



System of
Environmental
Economic
Accounting

Update of the SEEA Central Framework

Guidance Note

Issue A.2:

Indicators

For Global Consultation
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EXECUTIVE SUMMARY

Description of issue

This guidance note recommends a way forward for improving the discussion on indicators in the SEEA CF in response to SEEA CF update issue A.2.

The 2012 SEEA CF provides a general discussion on indicators and the links to accounting in Chapter 6. However, there is limited discussion of indicators in relation to the various SEEA CF accounts and, given the ongoing efforts globally and within countries to develop indicators set in relation to the environment and sustainability, it is appropriate to consider improvements to the text of the updated SEEA CF.

Summary of proposals

Generally, some improvements are proposed to the introductory chapters of the SEEA CF to explain the rationale behind the importance of indicators given their use in policy and decision-making by turning data into information which can be applied in a range of contexts and appreciated by the community.

It is proposed that the typology in the SEEA CF is updated modified to reflect recent developments. Following consideration of alternative typologies including the UNECE typology for the circular economy and an input output-based typology, it is proposed to apply a typology for indicators drawn from the principles of the indicator typology developed by the European Environment Agency (1999). The proposed typology reflects a smaller change from the current SEEA CF but is more technically grounded. It has four key indicator types, namely:

- a. *Descriptive aggregates* – these indicators describe the overall connections between the economy and the environment. These would typically be aggregates or accounting identities from the SEEA flow, asset or functional accounts. The term “descriptive aggregates” replaces the term “descriptive statistics” since it better reflects the accounting-based nature of the SEEA.
- b. *Performance indicators* – these indicators measure environmental aggregates in relation to other relevant data, such as on population, sustainability thresholds and the performance of natural resource-based economic activities.
- c. *Efficiency indicators* – these indicators measure the use of resources (such as energy, materials, or water) in relation to the outputs produced, reflecting how efficiently natural resources are utilized in economic activities.
- d. *Linking indicators* – these indicators link information from other domains such as the social domain to show how environmental use influences progress within those domains.

It is proposed that an example is included in the SEEA CF to guide compilers through the calculation and presentation of indicators and to discuss some considerations for including indicators in published outputs. A worked example using air emissions is suggested covering aspects of a descriptive aggregate, a performance indicator based on comparison to atmospheric concentrations, an efficiency indicator based on GDP and a gender-based air emission disaggregation. The example will include a description of issues for choosing aggregates and indicators as well as discussing other issues associated with compiling and publishing indicators.

It is proposed to include additional text on the links to international indicator sets and indicators in the social domain by using a range of policy themes as the entry point, for example use of natural resources, rather than documenting specific indicator initiatives such as the Sustainable Development Goals.

Questions for Global consultation

The questions below are for reference only. Please submit your responses through the online form available here: [Consultation form: Guidance Note on Issue A2 – Fill out form](#).

1. Do you agree with the proposal to improve the text explaining the rationale for indicators derived from the SEEA CF and the proposed emphasis on indicators as a bridge between statistical compilation and policy decision-making?
2. Are there other purposes or uses of indicators that should be described in the updated SEEA CF beyond what is presented in Chapter 6 of the 2012 SEEA CF?
3. Do you agree with the proposed typology of indicators considering its structure, terminology and coverage presented in para 9 of the Guidance note?
4. Do you agree with the proposal to include in the SEEA CF a series of examples about indicators, in this case using Air Emission Accounts as a focus?
5. Do you agree with the proposal that the updated SEEA CF should describe links to both international indicator sets and social domains using policy themes as the entry point?
6. Do you have any other comments on the Guidance Note?

