



DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
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System of
Environmental
Economic
Accounting

SEEA Central Framework update

Scoping note for issue B6: “Inclusion of residual flows to ecosystem type: i.e. pressure account”

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Note: This Scoping Note has been prepared in the context of the SEEA Central Framework update, mandated by the United Nations Statistical Commission in 2024. A set of [29 issues](#) was identified for the update process and endorsed by the United Nations Statistical Commission in 2025. As an initial step, Scoping Notes were developed for each issue to elaborate on its description and provide a common understanding of the work required to fully investigate and formulate recommendations for the updated SEEA Central Framework. Each Scoping Note was prepared by a lead author and discussed in the relevant Task Team. They were subsequently reviewed by the SEEA CF Technical Committee and the UNCEEA, and approved by the SEEA CF Technical Committee.

1 Background to the issue

1. The short description of issue B6 “Inclusion of residual flows to ecosystem type, i.e. pressure account” from October 2024 is:

“PSUTs in the SEEA CF include a column for the environment. It would be policy relevant to record where (i.e., in which ecosystems) these residuals end up in. This could entail creating a pressure flow account (which is not included in the SEEA EA).”

2. The short description provides a very neat summary of the proposed extension to the SEEA CF, i.e. providing more detail in the current PSUT about flows to the environment.
3. An important inspiration for this proposed extension has been work by Statistics Netherlands as part of their ocean ecosystem accounting work. In that work they recognised the relevance of measuring environmental pressures. As they note, the SEEA Ecosystem Accounting (SEEA EA) provides a definition of environmental pressures – “a human induced process that alters the condition of ecosystems (SEEA EA 5.105)” however there is no direct link made in the accounting system between the pressures themselves (for example flows of polluted water) and the effects on the environment. A pressure account is intended to fill that gap.

2 Motivation for considering a change to the SEEA Central Framework

4. In part, a rationale for including description of a pressure account in the SEEA CF reflects the potential to provide a more comprehensive accounting system. In particular, it provides a very tangible link between the accounts of the SEEA CF and the accounts of the SEEA EA.
5. From a policy perspective, there are a range of useful features that emerge from the compilation of pressure accounts. From an ecosystem management perspective there is the potential to work backwards to identify the particular pressures that are leading to changes – generally unfavourable – in ecosystem condition. This would support better targeting of policy responses and the design of context specific solutions.
6. From the other direction, there is the potential to more fully articulate the links between drivers of environmental change and impacts on environmental and social well-being using the DAPSIR model -Driving forces, Activities, Pressures, State (change), Impacts, Responses. This model, and its earlier variants, have been widely applied in environmental policy making and supporting the application of this model through the compilation of pressure accounts is a relevant rationale.

3 Nature of the proposed change and research questions

7. The broad proposal for consideration is whether the PSUT as described in the SEEA CF should be extended such that flows to the environment are recorded by location, e.g. by ecosystem asset. In practice this would imply adding columns to the use table of the physical flow accounts for relevant environmental flows.
8. However, in considering the more general idea of a “pressure account” the possibility of developing other accounts designs emerges. Indeed, a general challenge in determining the scope of work for this issue is that all human interactions with the environment may, in some way, be considered as pressures on the environment.

