DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS

System of Environmental Economic Accounting

SEEA Central Framework update

Scoping note for issue B5: "Differences between PSUTs and EW-MFA (in the SEEA Central Framework)"

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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 B5: "Differences between PSUTs and EW-MFA" 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:

   "There are several differences in treatment between economy-wide material flow accounts (EW-MFA) and the physical supply and use tables, as described in the SEEA CF. The SEEA CF only provides a short text on these issues (section 3.6.6). Over the last years further work has been done to solve these issues and provide further clarity on the issue, which should be incorporated into the updated SEEA CF."

2. Economy Wide Material Flow Accounts (EW-MFA) and Physical Supply and Use Tables (PSUTs) are strongly related but are perhaps not exactly the same since there are different purposes for developing either EW-MFA or full PSUTs. EW-MFAs are less comprehensive than full PSUTs and thus less work intensive to develop.

3. The current SEEA-CF text is unclear exactly what the differences are between EW-MFA and full PSUTs. The text is unclear whether there are system boundary differences or if the differences are of a more pragmatic nature.

4. There has been much discussion and a number of advisory papers written on this subject, including a methodological update available on the main UN SEEA website (https://seea.un.org/content/seea-central-framework). The update is: Economy-wide Material Flow Accounts and Physical Supply and Use Tables (October 2017).

5. In addition, Eurostat has examined this in more detail and has also clarified the issue in its EW-MFA compilation manual from 2018: Economy-wide Material Flow Accounts, Handbook, 2018 Edition (https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-18-006).

2 Motivation for considering a change to the SEEA Central Framework

6. The main motivation for this change is to improve the text in the revised SEEA-CF with regards to EW-MFA and the relationship between the more focused EW-MFA and full PSUTs.

7. The classification of materials in EW-MFA and PSUTs are different. This needs to be clarified – as to why there are differences and develop a correspondence table between these two different groupings/classifications.

3 Nature of the proposed change and research questions

8. The task is to improve the text with regards to how biomass is recorded and whether the difference between how PSUTs and EW-MFA records biomass actually reflects conflicting system boundaries or whether the difference reflects simply a pragmatic use of available statistics and not a system boundaries issue. The system of national accounts (SNA) 2025 introduced some changes with regards to the treatment of cultivated versus non-cultivated biomass growth. Possible effects on the SEEA-CF need to be explored and taken into account if relevant.

9. The apparent point of disagreement is biomass. In both PSUTs and EW-MFA the growth of biomass is considered a production process.

10. PSUTs account for the inputs to the growth of biomass – so seeds, carbon dioxide from the atmosphere, soil nutrients, water, energy from the sun, etc. In other words, the system boundary is at the input side of the biomass growth. But exactly how to figure out how to count these inputs is a real challenge.

11. EW-MFA also includes biomass within its system, but it takes a more practical approach by using existing harvest figures from agriculture statistics. By using harvest statistics, EW-MFA appears to place the system boundary at the output side of biomass production.

12. Although much has been written about this topic, there seems to be general agreement that there is no real difference between the system boundaries of EW-MFA and PSUTs. The EW-MFA has the same boundaries for biomass as PSUTs. The use of harvest statistics in the EW-MFA are simply a proxy for the inputs to biomass production since it is nearly impossible to determine all the different inputs. In other words, there is no difference in the system boundaries. This is particularly the case for crops that are annuals.

13. For biomass that grows over several years before being harvested, such as trees for timber, some additional work will be needed to be certain the treatment is the same.

14. Some guidance should be provided for the development of PSUTs in terms of using the EW-MFA harvest approach as a proxy for information on biomass in the general PSUT.

15. It has also been pointed out that the groupings/classification of materials is not the same for EW-MFA and PSUTs. This needs to be discussed as to why these are different and provide a conversion/correspondence key to change materials from one system to the other.

16. A final topic to consider is how the PSUT system, including the EW-MFA sub-system, and the recording of flows of ecosystem services are related. The harvesting of biomass is of one area of definite overlap between physical flow accounts and ecosystem services flows. Briefly identifying the connections between the SEEA-CF accounts and the Ecosystem accounts may be a good way to illustrate the connections between what have usually been discussed and developed separately.

17. The revision issues B1 PSUT and B5 EW-MFA will be combined into one Guidance Note (GN). This will enable the overlaps and bridging needed to be addressed easier to be included in the revised text.

4 Links to other SEEA CF update issues

18. Issue B1 – improved description of PSUTs is relevant. It may be useful to combine B5 and B1 and if not combine them, that there be very close coordination between B1 and B5. Currently the EW-MFA is at the end of SEEA-CF chapter 3 and it may be better to re-organize the chapter and bring EW-MFA forward closer to the general PSUT description. Some countries, for example the Netherlands, use the EW-MFA proxy for biomass as an input into their complete PSUT.

5 Existing materials

19. Potential materials that may be considered in developing the Guidance note include (but are not limited to):

    a) SEEA-CF methodological update: Economy-wide Material Flow Accounts and Physical Supply and Use Tables (October 2017)

    b) Eurostat 2018 edition handbook: https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-18-006

c) The use of natural resources in the economy: A global manual on economy wide material flow accounting (2023): https://seea.un.org/content/use-natural-resources-economy-global-manual-economy-wide-material-flow-accounting

d) System of National Accounts 2025 (Pre edit version)

20. 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 confirmed at this stage but the following experts have been suggested: Stephan Moll, Aldo Femia (ISTAT), Renato Marra (Eurostat), Nina Eisenmenger, Stefan Giljum.