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System of
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SEEA Central Framework update

Scoping note for issue C5: “Climate mitigation and climate adaptation expenditure”

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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 C5: “Climate mitigation and climate adaptation expenditure” from the March 2025 final list of issues endorsed by the UN Statistical Commission (https://seea.un.org/sites/seea.un.org/files/documents/CF_update/seea_cf_issues_final_list_march_2025.xlsx) is:

“The integrated framework describes the general framework for environmental transfers. The EPEA covers part of this, namely the expenditure side. Given the great importance of climate expenditure, it warrants for a separate description (module) providing a definition, scope and account (based on the integrated accounts), separately for mitigation and adaptation. This issue links to several initiatives, including green budget tagging, GFS [Government Finance Statistics] and preliminary work done through the DGI [G20 Data Gap Initiative].”

2. Economic activities encompassing efforts to minimize the impact of natural hazards and to mitigate or adapt to climate change were identified in the research agenda of the SEEA-CF (2012) and expansion of the scope of environmental activities was already foreseen well over a decade ago:

“A2.19 The SEEA Central Framework limits the scope of economic activities considered to be environmental to environmental protection and resource management activity. However, it is recognized that there are a number of other economic activities that are related to the environment which may be of particular interest for policy and analytical purposes (see sect. 4.2). A specific set of activities encompasses efforts to minimize the impact of natural hazards (such as floods, cyclones and bush fires) and efforts to mitigate, or adapt to, the effects of climate change.” (SEEA-CF, §A2.19, Annex II, pages 307-308)

3. Expanding beyond the EP-RM expenditures to describe climate change relevant expenditures has been largely developing separately from the SEEA-framework using various budget-tagging and green finance schemes. These ad hoc approaches/methodologies are resulting in many different ways of counting and combining figures. This situation is very concerning since different approaches develop incomparable, competing, and confusing figures. When this type of situation arises, it is paramount that the statistical system takes the responsibility and the lead in the development of robust statistical systems.
4. There has also been work for climate change related expenditures and for the expenditures for disasters resulting from climate changes that are anchoring these disaster and climate economic activity accounts to the SEEA-CF. It is also worth noting that both CC and Disaster expenditures are also mentioned specifically in Issue C3 – Extending the Scope of Environmental Activities.
5. Efforts to establish methodologies relevant to this SEEA work are ongoing at the international level, see for example:
 - a. Eurostat’s work on climate change mitigation investment (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Investments_in_climate_change_mitigation);
 - b. IMF’s G20 Data Gaps Initiative (DGI III.7 <https://www.imf.org/en/News/Seminars/Conferences/DGI/g20-dgi-recommendations#rec3-7>); and

- c. the UNESCAP-UNDRR's Disaster-Related Statistics Framework (DRSF) including Disaster Risk Reduction Expenditures Accounts (DRREA) (see p. 64, and p. 112-113 Tables DRRE_A & DRRE_B of the DRSF manual, https://stat-confluence.escap.un.org/download/attachments/16155350/DRSF%20Manual_20220411.pdf?version=1&modificationDate=1649660412114&api=v2).

Note: The DRR Expenditure Accounts are currently under further development during the revision of the DRSF manual. The DRSF is planned for global consultation in the summer of 2025, and submission to the UN Statistical Commission in 2026 for approval.