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1 INTRODUCTION

1.1 Purpose of the Guidance note

1. The purpose of this guidance note is to provide guidance on the treatment of issue A2 “Indicators” for the update of the SEEA CF. The issue description from 2024 notes: *“The SEEA CF highlights some key indicators that can be derived from the framework. Since 2012, several advancements have been made on indicators (e.g. SDG indicators). The updated SEEA CF could make explicit how current indicator frameworks can be informed by the SEEA, to show the relevance of the SEEA CF, strengthen the relationship between statistical and policy frameworks, and highlight the ability of the SEEA CF to provide further insights through the joint presentation of data.”* This Guidance note builds on the [Scoping Note](#) developed on this issue A4.

1.2 Motivation for the issue

2. This issue is critical for understanding the vast array of data that is organised through the SEEA CF. Clearer guidance on the use of indicators in SEEA CF would be useful for compilers, for those developing indicator sets at global or national level, and for potential users of the accounts such as, for example, policy makers.
3. The SEEA’s information is intended for use by a wide range of audiences which have different needs. For instance, policy development, monitoring and evaluation requires indicator-based information to examine the results of previous interventions in the environment, and also detailed information, often linked with other domains, to examine options for future intervention once a need is identified.
4. Often the motivation for national statistical offices to compile indicators is to provide information for communities to make decisions about their own well-being. Indicators are often the key communication avenue, including through social media or the news cycle.
5. This guidance note will focus on improving and extending the existing text in the SEEA CF on indicators and aggregates derived from the accounts. This paper does not include a proposal for an indicator framework for environmental-economic accounting, nor does it include a detailed methodology or compilation guide for individual indicators.

1.3 Structure of the Guidance note

6. This guidance note contains the following sections:
- a. Summary of existing measurement and research.
 - b. A discussion of options and possible treatments.
 - c. A core set of proposals and recommendations for the treatment of indicators.
 - d. Other issues and considerations for indicators in the SEEA CF.

2 SUMMARY OF EXISTING MEASUREMENT AND RESEARCH

7. There are various pieces of information about indicators spread throughout the SEEA CF chapters and accounts as summarised in the table below. The full set of text on indicators from the 2012 SEEA CF is included in Annex 1. As well, a summary of other indicators suggested in the SEEA Applications and Extensions is given in Annex 2.

8. Subject to the development of content for each of the accounts, it is proposed to maintain and, where appropriate, extend the indicators listed in the table below, considering as well, the application of the proposed typology of indicators discussed below.

Table: List of indicators in the current SEEA CF

Account	Aggregate/indicator
Physical Flow (generic)	Total Supply of Products (TSP) Total Use of Products (TUP) Total Supply of Natural Inputs (TSNI) Total Use of Natural Inputs (TUNI) Total Supply of Residuals (TSR) Total Use of Residuals (TUR)
Input Output (generic)	Materials into the economy Materials out of the economy Net additions to stock in the economy
Energy	Gross Energy Input Net Domestic Energy Use
Water	Gross Water Input Net Domestic Water Use Final Water Use
Emissions (air, water, land)	None
Solid Waste	None
EPEA, EGSS, Environmental transactions	Total Expenditure on Environmental Protection
Asset	None
Sequence of Economic Accounts	Depletion adjusted Net Value Add Depletion adjusted Net Domestic Product Depletion adjusted Net Operating Surplus Depletion adjusted Net National Income Depletion adjusted Net Savings

9. As the text in Annex 1 demonstrates, a clearer up-front statement could be included in the SEEA CF describing the usefulness of indicators. As an indication of the type of content that could be included, a 2005 UNDP document *Indicators for Policy Management* has a passage describing the usefulness of indicators which summarises well the benefits of indicators:

“The major strength of indicators is their ability to condense a broad range of information into a single and well-defined value that can be easily disseminated and interpreted by a broad audience. Indicators allow us to track changes over time and make comparisons across sub-populations using objective evidence of progress. Any indicator, however, is only as good as the data from which it is derived, the methodology used to compute it, and the use to which it is put.” (UNDP, 2005)

10. Alternatively, as paraphrased from Schenau (2007):

“Indicators play a key role in bridging the gap between statistics and their users. They reduce the number of measurements and parameters that normally would be required to give an exact presentation of a situation. Secondly, they simplify the communication process by which the results of measurement are provided by the user. Indicators for the environment can be used at international and national levels in state of the environmental reporting, measurement of environmental performance and reporting on progress towards sustainable development. Indicators derived from the environmental accounts may play a key role as they are part of an integrated framework and their linkages between economic and social issues.”

