REVISION OF THE SYSTEM OF ENVIRONMENTAL - ECONOMIC ACCOUNTS (SEEA)

United Nations Committee of Experts on Environmental Economic Accounting (UNCEEA)

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Reading guide for SEEA Revision Second Round of Global Consultation

Introduction

1. This document is intended to provide support for readers of the draft SEEA Central Framework that was released for global consultation in October, 2011. The SEEA Central Framework contains six chapters. First drafts of four of these chapters (Chapters 2-5) were released for global consultation over the period May – August 2011. The global consultation process sought views and comments on a range of specific technical questions as well as general feedback on the style and coverage of the draft chapters. Extensive comments were received from many countries and agencies. These comments have been considered and discussed by the Editorial Board for the SEEA Revision and appropriate changes have been incorporated in the current draft of the complete document.

2. This Reading Guide describes the more significant changes that have been introduced into the revised SEEA chapters since the draft chapters were released several months ago. It is hoped that this material will be of particular assistance to those readers who had read the earlier drafts. The Reading Guide also gives a brief introduction to the new chapters, Chapter 1 “Introduction” and Chapter 6 “Integrating and presenting the accounts”.

General changes and improvements

3. The extensive comments from over 50 different countries and agencies have led to significant improvements in the text. In particular, the comments highlighted areas where the text was not sufficiently clear, lacked technical precision or was inconsistent with text elsewhere in the drafts. To the largest extent possible all comments of this nature have been taken on board in the new draft. Consequently, there has been a significant tightening of the text in terms of its description of the relevant concepts and definitions.

4. At the same time, in general, there have been relatively few changes in underlying concepts and accounting approach. The cases where changes have been made, or cases where there has been ongoing discussion on particular issues, are described in the following sections.

5. A particular area of focus in the redrafted text has been a closer alignment between the tables included in the chapters and the surrounding/supporting text. It is hoped that this change will assist in explaining the concepts. At this stage, due to time constraints, no numbers have been included in the tables in the draft. It is intended that illustrative numbers will be incorporated in the version of the SEEA Central Framework to be submitted to the United Nations Statistical Commission (UNSC) in early 2012.
6. For the version to be submitted to the UNSC it is also intended that a separate glossary and a complete list of references will be included. Other material such as lists of tables, abbreviations and related supporting material will also be available at that time.
7. There are a number of different classifications and lists included throughout the SEEA Central Framework. In some cases more detailed supporting information that defines the relevant classes and boundary issues is available and, for this round of global consultation, a separate document containing relevant material has been released. In a number of other cases the information to explain the details of the classifications and lists has not been developed. Consequently, in these instances the classifications and lists should be considered as indicative and explanatory of the concepts.

Changes in Chapter 2

8. The major change in Chapter 2 relates to the changed definition of environmental assets. This is explained in more depth in the section on Chapter 5 below. In short, the distinction between individual environmental assets (such as mineral and energy resources, timber resources, aquatic resources) and ecosystems has been retained but the relationship between the two perspectives of environmental assets has not been articulated. An overarching definition of environmental assets covering both perspectives has now been included in Chapter 2 as well as most discussion on ecosystems and ecosystem services (see Sections 2.2 & 2.5.3).
9. There have been a range of changes to ensure alignment between the text in Chapter 2 and the more detailed discussion of particular concepts in Chapters 3, 4 and 5. This is particularly the case with regard to the physical supply and use table and associated flows (see Sections 2.3.2, 2.5.2).
10. There has been some minor restructuring of the chapter with a new section added to introduce combined physical and monetary presentations (Section 2.4); a re-ordering of the text on institutional sectors and enterprises (Sections 2.6.2 & 2.6.3); movement of the text on geographic boundaries to within the section on economic units (Section 2.6.4); and inclusion of new text on measurement units for statistical purposes in the section on economic units (Section 2.6.5).

Changes in Chapter 3

11. The major changes in Chapter 3 concern changes to the general structure of the physical supply and use table, changes concerning natural inputs, changes to residual flows, and changes to the description of flows of energy, water and materials.

12. With regard to the general structure of the physical supply and use table (PSUT) (Section 3.2.1 & Table 3.2.1) the column headings have been retitled to describe a flow rather than a mixture of flows and economic units as was previously the case.

