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**SEEA-MFA: Process leading to the publication**

Paper prepared by UNSD

*(for discussion)*

## **SEEA-MFA: Process leading to the publication**

Progress report prepared by UNSD

UNCEEA meeting, New York, 26-27 June 2008

### **A. Introduction**

1. At its Second meeting the UNCEEA stressed the importance of harmonizing the OECD guidance manual on Material Flow Accounts and the SEEA. However, considering the time constraints for finalizing the OECD manual, the UNCEEA recommended that (a) in the short term, the OECD guidance manual include the recommendations in the paper discussed by the UNCEEA (UNCEEA/2/11) that can be easily incorporated without affecting the structure of the manual; (b) a note be included at the outset of the OECD guidance manual stating that the manual may evolve to harmonize with the revised SEEA in due course and as appropriate; and (c) if resources are available, a revised document SEEA-MFA harmonized with the SEEA, be prepared and submitted to the UN Statistical Commission for its adoption. It is expected that the OECD and Eurostat will approve the guidance manual with minor changes via their relevant bodies in the short term. Further, the UNCEEA requested the London Group to include in the list of issues for the SEEA revision the further harmonization of the OECD guidance manual on Material Flow Accounts with the SEEA. The OECD, in cooperation with Eurostat, will also engage MFA experts in the discussion (Minutes of the Second Meeting of the UNCEEA, 5-6 July 2007).<sup>1</sup>

2. In response to the request of the UNCEEA, UNSD has started working on the preparation of the SEEA-MFA with the assistance of a consultant and in cooperation with Eurostat and the OECD.

3. This paper presents the scope and coverage of the SEEA-MFA and provides an update on the process for its drafting including a timetable. It is being submitted to the UN Committee of Experts on Environmental-Economic Accounting for approval, given its mandate to ensure the overall coordination of activities in environmental-economic accounting and related statistics. The last section of the paper presents questions to the UNCEEA.

### **B. Scope and coverage**

4. The aim of the SEEA-MFA is to provide a standard for material flow accounts, consisting of agreed concepts, definitions, classifications and inter-related tables and accounts for multi-purpose analytical and policy use.

5. The SEEA-MFA will present an internationally agreed set of conventions on how to compile material flow accounts. They are expressed in terms of concepts, definitions, classifications and accounting rules for measuring items such as domestic extraction,

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<sup>1</sup> [http://unstats.un.org/unsd/envaccounting/ceea/meetings/UNCEEA\\_2\\_4.pdf](http://unstats.un.org/unsd/envaccounting/ceea/meetings/UNCEEA_2_4.pdf)

imports and exports, supply and use of products and the generation of residuals. The SEEA-MFA accounting framework will allow physical data on material flows to be presented together with economic data in a format that is designed for purposes of economic analysis, decision-taking and policy-making.

6. The SEEA-MFA is designed for analysis, decision-taking and policy-making, whatever the industrial structure or stage of economic development reached by a country. The basic concepts and definitions depend upon economic reasoning and principles which should be universally valid and invariant to the particular circumstances in which they are applied. Similarly, the classifications and accounting rules are meant to be universally applicable.

7. The SEEA-MFA framework is an elaboration of the handbook of national accounting *Integrated Environmental and Economic Accounting*, SEEA 2003 in the sense that it further develops the SEEA modules with focus on material flows and it elevates the SEEA concepts, definitions, classifications and tables to the level of a standard.

8. The development of the SEEA-MFA will contribute to the process of the revision of the SEEA. In particular, it will contribute to the clarification and solution of material flow related issues on the research agenda of the revision of the SEEA as well as the development of a standard classification of physical flows.

9. Material flow accounts together with water accounts and energy accounts make up the three subsystems of the system of physical flow accounts. They consist of three partly overlapping subsystems, which describe the flows in different physical units: tons, joules and cubic meters. The material flow accounts in principle cover all flows of materials including energy products and water measured in weight units i.e. tons. Water and energy accounts use instead as units cubic meters and joules, but the three subsystems are fully consistent in terms of concepts, definitions and classifications.

10. The SEEA-MFA includes the following modules. An annotated outline of the SEEA-MFA is included in Annex I.

(a) *Physical supply and use table (PSUT) and a physical input-output table (PIOT)*. The complete PSUT / PIOT shows the physical flows by economic activity from the environment to the economy (natural resources and ecosystem inputs), within the economy (products and waste to landfill) and from the economy to the environment (residuals). The final consumption of consumer durables is separately identified because in physical accounting the time of discard is important, not the time of acquisition of the goods. Controlled landfills are separately identified from GFCF as they are considered as part of the economy.

