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SEEA Diagnostic Tool

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SEEA Diagnostic Tool

What is the purpose of this tool?

This Diagnostic Tool supports discussions for the implementation of SEEA that are aimed at:

1. Documenting national priorities for natural resource, development and environmental policies,
2. Identifying the stakeholders including producers and users of statistics but also other groups that can benefit from improved information,
3. Identifying key national data sources that can be used for environmental accounting,
4. Identifying related statistical development activities that could benefit environmental accounting initiatives (and vice versa),
5. Understanding what progress has already been made in environmental accounting,
6. Assess the constraints to understand the feasibility of specific SEEA accounts, and
7. Determining the priorities for action to develop selected SEEA accounts.

It has been designed for use in a one-hour workshop setting with a small group of statistics producers and users. Perhaps not all questions can be answered in the first meeting. Furthermore, it is likely some of the items will need more detail.

What is SEEA?

Using statistical evidence to support national sustainability goals is an important objective of governance. However, providing that evidence in a way that is suitable, transparent and cost-effective is not a simple undertaking. In response to this need, the international community has produced the System of Environmental-Economic Accounting (SEEA¹). This is a coherent and integrated measurement framework for organizing environmental data and applying it to sustainability and green economy decision-making.

Countries have different priorities. Their governments organize themselves and their statistical systems in different ways. Their capacities to produce and use statistical evidence vary. Therefore, implementing this framework requires a flexible and modular approach.

The objectives of development initiatives are often measured in terms of their short-term contribution to GDP. This important but solitary indicator does not take into account whether the initiatives are drawing down national wealth by depleting natural resources, damaging the health of the population or restricting their access to vital resources such as water and energy. Therefore, even if initiatives contribute to GDP, they may not be sustainable. Since SEEA links the economic, environmental and social statistics, it provides a broader accounting framework to understand the longer-term contribution of development initiatives.

¹ See: <https://unstats.un.org/unsd/envaccounting/seea.asp>.

Sustainability is inherently a concept that integrates economy, environment and society. SEEA 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:

- providing standard terminology, definitions and classifications for environment-economy statistics,
- including measures of the physical stocks of natural capital and their values,
- adding physical measures of flows of natural resources and residuals (land, metals and minerals, timber, energy, water, fish, air emissions, water emissions, solid waste), and
- linking these to economic activities (producers and consumers) and societal benefits.

Experience has shown that SEEA implementation works best when:

1. Producers and users of statistics collaborate to define their needs and opportunities,
2. Organizations are prepared to change the way they do things to provide better information and to use it effectively, and
3. Activities across sectors are well coordinated.
4. There is a clear use of the data and accounts.
5. Capacity within the country is developed.

Area 1: Policy priorities

SEEA can inform a variety of related objectives including:

1. **Improving access to services and resources:** these may include objectives such as reducing costs of water, energy and food; improving equitability or sustainability of resource exploitation; reducing resource consumption; promoting eco-tourism.
2. **Managing supply and demand:** these may include objectives such as managing water and energy; improving resource efficiency; improving the sustainability of production and consumption.
3. **Improving the state of the environment and reducing impacts:** these may include objectives such as reducing emissions and wastes; protecting ecosystems and biodiversity; managing protected areas and endangered species.
4. **Mitigating risks and adapting to extreme events:** these may include objectives such as adapting to climate change; reducing greenhouse gas emissions; compensation for environmental damages.

Does your country already have a deliberate approach to determining the most important and systemic issues requiring consideration, particularly around natural resource, development and environment related issues? If so, summarize the approach and the current outcomes here. If not, perhaps you could draft a statement here based on your understanding of your national development strategy.

Area 2: Institutions

Stakeholders

*Who are the main stakeholders in natural resource, development and environmental policy? This includes not only the **producers** of the data but also the potential **users** of the data and other interests that could benefit from improved information. Groups that may be considered include:*

Central government agencies

Human, industry and economic government agencies

- Environment and natural resource government agencies
- Universities (specify institute or centre)
- NGOs and private industry associations

It is also important to describe policy development processes, interdepartmental mechanisms, strategies and plans in place to make natural resource, development and environment related decisions.