13. Also, as part of making this change the treatment of households and governments has been clarified. Thus, consistent with the treatment in the SNA, household production (for example collection of fuelwood or water) is not included in the column for households but rather included in the relevant industry column. Only household final consumption and the generation of residuals from household final consumption are recorded in a separate column. For government, all output and associated inputs are recorded in the relevant industry columns and, since there is no government final consumption in physical terms, the column previously included for government has been removed from the PSUT structure (see paragraphs 3.28 & 3.29).

14. New entries have been included in the supply table under the column Accumulation. This column records the residuals generated from the scrapping and demolition of produced assets (e.g. demolition of buildings and scrapping of vehicles) (see also paragraph 3.108-111). Also in this cell the emissions from controlled landfill sites are recorded since they are emission associated with activity from previous periods.

15. With regard to natural inputs, further clarification has been added on the definition of natural resource inputs and the associated natural resource residuals (see paragraphs 3.43-51). Also the list of classes of natural inputs has been restructured and various classes renamed. In particular the term "ecosystem inputs" has been dropped. In its place is a new class called "other natural inputs" that covers inputs from air (e.g. oxygen, nitrogen) and inputs from soil (e.g. soil nutrients, carbon released from soil due to cultivation). The class "non-fuel energy inputs" has been renamed "inputs from renewable energy sources" (see Table 3.2.2 & paragraphs 3.57-61).

16. With regard to residuals it is clarified that residuals are not restricted to those emissions, discharges and discards that may negatively affect the environment but may be harmless. Thus emissions relate to the releases of substances and not only to the release of pollutants.

17. The definition of emissions has been revised to clarify that the measurement boundary is the release of substances to the environment (i.e. air, water (i.e. inland water system), or soil) from an establishment or household to the environment. At the same time, it is recognised that once released from an economic unit they may also flow to another economic unit (e.g. substances released in wastewater flowing to water treatment facilities). Gross releases are measured as the sum of emissions to the environment and releases of substances to other economic units (see paragraphs 3.86-92).

18. With regard to flows of energy, the PSUT now records the concept of energy residuals and also the flows of energy incorporated into non-energy products. The concept of energy residuals is broader than the concept of energy losses that was previously defined. Energy residuals includes energy losses and other residual heat generated from the end use of energy (e.g. burning of fuel in vehicles). Energy incorporated into non-energy products represents the use of energy from energy products to manufacture non-energy products (e.g. energy from petroleum products used in the manufacture of plastics). The incorporation of all flows of residual heat and energy incorporated into non-energy products permits a full recording of energy flows and the ability to maintain the input-output identity in the PSUT for energy at the individual industry or household level (i.e. in the columns of the PSUT) (see paragraphs 3.95-96, 3.147-149 & 3.172-175).

19. Also on energy flows a new aggregate, economic use of energy, has been included (see paragraph 3.181).

20. With regard to flows of water, the term "hydrological water consumption" has been used to refer to the indicator commonly used by water statisticians to reflect the quantity of water lost to the inland water system due to economic activity – known as "water consumption". In addition a new aggregate, the economic use of water, has been included defined in the same way as for the economic use of energy (see paragraph 3.221).

21. With regard to flows of materials some new text has been added on the measurement of nutrient balances (N, P, K) (see paragraph 3.229-231); it is clarified that air emissions from the cultivation of soil are in scope of the SEEA air emission accounts (paragraph 3.243); and a new section on accounting for emissions to water has been included (Section 3.6.4). Also, the definition of solid waste and the associated descriptions relating to solid waste products and residuals has been reworked (paragraphs 3.82-83 & 3.268-270). It is noted that defining solid waste on the basis of legal definitions (as proposed by a number of countries in the global consultation process) has not been adopted since this provides no independent concept for measurement purposes and, for countries without strong legal regimes in place regarding waste, a legally based definition might imply that no solid waste was discarded.

Changes in Chapter 4

22. The major changes in Chapter 4 concern the definition of environmental activities, the description of EPEA and EGSS, the measurement of environmental subsidies and similar transfers, the addition of text on tradable emission permits and a small restructuring of material at the end of the chapter.

