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**Progress Report SEEA Revision  
Work Program of the London Group**

Paper prepared by the Chair of the London Group

*(for information)*



**Statistics Netherlands**

Division of Macroeconomic Statistics and Dissemination  
National accounts Department

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**PROGRESS REPORT SEEA REVISION  
WORK PROGRAM OF THE LONDON GROUP  
JUNE 2008**

**THIRD UNCEEA MEETING**

**MARK DE HAAN  
CHAIR LONDON GROUP**

## BACKGROUND

Recently the UNCEEA Bureau decided to determine separate timelines for the finalisation of the three SEEA Volumes (I-III): the standard (I), the non-standardised accounts (II) and the policy uses and applications (III). First priority is given to the release of Volume I, the statistical standard. Volume I of the SEEA plays a critical role in establishing a worldwide SEEA implementation program, one of the key responsibilities of the UNCEEA.

However, examples of the most relevant policy applications of the accounts covered in Volume I should be worked out simultaneously with the preparation of this volume. These examples are needed to give strong guidance to the uses of the standardised accounts such as providing key indicators on sustainability and climate change policy issues. At a later stage these policy applications of Volume I will be presented as part of Volume III. Till then it seems recommendable to present these illustrations in a separate working document to be released together with Volume I.

A research agenda and time table for the SEEA Volume II has not yet been developed. This Volume will include the more experimental parts such as ecosystem accounts and issues related to valuation of degradation. As a starting point, it seems very important that the UNCEEA agrees on the main principles of revising the current SEEA chapters 9 and 10 on valuation techniques and adjustments to the flow accounts respectively. Without such clear guidelines the revision process of Volume III may be very difficult to manage. So far this area has been more the domain of scientific research than that of official statistics. The UNCEEA may consider forming a special group of experts to advise the UNCEEA on a realistic work program in this area in terms of required resources and available time.

For the purpose of developing a feasible time table for the finalisation of Volume I and the most urgent parts of Volume III, this report provides an overview of the progress made by the London Group in advising the UNCEEA on the list of 23 revision issues and 6 structure questions. In addition, the paper provides a timeframe within which this review of Volume I issues by the London Group is expected to be finalised.

Following the decision of the UNCEEA at its 2<sup>nd</sup> meeting in 2007 on the new structure of the SEEA, the revised SEEA Volume I is expected to include the following set of interlinked accounts. The UNCEEA has not yet made a final decision on the order of their presentation in the revised SEEA.

- a. *Physical flow accounts* in the form of physical supply and use tables for materials (MFA), energy and water.

These accounts will also include emission accounts and will expose linkages of physical flow accounts to the monetary accounts of the SNA, the so-called hybrid accounts.

- b. *Accounts for economic activities, products and transactions related to the environment.*

These monetary accounts include environmental protection accounts,

natural resource management expenditure accounts, environmental taxes and subsidies accounts and accounts expressing the economic importance of permits to use the environment. In addition, a decision must be made on whether a complete system of environmental goods and services accounts can be adopted in Volume I.

- c. *Asset accounts* in the form of complete balance sheets for the following natural resources, mineral and energy resources (EA11), water resources (EA13) and biological resources (EA14). At this stage it is still uncertain if soil resources (EA12) can be meaningfully defined as an independent asset in Volume I of the SEEA. The asset accounts will be shown in terms of the most relevant physical units as well as in money units. The London Group has not yet decided on the location of ecosystem accounts and ecosystem services accounts. At this stage is expected that these accounts will become part of volume II (the non-standardised accounts).
- d. *Natural resource depletion accounts*, in the form of current accounts exposing the depletion adjusted balancing items (product, income and saving).

These accounts will be presented in close connection to the balance sheets for natural resources. The SEEA standard will include a full sequence of current accounts in which the (net) balancing items are adjusted for natural resource depletion (in addition to consumption of fixed capital).

Generally, this subset of environmental accounts is considered sufficiently mature to be developed into a standardised set of accounting recommendations. As part of the Volume I revision process, a list 23 conceptual issues was identified. At this time it is expected (but not entirely sure) that 3 of these issues address parts of the SEEA that will be presented in Volume II: (5) Environmental industries, (20) Soil degradation and (22) Land and ecosystem accounts.

