Environment Statistics: Diagnostic Tool for Strategic Planning
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ESCAP

WHAT IS THE PURPOSE OF THIS DIAGNOSTIC TOOL?

This Diagnostic Tool focuses on strategic planning for implementing environment statistics. It is intended to guide early-stage, structured conversations among stakeholders. The tool assists with identifying policy priorities, foundational information, stakeholders and institutional mechanisms necessary to develop a national work plan for improving environment statistics. When using this tool, it is important to include potential *producers*, *users* and *supporters* in the conversation.

The Diagnostic Tool is organised along seven steps of strategic planning:

1. STATEMENT OF STRATEGY AND POLICY PRIORITIES: Document **national visions and priorities** related to the environment, biodiversity, sustainable development and green economy, including managing natural assets and flows of services from them.
2. INSTITUTIONS: Identify the **stakeholders** including producers and users of related information (government agencies, academia, NGOs, international agencies), but also other groups such as civil society that can benefit from improved information. As well, identify relevant **institutional mechanisms** currently in place.
3. KNOWLEDGE: Identify **key national data sources** that can be used as a basis for further development.
4. PROGRESS: Understand **what progress has already been made in developing environment statistics**.
5. CONTEXT: Identify **related statistical development activities** that could benefit (and benefit from) environment statistics initiatives.
6. PRIORITIES: Determine the **priorities for action** to develop selected environment statistics.
7. CONSTRAINTS AND OPPORTUNITIES: Assess (a) **constraints to implementing** specific environment statistics and (b) opportunities for **immediate actions** to address these constraints.

The Diagnostic Tool has been designed for use in a workshop setting. However, iteration will be required to achieve consensus. For example, a small core group may draft initial responses and then present them to a larger group for discussion and revision.

Since achieving consensus is an iterative process, the steps in this diagnostic can be taken in any order. Also, if any sections require more deliberation to answer, it is acceptable to leave these blank.

Experience has shown that environment statistics implementation works best when:

- Producers and users of information collaborate to define their needs and opportunities,
- Organisations actively link the production and use of information to reporting and monitoring policy priorities,
- Organizations are prepared to change the way they do things to provide better information and to use it effectively, and
- Statistical activities across the National Statistical System are well coordinated.

The international community has developed extensive guidance documents and training materials to support technical capacity building on the selected priority topics. See **Appendix 1** for links to related materials.

WHAT ARE ENVIRONMENT STATISTICS?

Environment statistics provide information about environmental conditions, the quality and availability of natural resources, and the impacts of human activities and natural events. They also provide information about the social actions and economic measures that societies take to avoid, mitigate or adapt to these impacts. Also included are actions taken to restore and maintain the capacity of the environment to provide services that are essential for life and human well-being.

Environment statistics cover a wide range of information and are thus interdisciplinary. They originate from many institutions that use numerous methods to compile them. Environment statistics, therefore, requires appropriate frameworks and standards to guide their development, coordination, measurement, organization and integration into the National Statistical System.

There are two main international frameworks for guiding the development of environmental statistics:

- The Framework for the Development of Environmental Statistics (FDES), and
- The System of Environmental Economic Accounting (SEEA)

The FDES provides guidance on a core set of environmental indicators that has proven beneficial to inform policy. It is designed to assist all countries in articulating environment statistics programmes by: (i) delineating the scope of environment statistics and identifying its constituents; (ii) contributing to the assessment of data requirements, sources, availability and gaps; (iii) guiding the development of multipurpose data collection processes and databases; and (iv) assisting in coordination and organization across institutions.

The SEEA, an international statistical standard, provides a coherent and integrated framework for collecting, organizing, analysing, presenting environmental data and relating it to economic and social data. It adheres to the principles of the **System of National Accounts (SNA)**, and expands its scope by:

- taking an accounting approach to record the stocks and flows of natural inputs into the economy,
- providing standard terminology, definitions, methods and classifications,
- adding measures and classifications of:
  - physical stocks of natural capital (including ecosystems) and their monetary values,
  - physical resource flows (land, metals and minerals, timber, energy, water, fish) into the economy
  - residual flows from the economy (air emissions, water effluents, solid waste) into the environment
  - environmental activities such as protection expenditures, taxes and subsidies,
  - ecosystems and their services, including biodiversity and carbon sequestration, and
- linking economic activities (producers and consumers) to societal benefits.

Together, FDES and SEEA can address many of the requirements for monitoring and reporting on progress towards national and international environmental, sustainable development, biodiversity and green economy priorities. These requirements include addressing the demand for information in support of integrated policies of the 2030 Agenda for Sustainable Development.