11. SEEA CF section 6.4 describes five purposes of indicators and identifies three types of indicators based on their complexity:
 - a. Indicators based on statistics from the account (e.g. total supply, closing stock)
 - b. Indicators based on derivations (use by industry divided by total Use, % change in land cover). These indicators could use additional information for measures relating to economic or population (natural resource intensity, per capita consumption of a natural resource). They could also include information from generalised equilibrium modelling or Environmentally Extended Input Output tables.
 - c. Indicators based on combining data together for a composite index, longitudinal or decomposition estimates.
12. During the discussion of this issue, it was recognised that it would be useful to revisit the typology of indicators presented in the SEEA CF. In taking this work forward, three existing indicator typologies were identified as being of primary interest. These are presented in Annex 3. However, the existing description of indicators in SEEA CF section 6.4 is still relevant, so consideration of the SEEA CF text together with the typologies listed in Annex 3 is considered appropriate.
13. Issue A3, Environmentally Extended Input Output tables is a good example of a complex framework for deriving indicators for the purposes of analysing detailed environmental product use in the economy. This would be useful for determining consumption-based estimates of air emissions as an example.
14. An example of how a set of indicators would be useful would include commentary on:
 - a. The context for creating indicators including explaining how to describe the links between indicators and particular uses.
 - b. Types of data that could be linked to improve the range of indicators being published using the typology of SEEA CF indicators as a guideline.
 - c. Describing challenges with incorporating non-SEEA data.
 - d. Providing a link to the social domain as an example of how information can be expanded beyond environmental issues.
15. International indicator frameworks are generally developed in connection to global initiatives such as, for example, the 2030 Agenda for Sustainable Development and the Beyond GDP initiative, which are coordinated efforts to measure and monitor progress towards sustainable, inclusive, and well-being-oriented development by moving beyond narrow economic metrics. However, SEEA is currently only marginally used in support of these initiatives, although it provides an integrated, coherent and consistent information system for the derivation of several indicators. Rather than list out each of the areas where SEEA could fit into current international indicator frameworks, it is likely better to consider the themes where SEEA CF based information

could be included when considering how to use this information, including in future new or revised indicator frameworks. Current links to SEEA CF data used for international indicators framework are reflected in Annex 2.

16. Finally, the link to other domains beyond the economic and environmental domain, is vital in most countries. Indicators and the compilation of information with regard to particular domains, such as the social domain, should be considered in the SEEA CF. This may include, for example, measuring the impacts of environmental issues - such as air emissions - on different gender groups at subnational level. In addition, a number of activities are currently underway to strengthen the linkages between the SEEA and measurement of the social domain. These activities will be discussed in a separate guidance note on issue A7 to be prepared in Tranche #3 of the global consultation process for the updated SEEA CF.

3 OPTIONS AND POSSIBLE TREATMENTS

17. Taking into account of the need for indicators and demonstration of how this links to other domains such as the social domain, the proposed overall approach is to:

- a. Adjust the existing text in the SEEA CF to demonstrate the development of indicators using aggregates, i.e. based on accounting identities, from each of the accounts
- b. Provide some descriptions of extensions to these aggregates which would include derivations based on data available in the accounts or readily available information from economic or social statistics, such as population data.
- c. Discuss, with an example, a step-by-step method for creating an indicator from multiple accounts in the SEEA CF and also note any limitations and other advice on facilitating the interpretation of the indicator.
- d. Discuss extensions to other domains including the social domain.