In addition 6 key areas were identified in which the SEEA-2003 structure needs to be improved: (i) ordering of chapters, (ii) presentation of hybrid accounts, (iii) streamlining of text, (iv) update SEEA-land dataset, (v) defining SEEA-indicators and (vi) set up of Volume III).

The progress made by the London Group in reviewing each of these conceptual issues and structure questions is reflected in the following section. It is important to notify that some issues are substantial in terms of complexity while others will need only little attention. For example, some issues address areas where the revised SEEA needs to be aligned with the revised SNA.

The final section of this paper provides a time table for future work.

## REVIEW OF REVISION ISSUES: CURRENT STATE OF PLAY

### *Physical flow and hybrid accounts*

#### *Issue 1 - Economy Wide Material Flow Accounting (MFA)*

In recent years guidelines on material flow accounting have been developed by OECD and Eurostat in parallel with the SEEA. Chapter 3, Section D.5, of the SEEA-2003 already includes a reference to linkages of the SEEA physical flow accounts with MFA. In the revised SEEA MFA will be presented by physical supply-use tables for materials. The 11<sup>th</sup> London Group meeting in Johannesburg had a discussion on the most important differences between MFA and the physical flow accounts of the SEEA. In the subsequent Rome meeting the following issues were discussed by the London Group to overcome these differences:

- Harmonisation of terminology;
- The use of territory versus resident principle;
- Harmonisation of system boundaries with respect to agricultural production and cultivated trees;
- Treatment of waste disposed on controlled waste dumping sites;
- Recording of consumer durables (as stocks).

Terminology issues are largely resolved. The decision was taken that terminology divergent from SNA should only be introduced when absolutely necessary.

The London Group recommended that, in consistency with other parts of the SEEA, MFA should follow the residence principle. It was also considered important to develop bridge tables linking the two principles.

Regarding agricultural production and cultivated trees, the London Group supported the proposal that in the case in which it is difficult to estimate ecosystem inputs, they should be replaced by the inputs from harvested crops and trees. A follow up paper will highlight all implications for the standard tables. In the case of crops and trees the MFA considers input into the economy harvested crops and trees. This is not in line with the production boundary of the SNA and the SEEA. The London Group recommended that a presentation that does not violate the production boundary of the SNA while allowing to derive MFA aggregates should be developed.

Further the London Group agreed with the proposal of considering the disposal of waste in controlled landfills as a flow within the economy. This recommendation is in line with the SEEA-2003.

Finally, the London Group considered it useful to extend the SNA asset boundary in the SEEA to include consumer durables. This is in response to the fact that there is a time lag between the consumption and the residual flows generated from using up these durable goods.

*Issue 2 - Classification of flows and their recommended unit of accounts*

The London Group agreed in its Rome meeting to set up the physical flow accounts in the revised SEEA according to three, sometimes interlinked, physical supply and use tables: one for materials (MFA including emissions and solid waste), one for energy and one for water. Each table will have its own accounting unit (i.e. weight units, calorific units, volume units).

The existing SEEA classifications for natural resource and ecosystem inputs, product flows and residual outputs will be updated on the basis of this new set up. Special attention will be given to the overlaps between the three tables with the purpose of having one unified classification for physical flows to the extent possible. The London Group suggested that in addition to flow classifications, so-called purpose classifications must be developed. This in order to specify the kind of use of materials (for energy purposes e.g. biofuels), water (cooling) and energy products (for energy or non-energy purposes) which is crucial for identifying environmental impacts. The outline of a full classification scheme will be discussed at the upcoming London Group meeting. Details can be filled in after all issues on MFA, energy and water have been resolved.

*Issue 3 - Linking energy flow accounts, energy balances and energy statistics*

The SEEA will include standard supply-use tables for the energy flow accounts and will also present the link between energy balances and energy accounts. To this end, the London Group is working with the Oslo Group through the Drafting Group being established to assist UNSD in the drafting of the SEEA-E.

*Issue 4 - Renewable energy resources*

This issue has two components, the representation of renewable energy resources (e.g. hydropower, solar energy, bio fuels) (4a) in terms of flows and (4b) in terms of stocks or assets. First, the supply-use tables for energy need to address renewable energy resources. It is expected that for this purpose modifications are needed in the standard (CPC) classification. Certain product groups such as wood or recycled waste may be used as energy source or otherwise. The coverage of renewable sources is part of the research agenda of IRES.