Most FEDS and SEEA indicators and accounts have been implemented in many national contexts. Since national institutional arrangements, environmental contexts and priorities and capacities differ, the guidance on implementation is flexible and modular. This allows countries to select priority information and adapt the guidance to their individual requirements.

1. STATEMENT OF STRATEGY AND POLICY PRIORITIES

NATIONAL VISION

Linking environment statistics to a national vision is an effective way to ensure their relevance. If a national vision is to be attained, it should be evident that appropriate statistics are required to monitor and report on progress towards that vision. Such vision statements could be derived from national development plans, sustainable development strategies or statements to international bodies. What is important is that they represent a comprehensive view and a national consensus.

> ➢ *1a. What is the national vision for sustainable development, biodiversity, green economy and ecosystems for your country? (Please note the source.)*
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POLICY PRIORITIES AND POLICY TOOLS AVAILABLE OR PLANNED

"*We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.*"
Transforming our world: the 2030 Agenda for Sustainable Development

There are many different pathways for progress towards the Sustainable Development Goals depending on national priorities and contexts. Elements common to many include low-carbon development, climate resilience, disaster risk reduction, resource efficiency, conserving natural heritage, social equity and protection, gender equality, poverty reduction, and decent green job creation.

Environment statistics can support a variety of related policy priorities including:

- Making informed decisions about trade-offs between conservation and development,
- Improving access to and equitable distribution of natural resources and ecosystem services,
- Managing supply and demand for natural resources and ecosystem services,
- Improving the state of the environment and managing the impacts of development,
- Mitigating risks of extreme events and adapting to them, and
- Coordinating and streamlining efforts in research, data collection, reporting and decision making.

> *1b. What are your country's main environmental* **concerns** *(e.g., water scarcity, deforestation, air quality…)? (Please note the source.)*

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> *1c. Within the scope of your national vision, what are your country's sustainable development* **policy priorities***? (Please note the source.)*

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> *1d. What related* **policy tools** *(e.g. national development plan, strategies, laws, regulations, taxes/subsidies, and education initiatives) are in place or are planned? (Please note the source.)*

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2. INSTITUTIONS

STAKEHOLDERS & INSTITUTIONAL MECHANISMS

Stakeholders include producers of data as well as potential users and other interests that could benefit from improved information. Groups that may be considered include:

- Supporters and users: Central government agencies (Finance, Treasury, Planning, International relations, etc.),
- Users: Social, industry and economic government agencies, Overseas Development Assistance projects,
- Data providers: Environment and natural resource government agencies, government research institutes, and
- Other interested institutions: Universities, international NGOs, civil society organizations and private industry associations.

> ➢ *2a. Who are the main stakeholders in environment, sustainable development and green economy policy?*
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Integrated decisions about environment, sustainable development and green economy require collaboration among many stakeholders. Institutional mechanisms to make these decisions may already be in place.

> ➢ *2b. Please describe any important interdepartmental institutional mechanisms, such as senior committees, coordination bodies already in place to make sustainability and green economy decisions.*
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> ➢ *2c. Please describe the role of the National Statistical Office in monitoring and reporting on progress towards achieving national sustainable development priorities.*
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DATA SOURCES

What are the main data sources and what is their availability and quality? Depending on the policy priorities, these could include (among others):

- **Making informed decisions about trade-offs between conservation and development**:
  - National Accounts (natural resource inputs, value added, resource productivity)
  - Business and government finance (environmental protection expenditures; environmental taxes and subsidies)
  - International trade statistics (imports and exports of natural resources)
- **Improving access to and equitable distribution of natural resources and ecosystem services**:
  - Spatially-detailed socio-economic statistics (population, gender, dwellings, income, industry of work, access to clean water, sanitation and energy)
  - Agriculture, forestry and fisheries statistics (locations, extraction quantities and value)
  - Water stock, supply and use statistics (sources, quality, abstraction, distribution and use)
  - Tourism statistics (visitors, expenditures)
- **Managing supply and demand for natural resources and ecosystem services**:
  - Energy statistics (stock, supply and use)
  - Land taxes, ownership and management regimes (e.g., private, conservation, exploitation)
  - Environmental goods and services sector
- **Improving the state of the environment and managing the impacts of development**:
  - Emissions inventories (air, water, greenhouse gases, solid wastes, hazardous wastes)
  - Air, water and soil quality statistics
  - Basic spatial boundaries (national and state/provincial boundaries, topographic, hydrological, digital elevation models, bio-regions, etc.)
  - Land cover, land use and land use planning data (remote sensing, administrative data on ownership and designated use);
  - Protected area locations and protected species lists
- **Mitigating risks of extreme events and adapting to them**:
  - Incidence and location of extreme events and disasters
  - Population at risk of extreme events
  - Mitigation and adaptation activities (expenditures, programs)
- **Coordinating and streamlining efforts in research, data collection, reporting and decision making**:
  - Activities and expenditures on research, data collection, reporting and decision making