23. Regarding environmental activities, on the basis of the comments received through the global consultation process, further discussion within the Editorial Board and discussion with the London Group at their meeting in September 2011, the definition and scope of environmental activities has been limited to economic activities whose primary purpose is either environmental protection or resource management. This therefore excludes from the scope of environmental activities natural resource use activities and activities

associated with the minimisation of the impact of natural hazards. These activities are now noted as economic activities that are related to the environment but not as environmental activities per se. Consequential changes have been made to the scope of the Classification of Environmental Activities (see Sections 4.2.2, 4.2.3, 4.2.4).

24. With regard to EPEA and EGSS, the feedback from the global consultation indicated that there was broad support for both sets of statistics but that there was a distinct lack of clarity in the descriptions of EPEA and EGSS. Thus there have been some important improvements made in the description of these two sets of statistics and the relationships between them although no changes in underlying concept and coverage have been made (Section 4.3).

25. The new draft refers to "environmental subsidies and similar transfers" and "environmental taxes" rather than to "environmentally related" subsidies and taxes as had been the case in the previous draft. (Section 4.4)

26. The global consultation process posed a question concerning the measurement of environmental subsidies and similar transfers. A number of responses highlighted that the question posed was not a conceptual one but rather a practical issue. It was concluded that the measurement of environmental subsidies often involves looking at information on a group of related transactions and identifying the primary purpose of a group of transactions may not be straightforward. This measurement issue has been clarified in the revised text (see paragraphs 4.136-139).

27. New text has not been included concerning the treatment of tradable emission permits (see paragraph 4.183-184). In line with the majority of responses to the SEEA consultation on the treatment of these permits in March 2011, it is confirmed that the intention is for the treatment in the SEEA to align with the treatment adopted by the governing bodies of the SNA. However, the process for finalising the SNA treatment (involving consultations with the Advisory Expert Group on National Accounts) had not reached a definitive conclusion at the time of the commencement of this round of global consultation on the SEEA. Consequently, the Inter-Secretariat Working Group on National Accounts (ISWGNA) has not been able to propose a final treatment for tradable emission permits that can be included in this draft of the SEEA.

28. Although no final treatment for tradable emission permits has been determined a table has been proposed in the draft (Table 4.4.3) that accounts for the quantity of tradable emission permits.

29. In terms of chapter restructuring, the former sections 4.4 and 4.5 have been merged and, within the new Section 4.4, text on environmental subsidies has been brought before the text on environmental taxes.

Changes in Chapter 5

30. The major changes in Chapter 5 concern the definition of environmental assets, the depletion of renewables, the measurement scope for mineral and energy resources, the

description of accounting entries in the case of split ownership of a natural resources, the boundaries and classifications relating to land, and the distinction between natural and cultivated timber resources.

31. In addition, new text has been added on accounting for soil resources (Section 5.7), the measurement of environmental assets in volume terms (Section 5.4.6) and a detailed description of discount rates (Annex A5.2)

32. The definition of environmental assets in the first draft of Chapter 5 proved quite problematic for many countries and respondents. Further discussion revealed an inherent difficulty in aligning, in complete theoretical terms, a concept of environmental assets from the perspective of ecosystems and also from the perspective of individual components (such as mineral and energy resources, timber resources and aquatic resources).

33. Consequently, the new approach is to define environmental assets broadly (this is done in chapter 2) and then to define ecosystems and ecosystem services on the one hand (also done in Chapter 2) and define relevant individual components on the other hand (Chapter 2 & Section 5.2). No attempt is made to reconcile these two perspectives because, although there are clear overlaps, there are sufficient and various anomalies that have proved resistant to resolution through alternative drafting. Using this new approach the focus of Chapter 5 is now on the definition and measurement of individual components within scope of the Central Framework, namely mineral and energy resources, land, soil resources, timber resources, aquatic resources (formerly fish resources), other biological resources and water resources.

34. Also with regard to defining environmental assets the distinction between physical and monetary estimates has been clarified and, the relationship between the measurement scope of the SEEA and the SNA has been articulated more clearly (Section 5.2.3).