Second, the SEEA asset accounts need to address the asset values of renewable energy resources (e.g. hydropower, windpower). For this purpose the current SEEA-2003 asset classification needs to be updated. One conceptual issue that needs to be solved is whether renewable energy assets (wind, solar, hydro) can be identified independently from the infrastructure needed to exploit these kinds of energy resources. The discussion on measuring renewable resources in terms of stocks is on the research agenda of the London Group but has not yet started.

***Accounting for environmental activities, products and other environmental related transactions***

*Issue 5 - Environment industry*

Clarification papers presented in Johannesburg and Rome showed that the application of accounts for goods and services industry is not widespread. A final decision must be made on the location of these accounts (Volume I or II) in the revised SEEA.

*Issue 6 - Environmental taxes*

At the 12<sup>th</sup> meeting the London Group agreed that an issue paper proposing definitions for environmental taxes and subsidies should be prepared for discussion at the next London Group meeting. The paper will start from the general definition of taxes in the 1993 SNA Rev.1 and the IMF Government Finance Statistics Manual (2001) followed by comparing the OECD definition of environmental taxes. The definition of environmental taxes should pay special attention to the distinction of taxes with fees and permits to use natural resources (this latter point is strongly related to issue 8).

*Issue 7 - Environmental subsidies*

A similar line of work as for environmental taxes will be followed for environmental subsidies.

*Issue 8 - Permits to access the resources (e.g. fishing and water rights) and emission permits*

The 1993 SNA Rev.1 includes in Chapter 10 and Chapter 17 discussions on the treatment of permits, leases and licences. An issue paper elaborating the 1993 SNA Rev.1 treatment for the various natural resources and the most common contractual arrangements will be prepared for discussion in one of the upcoming meetings of the LG.

*Issue 9 - Classification of natural resources management expenditure*

The London Group considers the development of the classification of natural resources management expenditures as an important issue to be addressed during the SEEA revision for inclusion in the standard. Current developments in this area seem promising, especially with regard to a classification of resource use and management expenditure accounts (CRUMA) in full consistency with the Classification of Environmental Protection Activities (CEPA). An issue paper will be prepared discussing the underlying principles of the classification of resource use and management expenditures for the various resources (e.g. water, fisheries, forest, ecosystems, etc.) and its link with CEPA and other functional classifications (e.g. COFOG).

***Asset accounts***

*Issue 10 - Classification of assets*

A revised classification of asset has been discussed by the London Group and will be updated now that the SNA-2008 classification has been finalized.

*Issue 11 - Definition of physical reserves*

This issue was discussed in Johannesburg. At that moment it seemed that international developments in this area (UNFC and other bodies) needed to be taken into consideration. Later on these developments appeared less significant. The London Group recommends that the definition in SEEA should refer to proven as well as probable reserves. This is a broader definition than the SNA definition of physical reserves (cf. UNCS version, SNA1993Rev1, Par. 10.172). As part of the SEEA-E, the UNSD will be

in contact with the UNFC with the purpose of arriving at a final decision on the most appropriate definition.

#### *Issue 12 - Valuation of asset stocks*

In the absence of market prices, the London Group (and the UNCEEA) identified the net present value method as the second best preferred valuation method to value asset stocks. This is in line with the recommendation of the SNA-2008. The London Group also agreed that mineral exploration should be identified, as in the SNA, as a selfstanding fixed asset apart from the mineral asset. In the SEEA mineral assets will be regarded as non-produced.

The revision issues list contains under this item a range of more practical points (e.g. rates of return to capital, determining resource rents of different assets in case of joint production, volatility of resource rents, negative resource rents) which need further consideration. Most of these issues are not so much of a conceptual nature but need to be picked up in the subsequent process of developing SEEA implementation guidelines.

#### *Issue 13 - Recording of natural resource depletion*

The SEEA-2003 provides multiple options for measuring natural resource depletion. The standardised measurement of national income and saving adjusted for natural resource depletion is one of the objectives of the current SEEA revision. For this purpose the London Group has made progress in its last two meetings to narrow down the accounting options in this area. Within the Group consensus was reached on the following issues:

- i. identification of the income element of the resource rent;
- ii. identification of mineral exploration and mineral deposits as independent assets;
- iii. recording of additions and subtractions from resource stocks;
- iv. recording of asset ownership (i.e. division of ownership between the legal owner, usually the government and the mining industry’;
- v. recording of depletion.