18. It is noted that indicators can provide an effective entry point for engaging policy makers in the use of the accounts. This will be explored in more depth in the guidance note on issue A6 “Introduction of thematic accounts and strengthening the link to policy”.

19. A new typology of SEEA CF indicators is also proposed for inclusion in the updated SEEA CF. One such typology that aligns with the current indicator approach in the SEEA CF is similar to the 1999 European Environment Agency (Annex 3). Taking a minimalist approach to modifying existing text, then a suggested typology for aggregates and indicators is:

- a. *Descriptive aggregates* – these indicators describe the overall connections between the economy and the environment. These would typically be aggregates or accounting identities from the SEEA flow, asset or functional accounts. The term “descriptive aggregates” replaces the term “descriptive statistics” since it better reflects the accounting-based nature of the SEEA.
- b. *Performance indicators* – these indicators measure environmental aggregates in relation to other relevant data, such as on population, sustainability thresholds and the performance of natural resource-based economic activities.
- c. *Efficiency indicators* – these indicators measure the use of resources (such as energy, materials, or water) in relation to the outputs produced, reflecting how efficiently natural resources are utilized in economic activities.
- d. *Linking indicators* – these indicators link information from other domains such as the social domain to show how environmental use influences progress within those domains.

20. Alternatively, a model such as the UNECE typology for the circular economy (Annex 3) or an input output-based typology (Annex 3) could be used. This would mean recrafting the text in section 6.4 based on a new typology.
21. On balance, taking a minimalist approach, text changes to the current section 6.4 would be concentrated on:
- a. Clarifying the definition of ‘descriptive statistics’ to include ‘descriptive aggregates’ as a concept and clarifying the role of accounting identities.
 - b. Distributing the remaining text with the typology under the headings ‘performance indicators’, and ‘efficiency indicators’.
 - c. Including some new text on linking indicators, that is, to other domains.
22. On the group of indicators linking to international indicator efforts and other domains, this note proposes that the updated SEEA CF use a theme-based approach. These would have more flexible links to domestic policy rather than being based on links to existing international indicator sets or global initiatives. A possible list of themes based on observing a wide range of international reporting could be:
- a. Use of natural resources (including water, energy, forests, etc)
 - b. Sustainability of use of natural resources
 - c. Capacity for the environment to absorb externalities (residuals)
 - d. Cost of protecting the environment
 - e. Impacts on societal well-being from a diminishing environment
23. These themes could be linked to a number of domains such as:
- a. Production or Economic Output
 - b. National Wealth and Income
 - c. Society and culture (though these could be separate)
 - d. Human enterprise and capacity
24. It is anticipated that there should be some overlap with issue A3 ‘Environmentally extended Input Output tables’ as these tables support application of a consumption-based principle and provide detailed information about the links to the environment from a product or industry perspective.
25. To support the discussion on indicators, it is proposed that there be a series of examples included in the updated version of SEEA CF Section 6.4. There is a need to explain some of the context behind the choice, compilation and analysis of aggregates and indicators. There is also a need to explain the risk of misunderstanding in the use of indicators. Three examples are proposed that overlay with the discussion and typology of indicators all based on air emissions:
- a. Example 1 – what are the key aggregates for air emissions? Why are they useful and what do we need to include with the statistics?
 - b. Example 2 – how are emissions performing over time? What are some of the considerations in compiling performance or efficiency indicators for emissions? What are the recommendations to analyse these data?

- c. Example 3 – What is one way to link emissions to the social domain? What are the issues with allocating emissions data to social (e.g. gender) groups?

26. The use of a consistent example would demonstrate the feasibility and accessibility of an indicator system. It would be a good way to highlight the considerations of deriving indicators and some of the caution needed in compiling and publishing these indicators. Finally, these examples would also be a good way to demonstrate to policy makers the versatility of the accounts.