> ➤ *3a. Please describe any **key documents and research initiatives** that are related to the policy priorities. (Please note the **source**.)*
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4. PROGRESS

The SEEA Central Framework (SEEA-CF) accounts include:
- Asset accounts:
  - Mineral and energy resources (physical and monetary[1])
  - Land cover and land use (physical and monetary)
  - Soil resources (physical)
  - Timber resources (physical and monetary)
  - Aquatic resources (fish and crustaceans) (physical and monetary)
  - Other biological resources (e.g., wild game) (physical and monetary)
  - Water resources (physical)
- Physical flow accounts:
  - Economy-wide material flow accounts
  - Supply and use for water
  - Supply and use for energy
  - Supply and use for timber
  - Emissions to water
  - Emissions to air
  - Wastes
- Monetary flow accounts (environmental activities)
  - Environmental protection expenditure accounts (EPEA)
  - Resource use and management accounts (RUMEA)
  - Environmental goods and services sector (EGSS)
  - Environmentally related payments to and by government (taxes and subsidies)

SEEA Experimental Ecosystem Accounts (SEEA-EEA) include spatially-detailed accounts for:
  - Ecosystem extent and condition
  - Water; Carbon; Biodiversity
  - Ecosystem services supply and use

The FDES includes several sets of unique indicators that do not feed directly into SEEA accounts:
- Extreme events and disasters (including technological disasters)
- Human settlements and environmental health
- Environmental protection, management and engagement (governance and regulation, extreme event preparedness and disaster management, environmental information and awareness)

> ➤ *4a. Which of the priority accounts and indicators above been **piloted or produced** as official statistics?*
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[1] Physical accounts record the volumes of the stocks and flows. Monetary accounts record their values.

5. CONTEXT

OTHER STATISTICAL DEVELOPMENT ACTIVITIES

It is useful to put environment statistics into context with other statistical development activities that are underway or planned. These activities are often complementary with improving environment statistics and can produce synergies. These could include, among others (see **Annex 3** for links to sources):

- National statistical legislation (NSO mandate and role in the National Statistical System),
- National quality assurance frameworks,
- National data frameworks or strategies (e.g., harmonization of statistical or spatial data),
- Paris21 National Statistical Development Strategy (NSDS),
- SNA 2008 Implementation Strategy,
- Reporting on Sustainable Development Goals (SDGs),
- Regional (supra-national) environmental reporting initiatives or agreements,
- Country reviews by international organizations (e.g., IMF Data Quality Assessments; OECD country reviews)

> ➢ *5a. Please list current and planned national activities focussed on statistical development:*
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OTHER INTERNATIONAL ACTIVITIES RELATED TO ENVIRONMENT STATISTICS

It is also useful to understand other international activities in your country that are focussed on environment, sustainable development, biodiversity or green economy. These include bilateral (e.g., development assistance from individual countries), multilateral and international activities. They may be focussed on specific sub-national regions (such as one province) or inter-regional concerns (e.g., a shared river delta or common issues such as sea-level rise). Several international platforms use the FDES and SEEA as underlying measurement frameworks: UNEP TEEB (The Economics of Ecosystems and Biodiversity), World Bank WAVES (Wealth Accounting and Valuation of Ecosystem Services), REDD+ (Reducing Emissions from Deforestation and Forest Degradation), SCP (Sustainable Consumption and Production), OECD Green Growth, UNEP Green Economy, and UNDP Biofin.

> ➢ *5b. Please list current and planned international activities focussed on environment, sustainable development, biodiversity or green economy:*
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6. PRIORITIES

PRIORITY ACCOUNTS

> *6a.* *Given the policy priorities, availability of knowledge and stakeholder interest, which* *accounts and indicators are of the highest priority* *to begin implementation?*

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7. CONSTRAINTS & OPPORTUNITIES

CONSTRAINTS

> *7a.* *Of the priority accounts, what are the* *constraints* *to implementing them as ongoing statistical activities?*
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> *Some accounts may have few constraints and are ready to test. Others may require a combination of capacity building (training, guidance documents), data development (improving source data) and institutional coordination (establishing or adapting mechanisms, securing funding).*