The preparation of the SEEA-E has led to a number of subsequent questions on the preferred accounting recommendations. It is expected that after the London Group meeting in Brussels final outcome papers can be submitted to the UNCEEA.

It is important to notice that this set of accounting recommendations deliberately diverges from standard national accounting practice. In the SEEA net national income and net saving figures will be adjusted for natural resource depletion. Therefore the UNCEEA may decide to set up a broader consultation process with the aim of consulting the national accounting community on these conceptual issues. This may help to reach a broad consensus on these important accounting recommendations.

#### *Issue 14 - Determining depletion of renewable resources*

Extraction of renewable resources is usually (partly) counterbalanced by natural growth (or accumulation). In measuring meaningful depletion estimates, the process of natural resource growth needs to be taken into consideration. A paper on this issue was discussed at the last (12<sup>th</sup>) London Group meeting. The Group principally agreed that the asset value increase due to natural growth should be accounted for as ‘other non-market output’ and subsequently as part of generated income. However, the Group wants to take a closer look to the consequences of this SEEA accounting convention. This accounting

recommendation is deliberately not according to the standard SNA. The UNCEEA may consider including these SEEA accounting recommendations on measuring the depletion of renewable assets in the above mentioned consultation.

*Issue 15 - Decommissioning costs*

The SEEA needs to be updated to reflect the changes in the 1993SNA Rev.1.

\*) *Expectedly this issue may need a clarification paper only.*

*Issue 16 - Treatment of water in artificial reservoirs as a produced asset*

The treatment of artificial reservoirs and related infrastructure such as dams has a clear similarity with issue 4b on measuring renewable energy resources as independent assets apart from the complementary infrastructure. In line with the definition of cultivated assets in the SEEA and the revised SNA water in the reservoirs should be considered a produced asset. However, the accounting implications have to be carefully considered. For example, should water inflow in artificial reservoirs be considered as capital formation? No progress has so far been made in this area.

*Issue 17 - Treatment of illegal tapping*

The SEEA presents two options on how to treat illegal tapping: one in line with the SNA treatment according to which illegal tapping is treated as part of other changes in volume; the other in which illegal tapping is allocated to the user of the water as intermediate or final consumption. The London Group has to discuss which option to recommend.

*Issue 18 - Valuation of water*

This is part of the bigger issue of valuation of natural resources.

*Issue 19 - Land valuation*

This is part of the bigger issue of valuation of natural resources.

*Issue 20 - Soil*

The London Group discussed in Rome a clarification paper on soil. The paper reviewed the economic and ecological significance of soil and soil degradation. As a follow up, the London Group needs to discuss the following questions:

- Should soil be classified, as in the current SEEA-2003, as an independent asset (EA.12) or is its value indispensably connected to land (or ecosystems)?
- What are the possibilities of measuring soil depletion in a similar way as depletion of other natural resources (i.e. as the future losses in services derived from land)?
- Should the SEEA account for all possible carbon sources and sinks including soil (and forests) in a similar way as the IPCC greenhouse gas inventory?

An issue paper on these issues will be discussed at the next London Group meeting.

*Issue 21 - Forest accounts*

The London Group recommends that the classifications of forest and forestland in the revised SEEA are aligned as much as possible with FAO definitions. Further, the importance of climate change as a key policy theme requires that the forest classification is aligned as far as possible with the IPCC classification. Valuation of forest must be further examined especially in light of emission trade agreements including forests as sink. A concrete proposal will be discussed in a next London Group meeting.

#### *Issue 22 - Land and ecosystems*

The London Group discussed at its last meeting several issues on ecosystem accounting. Ecosystem accounts are a rapidly evolving area in Europe. As a follow up, the London Group will discuss at one of its future meetings, (a) a proposed classification of land cover/land use and (b) a typology of ecosystem services, leading to a concrete proposal of presentation of ecosystem accounts in the SEEA. Although no formal decision has yet been taken, it is expected that ecosystem accounts will be presented in Volume II of the revised SEEA. This gives this issue a lower priority.