9. Thus, to provide an initial scope for the drafting of the Guidance Note (GN), it is therefore considered appropriate to limit the set of pressures to residual flows recorded in physical flow accounts that are considered likely to have negative impacts on the condition of the environment.
10. This scope thus excludes the design of specific accounts for other types of pressure such as
 - a. activities related to the harvesting of natural resources, e.g. timber and fish
 - b. changes in land use (e.g. urbanisation)
 - c. passive environmental uses (e.g. marine transport, noise and light pollution, tourism)
 - d. environmental pressures (e.g. invasive species, natural events, climate change).
11. While the design of specific accounts for these pressures is excluded, the GN could consider the drafting of advice on how information about these types of pressures may be gathered from existing SEEA Central Framework accounts, for example land use accounts, natural resource accounts). In effect, providing information on these types of pressures may be seen as an application of the accounting framework.
12. Within the scope of pressures concerning residual flows the following questions require further investigation and description:
 - a. What different types of residual flows should be considered e.g. air pollution, water pollutants, wastewater, etc?
 - b. Are there specific residual flows that are of higher importance that should be the focus of additional descriptions? And if so, how should residual flows of higher importance be defined – e.g. in terms of expected environmental impact, vulnerability assessments, associated policies and regulation, current reporting requirements, etc.?
 - c. How should the measurement and accounting approach balance between economy-wide measurement of residual flows and the likely localised impact of these flows (e.g. in terms of specific locations within a country)?
 - d. Generally in PSUT the supply of residual flows is attributed to economic units however, to what extent will it be possible to link the impact of a residual flow in a particular location to economic units?
 - e. Should the effects of residual flows be recorded only in terms of the ecosystem types that are affected (e.g. rivers, wetlands, seagrass beds), or should they also be recorded in terms of changes in other locations (i.e. connected ecosystems) or other environmental components (e.g. species)?
 - f. Are there specific considerations to account for (i) air pollutants including, for example, LULUCF GHG emissions; and (ii) mobile sources of emissions (e.g. transportation activities)?
 - g. How should the link to the measurement of ecosystem condition be described, considering both intrinsic and instrumental perspectives on ecosystem condition?
 - h. What statistical issues (particularly concerning confidentiality) may arise in presenting statistics on pressures where the link between the source of the pressure and the effects on the environment may be limited to a small number of economic units (e.g. recording the effects of off-shore wind farms on marine ecosystems)?

13. Finally, since this is a new area of accounting development with few examples of compiled accounts, the GN should provide some initial advice on potential data sources and methods and general compilation advice. This may emerge from consideration of the questions just outlined and noting also that the updated SEEA Central Framework will provide conceptual descriptions rather than detailed compilation guidance.

4 Links to other SEEA CF update issues

14. In taking forward work on the pressure account, links should be made to the following SEEA CF update issues
 - a. Issue A1 – Overview of the links between SEEA CF and SEEA EA: Since the data required to complete a pressure account would involve understanding the location of the effects of different pressures there is a direct link to the compilation of ecosystem condition accounts and potentially to other SEEA EA accounts – e.g. species accounts. In making this link, there is a conceptual structure to more completely assess the sustainable use of natural resources and the environment embodied within the SEEA system as a whole.
 - b. Issue A2 – Indicators: The nature of the information that would be drawn into a pressure account suggests a clear potential for the derivation of indicators to support reporting and benchmarking, noting the need to also incorporate appropriate reference values for different locations and ecosystems.
 - c. Issue A4 – How SEEA CF accounts can be made spatially explicit: Compilation of pressure accounts will require a reasonable degree of spatially explicit measurement.
 - d. Issue A6 – Strengthening links to policy: By filling an information gap in the DAPSIR policy model there is the potential to further demonstrate the relevance of the SEEA CF and the SEEA EA to policy and decision making.
 - e. Issue A8 – Linking environmental activity, asset accounts and flow accounts. Pressure accounts would provide an important piece to describing these connections.
 - f. Issue B1 – Description of PSUTs. If pressure accounts are to be presented as described above then the general description of PSUTs would require some extension.
 - g. Issue B7 – Elaboration of waste accounts. Given that waste accounts may record residual flows then the recording in the waste accounts should recognise the connection to pressure accounts, recognising the need to distinguish between flows of waste within the economy and residual flows to the environment.
 - h. Issue C6 – Inclusion of potentially environmentally damaging subsidies. Since pressures are usually linked to specific economic activities then the drivers behind those economic activities will be relevant. In some cases, subsidies might be a relevant factor although the precise connections may be complex.

5 Existing materials

15. Potential materials that may be considered in developing the Guidance note include (but are not limited to):
 - a. Statistics Netherlands research on environmental pressures as presented in Chapter 5 “SEEA Ocean Ecosystem Accounting for the Dutch North Sea: towards a first full implementation” Nov 2023. There is a substantive set of associated literature referenced in that report.
16. In developing the Guidance note it will be necessary to identify the relevant experts and stakeholders for the purposes of both drafting the content of the note and also ensuring appropriately wide consultation. These experts and stakeholders have not been identified at this stage.