35. The text concerning the definition of the depletion of renewable resources such as timber and aquatic resources has also been revised. While there was support for the broad notion of depletion of these resources in the first round of global consultation on Chapter 5, it was clear that the description of the concept and the references to maximum sustainable yield were not correct or appropriate. Further research and discussion on this difficult but important area has led to distinct improvements in the conceptualisation of depletion for renewable resources (Section 5.4.2).

36. The global consultation on Chapter 5 posed a question concerning the approach to the measurement of the value of mineral and energy resources. In that draft the proposed scope of measurement in monetary terms for the SEEA was broader than for the SNA and encompassed the value of all known deposits. Further discussion on this issue and discussion of the related topic of the use of the United National Framework Classification for Fossil Energy and Mineral Reserves and Resources 2009 (UNFC) has led to a change in the measurement boundary of mineral and energy resources in monetary terms. In the new draft the proposed scope is limited to those resources deemed to be commercially recoverable (Class A) following UNFC. This scope is likely to be broader than the commonly accepted understanding of the scope of the SNA (i.e. proven resources) but

seems in line with the actual definition of mineral and energy resources in the 2008 SNA (see 2008 SNA Chapter 10.179) (see SEEA paragraphs 5.186 & 5.199).

37. In the global consultation, a range of concerns were raised regarding the proposed accounting entries relating to the situation in which a natural resource was being used/extracted by an economic unit different from the legal owner. The most common case of this is likely to be in the extraction of mineral and energy resources where the legal owner is the government. The same core accounting treatment has been retained in the current draft but a clearer rationale has been provided with the focus being on ensuring that the estimates of depletion are accounted for appropriately in the balancing items for operating surplus and saving for each economic unit. Since depletion is not regarded as a cost against income in the SNA, the SNA itself does not provide a accounting solution in this situation (see Section 5.5.5).

38. For land, three primary issues have been considered. The new text clarifies the boundaries to be used for land accounts should relate to areas of land and inland water as has traditionally been the case. However, it is also recognised that the extension of this measurement boundary to incorporate coastal waters and areas within a country's Exclusive Economic Zone may be relevant, especially in connection with the management of use of those areas (e.g. in the management of fishing rights) (see paragraphs 5.243, 5.251 & 5.259).

39. The updated classification on land use has incorporated a new class to identify areas used for maintenance and restoration of environmental functions. It is noted distinguishing between those are areas to be classified to this class and areas classified to forestry may be difficult (see paragraphs 5.249-250, 5.254-255 & Table 5.6.1).

40. On land cover the previous text has been substantially simplified and now a straightforward listing of 14 land cover types all based on the FAO Land Cover Classification System (LCCS) have been described (see paragraphs 5.259-264).

41. On timber resources a range of measurement issues have been clarified. Of particular importance is the definition of the boundary between cultivated and natural timber resources. In the first draft of Chapter 5 this boundary was defined based on the classes of forest defined by FAO with timber resources in primary forests being considered natural and timber resources in other naturally regenerated and planted forests being considered cultivated. Further investigation of the definitions of these forests suggested that the proposed boundaries were not sufficiently aligned with the intent of the cultivated / natural distinction defined in the SNA and applied in the SEEA. In addition, the approach cannot be used in the case of timber resources found outside of forests for example in other wooded land. Thus the current text asks that the distinction between cultivated and natural timber resources be based on a range of factors including the extent of active management of the timber resources (see paragraph 5.352-356).

New chapters in the draft for the Second Round of Global Consultation

Chapter 1: Introduction

42. The first chapter introduces the SEEA providing an indication of the policy relevance of the SEEA and the general structure, purpose and context of environmental and economic accounting. The content and style is intended to suit a non-statistical audience and thus explain to those not intimately involved in the compilation or analysis of SEEA type data, the rationale for undertaking this type of statistical work. The chapter provides a brief outline of the components of the SEEA framework, its historical background and its place in the broader suite of statistical information and conceptual frameworks on environmental and economic measurement.

Chapter 6: Integrating and presenting the accounts

43. Chapter 6, “Integrating and presenting the accounts”, highlights the integrated nature of the SEEA framework and links the detailed measurement guidelines of chapters 3-5 with the presentation of information for users. Of particular focus in chapter 6 is the explanation of combined presentations of physical and monetary data and a range of examples of such presentations are described. The chapter also introduces the range of indicators that may be compiled from the SEEA dataset.