4 PROPOSALS AND RECOMMENDATIONS

27. The following proposals are made to advance the discussion of indicators in the updated SEEA CF:
- a. Include text on the benefits of deriving indicators based on accounting frameworks and the benefits of using indicators to convey accounting-based information in chapter 2 and consider integration into current paragraphs 1.24 or 1.54 (see Annex 1).
 - b. An updated indicator typology, as presented in para. 19, will be introduced into the SEEA CF. This will replace the existing text describing the types of indicators in section 6.4 of the 2012 SEEA CF (see Annex 1). Key changes proposed are:
 - In general, the term ‘descriptive statistics’ will be replaced with ‘descriptive aggregates’ and Information about financial aggregates will be explicitly incorporated into this component.
 - Ratio indicators will be split between Performance indicators (comparisons to totals) and Efficiency indicators (comparisons to other economic and social aggregates) reflecting the different policy interests in these types of indicators
 - Linking indicators will be introduced picking up on some of links to the social domain (to be considered further in a later guidance note) and other international led efforts to develop indicators across multiple domains.
 - c. Include discussion of international indicator sets and on links to the social domain by modifying and expanding existing text to refer to a more general set of policy themes.
 - d. Include a series of examples in the text in section 6.4 focusing on aggregates and indicators (as outlined in the typology). It is recommended that air emissions be used as the focus of example. It is also recommended that commentary on issues concerning selection, common problems in compiling indicators and caution about the use of indicators should be included in these examples.

5 OTHER CONSIDERATIONS IN ADVANCING THE ISSUE

28. Some effort should be made to improve the SEEA Applications and Extensions publication, with particular focus on:
29. Use of an environmental indicator typology
- a. Improving examples and including examples that cover all aspects of an environmental indicator typology.

- b. Including text on linking to other domains with particular attention to the social domain examining opportunities to develop both aggregated and more disaggregated indicators in relation to small population or geographic groups.

30. Also, some consideration could be given to an indicator framework for SEEA statistics including SEEA CF, SEEA Ecosystem Accounting and SEEA Agriculture Forestry and Fisheries (and potentially Measures of Sustainable Tourism). While this is out of scope for the SEEA CF, this work could strengthen the SEEA accounting system.

REFERENCES

European Environmental Agency (1999) Environmental Indicators: Typology and Overview Technical Report 25/1999 <https://www.eea.europa.eu/en/analysis/publications/tec25>

Sjoerd Schenau, 2007, *Indicators in the SEEA: Identifying the main aggregates in SEEA Part I*, 12th Meeting of the London Group on Environmental Accounting Rome, 17-19 December 2007.

UNDP, 2005, Indicators for Policy Management: A Guide for Enhancing the Statistical Capacity of Policy-makers for Effective Monitoring of the MDGs at the Country Level, United Nations.
https://www.undp.org/sites/g/files/zskgke326/files/publications/Indicators_for_Policy_Management.pdf

UNECE (2023) Guidelines for Measuring Circular Economy, https://unece.org/sites/default/files/2024-02/ECECESSTAT20235_WEB.pdf

ANNEX 1: ORIGINAL TEXT ON INDICATORS FROM SEEA CF

Most of the current text on indicators and statistics from SEEA CF is in Chapter 2, Chapter 6 and in some accounts such as energy and water. The SEEA Applications and Extensions publication also considers a wide range of indicators (see Annex 2). The key content in the SEEA CF is summarized here.

The current recommendations for indicators from SEEA CF is based on a number of references spread throughout the publication:

1.24 The SEEA is a multipurpose system and is relevant in a number of ways for policy development and evaluation as well as decision-making. First, the summary information (provided in the form of aggregates and indicators) can be applied to issues and areas of the environment that are the focus of decision makers. Second, the detailed information, which covers some of the key drivers of change in the environment, can be used to provide a richer understanding of the policy issues. Third, data contained in the SEEA can be used in models and scenarios designed to assess the national and international economic and environmental effects of different policy scenarios within a country, between countries and at a global level.