READY TO TEST

Accounts/Indicators: _____

Constraints: _____

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NEED CAPACITY BUILDING

Accounts/Indicators: _____

Constraints: _____

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NEED DATA DEVELOPMENT

Accounts/Indicators: _____

Constraints: _____

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NEED INSTITUTIONAL COORDINATION, FINANCING

Accounts/Indicators: _____

Constraints: _____

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OPPORTUNITIES

> ➤ **7b.** Given the above context and priorities, are there **opportunities**, such as budget cycles for national planning, technical support, new data sources, etc.*?*

Accounts/Indicators: _____

Opportunities: _____

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Accounts/Indicators: _____

Opportunities: _____

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PRIORITY ACTIONS

> ➤ *7c. What are immediate **actions** that can be taken to overcome the constraints and take advantage of the opportunities to begin implementing priority accounts?*

Accounts/Indicators: _____

Actions: _____

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Accounts/Indicators: _____

Actions: _____

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SEEA website: http://unstats.un.org/unsd/envaccounting/seea.asp

- SEEA Central Framework (SEEA-CF):
  http://unstats.un.org/unsd/envaccounting/seeaRev/SEEA_CF_Final_en.pdf (Also available in Arabic, Chinese (draft), French, Russian and Spanish
  - Briefing Note: http://unstats.un.org/unsd/envaccounting/Brochure.pdf
  - Briefing Note: http://unstats.un.org/unsd/envaccounting/SEEA-Brochure-SC-2013.pdf
- SEEA Experimental Ecosystem Accounting (SEEA-EEA):
  http://unstats.un.org/unsd/envaccounting/seeaRev/eea_final_en.pdf
  - Briefing Note: http://unstats.un.org/unsd/envaccounting/workshops/int_seminar/note.pdf
- SEEA Applications and Extensions: http://unstats.un.org/unsd/envaccounting/ae_white_cover.pdf
- SEEA Energy: http://unstats.un.org/unsd/envaccounting/energy.asp
  - International Recommendations for Energy Statistics (IRES):
    http://unstats.un.org/unsd/energy/ires/IRES_Whitecover.pdf
- SEEA Water: http://unstats.un.org/unsd/envaccounting/water.asp
  - International Recommendations for Water Statistics (IRWS):
    http://unstats.un.org/unsd/envaccounting/irws/
  - Compilation Guidelines: http://unstats.un.org/unsd/envaccounting/WCG14.pdf
- SEEA-Agriculture, Fisheries and Forestry (Draft, SEEA-AFF):
  http://unstats.un.org/unsd/envaccounting/aff/chapterList.asp
- SEEA-EEA country examples:
  - Canada:
    - Human Activity and the Environment 2013: Measuring Ecosystem Goods and Services:
      English: http://www.statcan.gc.ca/pub/16-201-x/16-201-x2013000-eng.htm; French:
      http://www.statcan.gc.ca/pub/16-201-x/16-201-x2013000-fra.htm.
    - Human Activity and the Environment 2014: Agriculture in Canada: English:
      http://www.statcan.gc.ca/pub/16-201-x/16-201-x2014000-eng.htm; French:
      http://www.statcan.gc.ca/pub/16-201-x/16-201-x2014000-fra.htm
  - Australia:
    - Land and Ecosystem Accounting:
      http://www.abs.gov.au/ausstats/abs@.nsf/Products/4655.0.55.002~2013~Main+Features~
      Chapter+6+Land+and+ecosystem+accounting?OpenDocument
    - Completing the Picture - Environmental Accounting in Practice, May 2012
      http://www.abs.gov.au/ausstats/abs@.nsf/mf/4628.0.55.001
  - Victoria, Australia: Experimental Ecosystem Accounts:
    https://ensym.dse.vic.gov.au/cms/index.php?option=com_content&view=article&id=60&Itemid=71

CICES V4.2 (The Common International Classification of Ecosystem Services: http://cices.eu.

CBD (Convention on Biological Diversity) Aichi Targets: http://www.cbd.int/sp/targets/

FDES (Framework for the Development of Environmental Statistics):
http://unstats.un.org/unsd/environment/fdes.htm
- ESStat (Environment Statistics Self-assessment Tool)
  http://unstats.un.org/unsd/environment/FDES/essat.htm

International Monetary Fund Data Quality Assessment Framework (IMF DQAF):
http://dsbb.imf.org/images/pdfs/dqrs_factsheet.pdf

SNA 2008 Implementation Strategy: http://unstats.un.org/unsd/nationalaccount/imp.asp.

SDGs (Sustainable Development Goals) Open Working Group: http://sustainabledevelopment.un.org/owg.html

Paris21 National Statistical Development Strategy (NSDS): http://www.paris21.org/NSDS.

OECD Environmental Country Reviews: http://www.oecd.org/env/country-reviews/oecdenvironmentalperformancereviews.htm.