Area 3: Information and knowledge

Data sources

What are the main data sources and what is their availability and quality? Depending on the priority, this could include:

- Emissions inventories (air, water, greenhouse gases, solid wastes, hazardous wastes)
- Water statistics (abstraction and use)
- Energy statistics (supply and use)
- Waste statistics (generation and disposition)
- Natural resource statistics
- Land and geospatial statistics
- Other Environmental statistics (for example, land cover; land use; air quality; water quality; access to water, sanitation and energy; participation in multilateral environmental agreements and environmental conventions)
- National accounts (natural resource inputs; expenditures on environmental protection ; environmental taxes)
- International trade statistics (transborder flows of natural resources, environmental goods and services, solid wastes)
- Business statistics (expenditures on environmental protection; environmental goods and services sector)
- Government finance statistics (expenditures on environmental protection; environmental taxes and subsidies)
- Other economic data(e.g., administrative data, specific household or business surveys)
- Other data (e.g. population census, employment data)

Describe any key documents or research initiatives that are related to the priority sources identified. Provide as much detail as possible for example in terms of when data have been released, their frequency, data owner/producer.

Area 4: Progress

Existing accounts

Are any SEEA accounts already being produced? Have any been prototyped in the past? Consider the possibility of work having been completed in academic institutions.

The most common SEEA accounts include:

- Flow accounts
 - Supply and use for water (physical and monetary)
 - Supply and use for energy (physical and monetary)
 - Air emissions (physical)
 - Water emissions (physical)
 - Waste (physical)
 - Environmental protection expenditure accounts (EPEA) (monetary)

- Resource use and management accounts (RUMEA) (monetary)
- Environmental goods and services sector (EGSS) (monetary)
- Environmentally-related payments to and by government (monetary)
- Asset accounts
 - Mineral and energy resources (physical and monetary)
 - Land cover (physical and monetary)
 - Soil resources (physical)
 - Timber resources (physical and monetary)
 - Aquatic resources (fish and crustaceans) (physical and monetary)
 - Water resources (physical)
- Experimental ecosystem accounts
 - Extent and quality of specific ecosystems such as forests, wetlands, grasslands, coastal zones, etc. (physical)
 - Physical flows of ecosystem services (physical)
 - Carbon stocks (physical)
 - Biodiversity (physical)

Area 5: Constraints

Feasibility

Of the priority accounts, what are the constraints to implementation? Some accounts may have few constraints and are ready to test. Others may require a combination of capacity building (training, guidance documents), data development (establishing or improving sources of data) and institutional coordination (establishing or changing mechanisms, establishing funding sources).

Type of account:

Constraints:

Area 6: Opportunities

Priority Actions

What are immediate actions that can be taken to overcome the constraints to begin implementing priority accounts?

Include a description of any national development planning processes that may be an opportunity for promoting SEEA and seeking resources. Other related cross-cutting projects may also be considered – eg. State of Environment reporting.

Identify related international statistical initiatives such as support for the development of the NSS (e.g. the development of National Statistics Development Strategies, SNA implementation, FDES, FAO Agricultural Statistics program, etc).

Identify related international policy initiatives that may provide additional support for the task of implementation of SEEA (e.g. Post 2015 development agenda,

Consider also opportunities for highlighting work / potential at national and international forums and the potential to share resources across countries.

Account:

Action:

Account:

Action:

Area 7: Priorities

Priority accounts

Given the policy priorities, availability of knowledge and stakeholder interest, which SEEA accounts are of the highest priority for implementation?

Area 8: Recommendations

Annex: Master lists for assessment and planning

Table 1: Master list of potential stakeholders

Stakeholder category	Stakeholder
Central government agencies	Central banks
	Central planning
	Finance
	Government operations
	Infrastructure
	National Statistical Office
Human, industry and economic government agencies	Census
	Culture
	Economic Analysis
	Health, disease control, research
	Housing
	Industry
	Justice, Crime prevention
	Labour, Human resources
	Transport
Environment and natural resource government agencies	Agriculture
	Chemicals regulation
	Energy
	Environment
	Fisheries
	Forestry
	Geology, Geomatics
	Geomatics
	Meteorology and hydrology
	Museum of natural history
	Natural Resources
	Parks
	Water (supply)
	Water (treatment and sewage)
	Universities (specify institute or centre)
University 2	
NGOs and private industry associations	Industry associations
	Agriculture associations
	Energy, petroleum
	Forest industry
	Manufacturers, plastics, chemicals
	Parks associations
	Waste management, recycling, packaging
	Water (supply)
	Water (treatment and sewage)
	National environmental NGOs
	NGO 1
	NGO 2
	International economic and environmental NGOs
	INGO 1
	INGO 2