1.54 One of the most important features of the SEEA Central Framework is its capacity to organize physical and monetary data that have common scope, definitions and classifications into combined presentations. The structure of combined presentations depends on the topic of measurement (e.g., water, energy, air emissions or forest products), the questions of interest, and the availability of data. Nonetheless, there are certain common features and benefits:

3.4 The use of the SEEA framework allows robust indicators to be established for the consumption of resources relative to economic indicators such as output and value added, since there is a parallel in the underlying accounting principles. Indicators on energy use, water consumption and air emissions by industry are further evidence of the potential uses of data organized in a coherent and consistent manner.[E116.1]

SEEA CF Chapter 2 is an elaboration of the accounting structure and introduces the key features of the SEEA. While it does mention the use of indicators and the link to social and demographic information, these are a 'light touch approach'. Extracting the references from the SEEA:

Para 2.28 Implementation does not require compilation of every table and account for all environmental assets or environmental themes. Instead, it can be modular, taking into account those aspects of the country's environment that are most important. At the same time, the ambition should be to fully account for the environmental-economic structure of a country and to provide information on issues of global concern using a common measurement framework.

Para 2.36 One feature of monetary supply and use tables is that key economic aggregates can be derived using the various components. In particular, the aggregate value added by industry can be calculated as the difference between an industry's output and its intermediate consumption. This aggregate forms the starting point for the sequence of accounts described in section 2.3.4.

Para 2.46 Both the supply and use identity and the input-output identity are an integral part of the Central Framework. They are based on the law of the conservation of mass and energy which states that the mass and energy of a closed system will remain constant. The implication for accounting is that, in theory, mass and energy flows must balance across natural inputs, products and residuals.

Para 2.53 Generally, asset accounts are compiled for individual types of environmental assets. In monetary terms, there may be interest in aggregating the values of all environmental assets at the beginning and the end of the accounting period. Such aggregations can be presented in balance sheets, and through their combination with the value of other assets (e.g., produced assets and financial assets) and liabilities, an overall measure of the net wealth of an economy can be obtained.

Para 2.63 Of particular importance is the derivation of depletion-adjusted balancing items and aggregates within the sequence of economic accounts. Depletion-adjusted measures go beyond the balancing items and aggregates measured in “net” terms in the SNA (i.e., after the deduction of consumption of fixed capital) and further deduct the cost of using up natural resources (i.e., depletion). The main balancing items and aggregates within the sequence of economic accounts are shown in broad terms in table 2.5.

Para 2.64 The sequence of economic accounts starts in the production account that is formed using the entries of output and intermediate consumption from the monetary supply and use table. In the production account, the balancing item is value added (output less intermediate consumption). At an economy-wide level, the main related aggregate from the production account is GDP. Consumption of fixed capital and depletion are deducted from gross value added and GDP to form measures of depletion-adjusted net value added and depletion-adjusted net domestic product.

Para 2.66 As in the production account, depletion can be deducted from the balancing items of net operating surplus and net saving. The key aggregates from these accounts in gross terms are gross national income (GNI) and gross national saving, both of which can be adjusted for depletion and consumption of fixed capital to form depletion-adjusted measures.

Para 2.73 The highlighting of environmental activities and products enables information to be presented on the economic response to environmental issues. Particular flows of interest are the output of environmental goods and services, and expenditures on environmental protection and resource management, as well as environmental taxes and subsidies.

Para 2.86 While no standard structure can be defined, compiling and contrasting monetary and physical data in meaningful ways are at the heart of the SEEA philosophy. This section has provided a general introduction to combined physical and monetary presentations. Chapter VI discusses the compilation of these presentations and provides examples of potential presentations on particular themes, such as energy and water. More detailed presentations involving structures such as input-output tables, the full sequence of economic accounts or presentations that cover a particular theme or topic, for example, fisheries, are considered in SEEA Extensions and Applications and in targeted thematic publications (such as on water and energy).

