB, DENR NAMRIA NWRB Environment and Natural Resources Accounts Division (ENRAD), Philippine Statistics Authority (PSA)
• Budget allocation 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 the FDES 2013, data available within the national statistical system were identified and requested from data source agencies, gathered from statistical publications, or collected from official websites. The collected data are checked for consistency and formatted into statistical tables.

IV. Definition of Terms

1. 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.¹

2. 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.¹
3. 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.¹
4. 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.¹
5. 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.¹
6. 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.²
7. Emission – any air contaminant, pollutant, gas stream, or unwanted sound from a known source which is passed into the atmosphere.¹
8. Environment – the totality of all the external conditions affecting the life, development, and survival of an organism.³
9. 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.⁴

10. 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.⁴
11. 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.⁴
12. 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.⁴

13. 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.⁴
14. 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.⁴
15. 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.⁴
16. Government Environmental Protection and Resource Management Expenditure – includes government expenditure whose primary aim is to protect the environment and manage its resources.⁴
17. 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.⁵

18. 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. 9275.²
19. 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.⁴
20. 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.³
21. Wastewater – refers to waste in a 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.^{2,6}
22. 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.²

23. 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.²

24. 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.²

V. Dissemination of Results and Revision

The Compendium of Philippine Environment Statistics is released annually. The web release and information, education, and communication materials include press release, statistical tables, technical notes, infographics, and social media cards. Web release materials are posted on the PSA website, PX files in PSA OpenStat, Publication in the PSA Digital Library, and social media cards in PSA' social media pages.

¹ Republic Act No. 8749 “An Act Providing for a Comprehensive Air Pollution Control Policy and for other Purposes”

² Republic Act No. 9275 “An Act Providing for a Comprehensive Water Quality Management and for Other Purposes”

³ United Nations Environment Glossary Updated Web Version 2001

⁴ United Nations. Framework for the Development of Environment Statistics 2013. Glossary.

⁵ United Nations Environment Programme. Glossary of Terms or Negotiators of Multilateral Environmental Agreements. <https://whc.unesco.org/en/glossary/310>

⁶ United Nations. 1997. Glossary of Environment Statistics. Studies in Methods, Series F, No. 6

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VI. Citation

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