(b) *Economy-wide Material Flow Accounts*. These accounts provide an aggregate picture of the material throughput of an economy in terms of inputs (imports and extraction) and outputs (residuals in the form of waste, emissions to air and water and exports). The physical flows are disaggregated into products, ecosystem inputs, natural resources and residuals, but no disaggregation is provided by industry. Water is excluded in so far as it is not incorporated into products.

- (c) *MFA sub-accounts for specific materials or groups of materials.* They are an elaboration of the standard PSUT for the main groups of materials such as water, energy products, agricultural products, wood products, metals and other minerals.
  - (d) *Supplementary tables for other types of material flow accounts* are supply and use tables for physical service flows such as area use and transport services, regional material flow accounts, firm level material flow accounts, substance flow accounts and life cycle analysis.
11. The SEEA-MFA provides a set of standard tables, which shows the general format and minimum level of detail that countries should apply when implementing the material flow accounts. To support the understanding of the concepts, the SEEA-MFA includes a set of tables populated with a fictitious data set.
12. The SEEA-MFA does not provide advice on the implementation of the material flow accounts which will be addressed in supporting documents to be developed at a later stage. Furthermore, since the SEEA-MFA is written using the style of a standard, it does not contain country examples. However, a collection of country practices is included in the searchable archive posted on the UNCEEA website<sup>2</sup>.

### **C. Process and timetable for the preparation of the SEEA-MFA**

13. The United Nations Statistics Division (UNSD) has embarked on the drafting of the *System of Environmental-Economic Accounting for MFA* (SEEA-MFA) as part of its regular work programme following the recommendation by the UNCEEA at its second meeting.
14. In preparing the SEEA-MFA, UNSD will work in close cooperation with the London Group on Environmental Accounting, the Eurostat/EFTA Task Force on MFA which has updated its mandate to reflect this activity, the OECD WGEIO which has contributed to the methodological advancement of the MFA as well as other experts in NSOs and academia.<sup>3</sup>
15. A number of activities in support of the preparation of the SEEA-MFA have taken place since the previous UNCEEA meeting in July 2007. These include:
- (a) Hiring of an expert (part-time) to assist UNSD in the drafting of the SEEA-MFA.
  - (b) Issue papers on (a) terminology (b) consumer durables (c) residence vs. territory principle (d) waste, and (e) cultivated crops and trees were discussed at the 12th session of the London Group on Environmental Accounting (Rome, Italy, 17-19 December 2007). The London Group agreed that divergent terminology should only be introduced when absolutely necessary; to extend the asset boundary in the SEEA to include consumer durables; to

<sup>2</sup> <http://unstats.un.org/unsd/envaccounting/ceea/archive/Introduction.asp>

<sup>3</sup> “The Task Force on Material Flow Accounting will need to meet the following challenges: Follow up on and contribute to the international developments concerning the revision of the SEEA-2003 Handbook/standard including a separate SEEA-MFA manual and the publication of the OECD Guidance Manual” (Draft Updated Mandate for the Taskforce on Material Flow Accounting)

follow the residence principle; to consider the disposal of waste in controlled landfills as a flow within the economy. The London Group supported in principle the proposal to replace ecosystems inputs by the inputs from harvested crops and trees and changes in inventories; the London Group however recommended that additional work be done in particular to understand the implications for the standard tables and the balancing items as well as to improve the presentation.

- (c) The outcomes of the London Group were subsequently discussed at the Meeting of the Task Force on MFA (Luxemburg, 6-7 March 2008); the issue list for the drafting of the SEEA-MFA was presented.
  - (d) Drafting of chapters 1-4 of the SEEA-MFA.
16. Future activities in the preparation of the SEEA-MFA include:
- (a) Establishment of the drafting-group consisting of members of the Eurostat Taskforce as well as other MFA experts in NSOs and academia to assist UNSD in the drafting of the SEEA-MFA and in providing comments on draft chapters; review of chapters 1-4 by drafting group.
  - (b) Establishment of a website to facilitate the consultation on the SEEA-MFA.
  - (c) Drafting of chapters 5-7 of the SEEA-MFA, and review by drafting group.
  - (d) Drafting of a number of technical papers addressing some of the remaining issues on the research agenda for the SEEA revision for discussion at the 13<sup>th</sup> London Group meeting (Brussels, 29 September – 3 October 2008).
  - (e) Organization of an Expert Group Meeting on material flow accounts and statistics to discuss the complete draft of the SEEA-MFA.
  - (f) World-wide consultation on the new draft of the SEEA-MFA resulting from the discussion during the Expert Group Meeting. The consultation will involve countries and international organizations to ensure the SEEA-MFA universal relevance, applicability and feasibility of implementation.
  - (g) Submission to the UNCEEA for its recommendation to the United Nations Statistical Commission (UNSC) for adoption.
17. Table 1 below presents the timetable for the preparation of the SEEA-MFA.