Table 2: Master list of policy issues

SEEA and sustainable development policy quadrant	Issue sub-category	Issue detail	Account¹
1. Improving access to services and resources	Costs of provisioning of services		Water flow, Energy flow
	Equity of natural resource exploitation		MEFA
	Losses in distribution (water, energy, food)		MEFA
	Quantity of resources used		Mineral and energy asset accounts, Land, EEA
	Sustainability of resource exploitation		Mineral and energy asset accounts, Land, EEA
	Tourism		Land, EEA
2. Managing supply and demand	Carbon and energy embedded in products		MEFA
	Coordinating land use (e.g., watershed) and activities		Land, EEA
	Decoupling indicators of emissions and resource use		Air emissions, Water accounts
	Energy supply and demand		Energy, MEFA
	Environmental goods and services sector		EGSS
	Environmentally-adjusted aggregates for depletion		Mineral and energy asset accounts, Land, EEA
	Fish stock		EEA
	Food supply		EEA
	Forest stock and use; Deforestation		Forest/Timber
	Generation of emissions and wastes		MEFA
	Green jobs		EGSS
	Investment in infrastructure		EPEA
	Natural wealth and changes in natural capital		Mineral and energy asset accounts, Land, EEA
	Resource efficiency (e.g., resource productivity)		Mineral and energy asset accounts, Land, EEA
	Resource rent		Mineral and energy asset accounts, Land, EEA
	Resource use of production and consumption		MEFA
	Sustainability of production and consumption		Land, EEA
	Sustainable agriculture		Land, EEA
	Sustainable economic development		MEFA
Water supply and demand		Water stock	

SEEA and sustainable development policy quadrant	Issue sub-category	Issue detail	Account ¹	
3. Improving the state of the environment and reducing impacts	Air quality: emissions and treatment		Air emissions	
	Ecosystems and biodiversity	Coastal ecosystems		Land, EEA
		Ecosystem health and condition		Land, EEA
		Ecosystem services		Land, EEA
		Forests		Land, EEA
		Freshwater (lakes, rivers, streams, groundwater)		Land, EEA
		Other ecosystems (tundra, grasslands, mangrove, desert, etc.)		Land, EEA
		Wetlands		Land, EEA
	Endangered species		Land, EEA	
	Environmental impact of exploitation		All	
	Environmental protection expenditures and resource management		EPEA	
	Land use and land cover		Land, EEA	
	Nature and recreation		Land, EEA	
	Protected areas		Land, EEA	
	Sea level rise		Land, EEA	
	Solid waste and treatment		Waste	
	Stock of natural resources		Mineral and energy asset accounts, Land, EEA	
Water quality: effluents and treatment		Water flow, Energy flow		
4. Mitigating risks and adapting to extreme events	Adaptation to climate change and extreme events		EPEA, EGSS	
	Capacity and capacity building		Diagnostic	
	Compensation for environmental damages		Environmental taxes and subsidies, EEA	
	Contaminated land (e.g., brownfields)		Land, EEA	
	Coordination of sustainability policies		Diagnostic	
	Education and awareness		Diagnostic	
	Effectiveness of policy instruments		All	
	Environmental research		Diagnostic	
	Expenditures on mitigation (e.g., technologies)		EPEA	
	Extreme events: floods, landslides, heat waves, droughts, etc.		EPEA	
	Greenhouse gas emissions		MEFA	
	Investment and incentive infrastructure		Diagnostic	
	Legislative and regulatory infrastructure		Diagnostic	
	Progress of societies		All	
	Residuals in food		MEFA	
	Urbanization and urban planning		Land, EEA	

Notes:

1. Accounts acronyms are:

- EEA – Experimental Ecosystem Accounts
- EGSS – Environmental Goods and Services Sector statistics
- EPEA - Environmental protection expenditure accounts
- MEFA – Materials and Energy Flow Accounts

“Diagnostic” refers to issues of implementation to be reviewed as part of the diagnostic process.

“All” suggests that most or all SEEA accounts would be required for a comprehensive assessment of this issue.