The most comprehensive text on indicators is given in Section 6.4. Section 6.4 describes the current SEEA CF indicator approach, this can be summarized as embodied in the following five areas:

- i. Descriptive Statistics – covering totals from flow accounts; depletion in physical terms from the asset accounts; key monetary estimates from the sequence of economic accounts; and totals from the functional accounts and EGSS. Includes commentary around structural statistics e.g. taxes and subsidies, land accounts and so on.
- ii. Environmental asset aggregates and indicators – provides descriptions (but not calculations) of what could be measured from physical and monetary accounts including totals of natural resources, total national wealth, depletion and share of resource rent. Includes advice on combining with population and descriptive statistics.

- iii. Aggregates related to financing and cost recovery of economic activity related to the environment – provides descriptions on aggregates that may inform about how environment activity is financed, full cost of providing access to natural resources, subsidies and other transfers especially from government and the rest of the world.
- iv. Environmental ratio indicators – Includes descriptions of productivity and intensity indicators; decoupling indicators; and polluter pays indicators.
- v. International indicator initiatives – provides some links to indicator programs that were available at the time (2012) and gives general advice that set of indicators on environmental and sustainable development issues should use the Central Framework as a basis, though without any mechanism for compulsion.

ANNEX 2: SUMMARY OF INDICATORS FROM INTERNATIONAL INDICATOR SETS AND FROM SEEA APPLICATIONS AND EXTENSIONS

The following indicator sets include some indicators that are based on the SEEA CF

1. Sustainable Development Goals (SDG):
 - a. There are a number of references to indicators developed using Economy-Wide Material Flow Accounts using Material Footprint and Domestic Material Consumption for indicators 8.4.1, 8.4.2, 12.2.1 and 12.2.2, though the indicators refer to the European EW-MFA manual.
 - b. Indicator 17.7.1 recommends the use of statistics from Environmental Goods and Services Sector from SEEA CF
2. Global Biodiversity Framework (GBF):
 - a. Indicator D2 recommends the use of the Environment protection expenditure accounts or Classification of Functions of Government
3. Aichi Targets (pre GBF):
 - a. Target 3 recommends the inclusion of an MFA

The SEEA Applications and Extensions publication also contained guidance on indicators by purpose which is useful as a starting point:

I. Indicators of Resource Use and Environmental Intensity (Section 2.3). These indicators often combine physical environmental variables with economic variables to measure efficiency or decoupling. Examples include:

- Gross energy input and net domestic energy use.
- Gross water input, net domestic water use, and final water use (water consumption).
- Total flows of air emissions, releases of substances to water, and generation of solid waste.
- Environmental Ratio Indicators (Intensity, Productivity, and Decoupling):
- Environmental intensity indicators, expressed as the ratio of an environmental variable (like pollutants or residuals) to an economic variable (such as output, income, or value added) or to population.
- Material productivity or intensity indicators, which relate the use of material resources to corresponding economic activity, calculated at an economy-wide level, by industry, and for material groups (e.g., mineral resources, biotic resources, energy carriers).
- Material dependency ratios, reflecting the share of imports of certain material groups within total gross material input.
- Energy productivity or intensity indicators, relating net domestic energy use to corresponding economic activity, calculable at the economy-wide level, by industry, and by primary energy source.
- Indicators for environmental flows such as water, energy, CO₂ emissions, nutrient balances, and solid waste.

- Decoupling indicators, which focus on changes in volumes, contrasting environmental pressure (numerator) with an economic variable or population growth (denominator).
- The share of energy from renewable sources or from fossil fuels in total supply, and by industry.
- Energy dependency ratios, comparing energy produced domestically with imported energy.
- Indicators linking energy production and consumption to resource use and air emissions.
- Indicators of environmental flows from a consumption- or demand-based perspective.