2 Motivation for considering a change to the SEEA Central Framework

6. Due to the demands of our changing world, it is becoming more and more important to provide information for policy makers, researchers, and society regarding a more fully embedded picture of the human-environment interface and the expenditures relating to these interactions and responses.
7. Humans are being influenced by the natural environment in increasing ways due to rising temperatures, increased storm activity and intensity, and other natural environmental changes at both the local and global levels. Expenditures related to the responses by humans to these changes are already included in the national accounts – what is needed is to develop robust criteria for identifying and isolating these into separate special topic accounts. The relevant climate change (CC) expenditures are applicable to both nature areas (the environment) as well as human-built structures and areas. These expenditures need to be identified, categorized, and developed into a number of different but related, and overlapping accounts.
8. Climate Change expenditures should not be considered in isolation but as overlapping with EP/RM and disaster expenditures. Identifying the types of expenditures that are considered CC-mitigation, CC-Adaptation, Both CC- mitigation and CC-adaptation, Disaster expenditures, both Disaster and CC expenditures are also needed.
9. By expanding the scope of the types of expenditures included in the environmental activity accounts, separate accounts covering not only the mitigation expenditures but also the adaptation expenditures related to the human responses to a changing climate need to be developed. Along these same lines, the expenditures related to disasters also need to be included, as separate accounts since some of the climate related mitigation and adaptation expenditures overlap with the environmental disaster management and response expenditures.
10. There is a growing demand for reliable data on climate change mitigation and adaptation expenditures to support statistical reporting and economic analysis. Accurate data is essential for tracking expenditures aimed at reducing greenhouse gas emissions (mitigation) and enhancing resilience to climate-related impacts (adaptation).
11. Since there are already numerous efforts to develop these types of statistics it is now incumbent that the Official Statistical System led by the UNSD takes the leadership role to actively develop robust and internationally recognized methodologies for the development of statistics covering economic activities related to climate change mitigation and adaptation, as well as those related to natural disasters. These guidelines will need to produce comparable figures that are developed by

robust and consistent definitions, and with system boundaries that are within the family of SEEA-CF accounts.

3 Nature of the proposed change and research questions

12. The main task for the work related to the guidance note is to develop climate related mitigation and climate related adaptation expenditure accounts. From the studies and work already done by countries and international organizations, it seems that the current SEEA-CF encompasses much of the CC-mitigation expenditures, but it only covers a few CC-adaptation expenditures. Definitions, system boundaries, evaluation criteria, and adapting the CEP and expanding the classification for types of adaptations are needed.
13. Another task is to include the disaster related expenditures linked to the changing climate since these accounts are already established and soon to be approved by the UNSC. Climate change and disasters are strongly linked and should be considered in the SEEA-CF revision in the context of CC-expenditure accounts.
14. The starting point for the definitions of mitigation and adaptation should be those used by the IPCC since these have been widely accepted internationally:

- a. **Mitigation:**

A human intervention to reduce emissions or enhance the sinks of greenhouse gases.

- b. **Adaptation:**

In *natural systems*, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.

In *human systems*, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities.

(Source: <https://apps.ipcc.ch/glossary/>)

15. One way to identify parts of the new scope that is needed is to place the CC-related expenditures in relation to the existing EP and RM expenditures as categorized in the Classification of Environmental Purposes (CEP). For example, the following mitigation expenditures that reduce Greenhouse gas (GHG) emissions included in CEP:

CEP Group 0101 Reduction and Control of GHGs

- preventing greenhouse gases emissions through cleaner production processes and products;
- treatment of greenhouse gases emissions through end-of-pipe processes and equipment;
- monitoring greenhouse gases emissions;
- all other activities aimed at reducing greenhouse gases emissions including education, training, information provision and general administration (ETIGA) activities.

The 5 and 6-digit classes of CEP give more detail.

16. But it is also important to consider activities that are not included as environmental protection expenditures. For example, energy production from nuclear power plants which are non-carbon emitting energy sources.