**Table 1. Timetable for the preparation of the SEEA-MFA**

	2007	2008				2009				2010
	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
Inputs to the drafting	Recommendations on several issues by the London Group in (Rome, Dec.)	Updated issue list discussed at MFA Task Force Meeting (Luxemburg)	Consultant to visit New York (June)	Consultant to visit Eurostat / OECD						
Drafting	Expert hired by UNSD to draft SEEA-MFA		Completed first draft Chapters 1-4 (June)		Revised draft Chapters 1-4	Completed first draft of Chapters 5-7	Revised draft chapters 5-7	Revised SEEA-MFA on the basis of the EGM recommendations		
Consultation			UNCEEA reviews progress of work and process (NY, 26-27 June)	Set-up of drafting group Issue papers on MFA-related issues for discussion in the 13 <sup>th</sup> LG Meeting (Brussels, September)	Chapters 1-4 are circulated to the drafting group	Chapters 5-7 are circulated to the drafting group Report on progress of work to the UNSC by the UNCEEA Outcome papers on MFA-related issues for discussion to the UNCEEA	Expert Group meeting reviews SEEA-MFA	World-wide global consultation to review the revised SEEA-MFA		
Final draft SEEA-MFA								Final draft SEEA-MFA	Approval of the UNCEEA of the SEEA-MFA and recommendation to the UNSC	SC adoption

**D. Questions to the UNCEEA**

18. The UNCEEA may wish to express its views on the following:

- 1) *Does the UNCEEA agree with the scope and coverage of the SEEA-MFA [Section B]?*
- 2) *Does the UNCEEA agree with the process and timetable for the preparation of the SEEA-MFA [Section C]?*
- 3) *Does the UNCEEA agree in principle with the draft Annotated Outline of the SEEA-MFA [Annex I]?*

## Annex I

### Draft annotated outline

*Chapter 1: Introduction.* This chapter will introduce the objectives of the SEEA-MFA, describe the target audience, present the relevance of material flow accounts for policy-making including climate change and sustainable development policies, and describe the structure of the publication.

*Chapter 2: SEEA-MFA framework.* This Chapter introduces the SEEA-MFA accounting framework and explains the fundamental principles and features of the system. It will also present the material balance principle and the boundaries between the economy and the environment used in MFA and the links between the SNA/SEEA and the MFA. It will introduce the classification of physical flows and the accounting units.

*Chapter 3: General standard physical supply and use table (PSUT) and physical input-output table (PIOT).* The complete PSUT / PIOT shows the physical flows by economic activity from the environment to the economy (natural resources and ecosystem inputs), within the economy (products) and from the economy to the environment (residuals). The final consumption of consumer durables is separately identified because in physical accounting the time of discard is important, not the time of acquisition of the goods. Controlled landfills are separately identified from GFCF as they are considered part of the economy.

Although the general PSUT/ PIOT provides the conceptual framework for SEEA-MFA, its compilation is highly data demanding and resource consuming.

*Chapter 4: Economy-wide Material Flow Accounts.* This chapter provides standard tables for EW-MFA.

*Chapter 5: MFA sub-accounts for specific materials or groups of materials.* This chapter provides standard supply and use tables for the main groups of materials such as water, energy products, agricultural products, wood products, metals and other minerals. They are an elaboration of the standard PSUT for selected materials. In the case of water and energy, these tables will be fully consistent with water and energy accounts standard tables in the SEEA-W and SEEA-E, with the unit being tons instead of cubic meters or joules.

*Chapter 6: Application of material flow accounts.* This chapter provides examples of applications of material flow accounts. These include, for example, the derivation of hybrid indicators to monitor and evaluate policies such dematerialization, decomposition analyses of economic growth and material use; and scenario modeling including input-output analysis to estimate for example the indirect flows (or raw material equivalents) associated with imports;

*Chapter 7: Other types of material flow accounts.* This chapter provides a description of supply and uses tables for physical service flows such as area use and transport services.

The chapter will also discuss regional material flow accounts, firm level material flow accounts, substance flow accounts and life cycle analysis.

*Annex 1. Standard tables.* This annex will present the standard tables which are presented in the various chapters. The standard tables constitute the minimum data set that all countries are encouraged to compile. An Excel file with templates for standard tables and populated with the fictitious data set will be available on the UNSD web-site.

*Annex 2. Classifications.* This annex will present the classifications that are relevant for the compilation of material flow accounts: in particular the classification of physical flows (ecosystem inputs, natural resources, products and residuals).

*Annex 3. List of indicators.* This annex will present a list of indicators that can be derived from the SEEA-MFA. It will link the MFA indicators most commonly used with the SEEA-MFA standard tables.

*Glossary.* An agreed glossary of terms and definitions relevant for SEEA-MFA will be included.