II. Indicators of Production, Employment, and Expenditure Related to Environmental Activities (Section 2.4). These indicators assess the economic significance of environmentally related activities, often derived from Environmental Goods and Services Sector (EGSS) statistics and Environmental Protection Expenditure Accounts (EPEA). Examples include

- Key EGSS Indicators and Aggregates: Indicators showing the importance of environmentally related activities in the economy.
 - Characterization of environmentally related activities through their contribution to employment, to the economy as a whole, and to trade (exports and imports).
 - The measure of employment in the EGSS, serving as a useful indicator of changes in environmentally related employment (though the SEEA Central Framework does not establish a measure of "green jobs").
- Key EPEA Indicators:
 - Trends in expenditure on pollution prevention, pollution abatement, and biodiversity conservation.
 - The shift to pollution preventing technologies.
 - Indicators showing how expenditure on environmental protection compares with other types of expenditure.
 - Indicators reflecting the share of transfers from government or the rest of the world in the financing of environmental protection expenditure.

III. Indicators of Environmental Taxes and Environmental Subsidies and Similar Transfers (Section 2.5). These metrics evaluate the use of economic instruments for achieving environmental policy objectives. Examples include:

- Measures relating to the share of environmental taxes in total taxes.
- Indicators categorized by type of environmental tax (energy taxes, pollution taxes, etc.).
- Implicit tax rates, such as the implicit tax rate on energy.
- Indicators related to emission permit schemes.
- Indicators of the level and purpose of environmental subsidies and similar transfers.

IV. Indicators of Environmental Assets, Wealth, Income, and Depletion of Resources (Section 2.6). These indicators are based on asset accounts for individual environmental assets (e.g., mineral, timber, aquatic, and land resources) compiled in physical and monetary terms. Examples include:

- Indicators of Asset Stocks and Changes: Physical measures of levels and changes in the stocks (e.g., depletion) of different environmental assets, including:
 - Mineral and energy resources.
 - Timber resources.
 - Aquatic resources.
- Indicators of asset or resource life (e.g., derived by dividing the closing stock of a resource by the expected annual extraction).
- Patterns of change in land use and land cover.
- Indicators of the intensity of use of resources.
- Measures of income and changes in wealth associated with natural resources.
- Specific Land Indicators:
 - The share of built-up areas (or artificial surfaces) in total land area.
 - Conversions of areas with a natural cover to cropland and pastures for grazing.
 - Conversions of agricultural or forest land to built-up and related areas.
 - The share of forest areas (cultivated and natural) in total land area, accompanied by a breakdown by type of forest area

ANNEX 3 TYPOLOGIES OF INDICATORS

Environmental indicators: Typology and overview (EEA, 1999)

1. Type A or Descriptive Indicators ('What is happening to the environment and to humans?')
2. Type B or Performance indicators ('Does it matter?')
3. Type C or Efficiency indicators ('Are we improving?')
4. Type D or Total Welfare indicators ('Are we on the whole better off?')

Guidelines for Measuring Circular Economy (UNECE, 2023)

1. Core indicators (or their proxy when the core indicator is currently not measurable) are indicators that capture key elements.
2. Complementary indicators: Indicators that accompany or complement the message conveyed by the core indicators, by providing additional detail (sub-national detail, sectoral detail) or focus (particular materials or activities), or by covering additional aspects.
3. Contextual indicators: indicators that provide background information on socioeconomic and environmental variables to facilitate interpretation in the appropriate country context and to inform about drivers.

Indicators for policy management (UNDP, 2005)

There are two types of intermediate indicators: input and output.

1. Input indicators measure the financial and physical resources used in a process (e.g. money spent on new classrooms) as well as human resources dedicated to a process (e.g. number of teachers).
2. Output indicators measure the goods and services produced by the input (e.g. number of new classrooms, or number of classes available).

Outcome and impact are both final indicators.

1. Outcome indicators measure access to – and satisfaction with – services (e.g. primary school enrolment rate).
2. Impact indicators measure the dimensions of well-being (e.g. literacy rate) that public policies aim to affect.