Table 3: Common national data sources and links to SEEA accounts

Data source	SEEA Account
Environmental data	
Emissions inventory (Pollutant release and transfer registry)	<ul style="list-style-type: none"> • Air emissions • Water emissions
Water statistics	<ul style="list-style-type: none"> • Water emissions • Water flow • Water stock
Energy statistics	<ul style="list-style-type: none"> • Air emissions • Energy and material flow
Waste statistics	<ul style="list-style-type: none"> • Waste accounts
Other environmental statistics	<ul style="list-style-type: none"> • Land cover • Forest
Economic data	
National accounts	<ul style="list-style-type: none"> • Energy and material flow • Mineral and energy assets • Environmental protection expenditures • Environmental taxes and subsidies • Environmental goods and services sector
International trade statistics	<ul style="list-style-type: none"> • Energy and material flow
Business statistics	<ul style="list-style-type: none"> • Environmental protection expenditures • Environmental goods and services sector
Government finance statistics	<ul style="list-style-type: none"> • Environmental protection expenditures • Environmental taxes and subsidies
Other (e.g., administrative data)	<ul style="list-style-type: none"> • Mineral and energy assets

Table 4: List of general SEEA accounts

<i>SEEA Accounts</i>	<i>Topics covered (detailed definition)</i>
Physical flow accounts	
Full set of supply and use tables for materials	All resources and materials (energy, water, air emissions, water emissions, solid waste) (CF 3.45)
Economy-wide material flow accounts (MFA)	Supply and consumption of energy; air emissions, water emissions, and solid waste (CF 3.279)
Physical supply and use tables for water (PSUT water)	Supply (precipitation) and consumption of water (CF 3.186)
Physical supply and use tables for energy (PSUT energy)	Supply and consumption of energy (CF 3.140)
Air emissions accounts	Air emissions (CO ₂ , pollutants) (CF 3.233)
Water emissions accounts	Water emissions (CF 3.257)
Waste accounts	Solid wastes (CF 3.268)
Asset accounts	
Mineral and energy resources	Physical and monetary accounts for minerals and energy stocks (oil, natural gas, coal and peat, non-metallic minerals and metallic minerals) (CF 5.172)
Land	Physical and monetary accounts for land, land cover, land use (CF 5.235)
Soil resources	Area and volume of soil resources (CF 5.318)
Timber resources	Physical and monetary accounts for timber resources (CF 5.343)
Aquatic resources	Physical and monetary accounts for fish, crustaceans, molluscs, shellfish and other aquatic organisms such as sponges and seaweed as well as aquatic mammals such as whales. (CF 5.393)
Other biological resources	Cultivated animals and plants including livestock, annual crops such as wheat and rice, and perennial crops such as rubber plantations, orchards and vineyards. (CF 5.462)
Water resources	Stock of water resources (CF 5.471)
Monetary flow accounts	
Environmental protection expenditure accounts (EPEA)	Output of EP services in economy and expenditures on EP goods and services by resident units (CF 4.45)
Resource use and management accounts (RUMEA)	Production, supply and use, expenditures on and financing of resource management (CF 4.121)
Environmental goods and services sector (EGSS)	Characteristics of all producers of products intended for environmental protection and resource management (CF 4.95)
Environmentally related payments by government	Environmental subsidies, social benefits to households, investment grants and other current and capital expenditures (CF 4.138)
Environmentally related payments to government	Environmental taxes (taxes on products, production and income; other current taxes and capital taxes) and other payments to government (rent, sales of some goods and services, some fines and penalties) (CF 4.149, CF 4.159)
Permits and licenses to use environmental assets	Permits to extract and harvest natural resources (CF 4.174)
Emissions permits	Permits for the use of the environment as a pollution sink (emissions permits) (CF 4.182)
Costs related to termination of fixed assets	Environmental consequences of disposing of fixed assets (nuclear power plants, oil rigs and other equipment, landfills, mines, etc.) (CF 4.194)
Experimental, extensions and applications	
Ecosystem condition and extent	Characteristics of ecosystem condition and ecosystem extent (EEA 40, EEA 88, EEA 89)
Physical flows of ecosystem services	Ecosystem services by ecosystem type (EEA 39, EEA 41, EEA 60, EEA 90)
Carbon stocks	All carbon stocks, additions and reductions (EEA 95)
Biodiversity	Species abundance (EEA 102); Threatened species (EEA 111)

CF = Central Framework, white cover edition, refers to paragraph number; EEA = Experimental Ecosystem Accounting.