17. Another way is to examine what is included in the definitions of CC mitigation and adaptation and identify where these actions can be found. For example, the IPCC definition also states that mitigation is also a human intervention to enhance the sinks for greenhouse gases which would include carbon sinks and carbon sequestration. Actions to improve top-soil and soil carbon, wetlands, mangroves, forested areas would also be included. These types of expenditures can be found on the Resource Management side of the CEP.
18. These examples show that a systematic review of the CEP will be needed to identify what additional types of expenditures would be relevant to CC mitigation and CC adaptation. The work by Eurostat to map mitigation and adaptation expenditures to the CEP is one place to start since some areas are already identified as out of scope of the CEP (see Annex of CEP).
19. There will be a need to have additional classifications for adaptation and disaster expenditures – which are not part of the Classification of Environmental Purposes (CEP – known as CEA [Activities] in the SEEA-CF 2012). Experience from countries that have worked on CC-expenditure accounts and climate change public budget tagging can provide some inputs into the types of classification expansion that is needed (see for example: [The Inter-American Development Bank \(IDB\) Discussion Paper No. IDB DP 844](#), the work led by the IMF on the DGI iii.7, and the UNESCAP-UNDRR's Disaster-Related Statistics Framework (DRSF), and the [Hass and Wentland 2023 LG paper](#)).
20. The Classification of Environmental Purposes (CEP) will be the starting point for developing a classification that is relevant to climate change expenditures and environmental disaster expenditures, but new categories will be needed. Whether a CC- and Disaster-extended CEP is the result or whether standalone categories are developed will need to be part of the work.
21. The experience and guidance found in the Disaster Risk Reduction Expenditures Accounts (DRREA) in the Framework for Disaster Statistics Framework is also a good source of experience and guidance with different classification for expenditures related to Climate Change related DRR expenditures.
22. How to identify which expenditures are in/out will be very important. It is proposed to continue to use a 3-step approach: first using 'primary purpose' then 'secondary purpose', finally using technical specifications. A different secondary purpose definition than the one used for EGSS will most likely be needed for climate change expenditures, mitigation and adaptation. But the 3-step process is the important part to use.
23. Deciding whether the full cost or only additional costs of a product or service are to be considered CC expenditures are also needed. For example, if a bridge needs to be built higher and stronger to withstand increased water levels under the bridge and increased wind speeds due to the changes in the intensities of storms, should the entire cost of the new bridge be counted or only the additional amount that these adaptations be included. Of course, if additional costs are only to be included then how to determine these extra costs becomes the next question. Or perhaps the replacement cost of an existing bridge vs. the cost of the climate adapted bridge needs to be considered. These criteria will need to be decided before recommendations can be provided for the revision of the SEEA-CF.
24. Consideration should be given to explaining how other thematic expenditure accounts, such as the circular economy, are also intertwined with the climate change (CC) and the disaster risk reduction (DRR) expenditure accounts. Some caution is needed however, in the ambitions of describing the inter-relations of the different thematic accounts since including too many of the thematic accounts

can become overly complex and there has yet to be a successful universal unification system developed for environmental-economic accounting.

25. Defining clear classifications, ensuring compatibility with existing economic and environmental statistics, and addressing data availability constraints are key challenges that must be addressed to develop a comprehensive system for tracking climate-related expenditures and disaster-related expenditures.

4 Links to other SEEA CF update issues

26. This topic of climate mitigation and adaptation expenditures are linked to the following topics:
27. C3: Extending the scope of environmental activities - Environmental activities currently include only environmental protection and resource management activities. In order to include climate change adaptation and expenditures for climate change related disasters, the scope of environmental expenditure accounts needs to be expanded.
28. C4: Primary and secondary purpose – The technical aspects of a product or service can be important for identifying and including an activity that is relevant to Climate Change Accounts, Disaster Expenditure Accounts, PEDS, etc. – possibly extending the scope to include secondary purposes. Including the secondary purpose as part of a 3-step evaluation process (see §20 above) is also one potential step to expanding the scope of the environmental activities account.
29. C1: Classification of Environmental Purposes (revised CEA) – The CEP will continue to apply to the EPE-, RM-, EGSS-, and integrated EPE Accounts. But new categories/classifications will be needed to encompass the full breadth and structure of Climate Change Expenditure Accounts, Disaster Expenditure Accounts, PEDS, etc.
30. C8: Incorporation of sustainable finance into an accounting framework. How sustainable finance fits with the expenditure side of the picture. These may be related depending on the scope of the sustainable finance work.

5 Existing materials

31. Potential materials that may be considered in developing the Guidance note include (but are not limited to):
 - a. CC expenditures
 - i. LG papers
 - ii. IMF papers – DGI iii.7
 - iii. Eurostat CC mitigation investment guidelines
 - iv. IDB papers
 - v. OECD reports
 - vi. CEP Annex
 - b. Disaster expenditures
 - i. UNDRR/UNESCAP work

- ii. OECD (2020), Common Ground Between the Paris Agreement and the Sendai Framework : Climate Change Adaptation and Disaster Risk Reduction, OECD Publishing, Paris
- 32. 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.