#### *Issue 23 - Fish resources*

A complete inventory of all open issues connected to accounts for fish resources is still missing. However, the London Group started to discuss the issue of fisheries accounts based on recent work carried out in New Zealand. Fish stock values can be derived from issue values of fish quota. The London Group accepted such a method as a meaningful and practical solution to determine the value of fish stocks. However, this method cannot be applied for countries that do not manage their fish stocks through the allocation of quota. Before such accounting recommendations can be adopted in the revised SEEA, the London Group needs to investigate a comparability study in which the results derived from quota values are compared to the 'standard' resource rent calculations (i.e. by subtracting the capital services of fixed assets from the gross operating surplus of the fishing industries) as generally recommended for renewable natural resources. Not all countries will have the possibility of using quota values.

### ***SEEA Structure questions***

#### *Question i - Ordering of chapters*

A large majority of London Group members who responded to the written consultation in June 2007 argued in favour of not changing the current SEEA- 2003 ordering of chapters. The UNCEEA found it difficult to agree on a final recommendation without having a more in-depth discussion of the fundamental questions driving the SEEA revision. The UNCEEA requested the London Group to proceed with the current structure of flows before stocks. Since this strategic discussion takes place in the UNCEEA, at this point no further action from the London Group seems to be required.

#### *Question ii - Presentation of hybrid accounts*

The presentation of hybrid accounts in the SEEA was also subject to the written consultation of London Group members. Last year, the UNCEEA requested that this issue needs to be further discussed by the London Group on the basis of a concrete proposal.

*Question iii - Streamlining*

The London Group endorsed the streamlining of the SEEA-2003 by removing country examples in the text and by placing relevant parts of specific resource accounts (now presented in chapter 8 of the SEEA-2003) in the relevant chapters. Input from the London Group on streamlining will be needed at a later stage to support the editor in redrafting the SEEA chapters. This is not a first priority.

*Question iv - SEEA-land dataset*

It is expected that input from the London Group concerning the SEEA-land dataset update will be needed at a later stage to support the editor in redrafting the SEEA chapters. This is not a first priority.

*Question v - Presentation of indicators*

The London Group discussed a gross list of main aggregates that could be derived from the standard tables in the revised SEEA Part I. These accounting aggregates should provide the linkage between detailed accounts and SEEA indicators. The London Group agreed in its last meeting to explicitly define key accounting aggregates in the standard tables of the revised SEEA Volume I. However, indicator building (such as resource productivity indicators) is typically subject to Volume III of the revised SEEA, stressing the policy relevance of the accounting aggregates. A concrete proposal of a set of key aggregates that should be explicitly exposed in the standardized accounts (Volume I) will be discussed at the next London Group meeting in Brussels.

*Question vi - Organization SEEA Volume III on Applications and policy uses*

The London Group discussed in its last meeting different options to organize the Volume III of the revised SEEA on Applications. A detailed paper on the general structure of Volume III based on recommendations as expressed by the Group will be prepared for discussion at the next London Group meeting. As mentioned in the introduction of this paper, this discussion needs to be focussed on the policy uses of Volume I. This has the highest priority.

## **FUTURE OUTLOOK**

The table presented below provides an overview of the progress made so far by the London Group in its review of revision items. Some issues have already been subject to detailed discussion. However, there are a number of issues, especially those related to specific assets, which have not yet been given attention in either the Johannesburg or Rome meeting.

For each issue in the list outcome papers will be submitted to the UNCEEA. Of course it may be that, based on findings of the UNCEEA and consultations of other expert groups, some elements of these issues are at a later stage brought back to the London Group for further clarification.

The overview indicates that at least three additional London Group meetings are needed to close all issues. This means that, in addition to the 13<sup>th</sup> meeting scheduled for end September this year, two additional meetings are needed in 2009 to close at least all conceptual discussions on Volume I. In the table, these additional two meetings are scheduled for March and September next year. The ultimate finalisation of Volume I depends also on other stages in the revision process such the redrafting of text and tables and the subsequent consultation process.

The agenda of the next meeting is largely based on the list of actions as agreed at the last Rome meeting. Of course the agendas of following meetings are at this stage less definite. The 15<sup>th</sup> meeting is largely reserved for closing the most complex and substantial issues. For example, it is expected that the consultation process of depletion accounting issues may lead to a number of questions that need to be brought back for consultation to the London Group. This may also be the case for the energy related issues that are also being discussed in the Oslo Group. The classifications can only be finalised after related conceptual issues have been brought to an end. Therefore classifications of physical flows and assets are also expected to appear on the agenda of the 15<sup>th</sup> London Group meeting.

**London Group SEEA Revision Progress Report June 2008**  
**Issues concerning the revised SEEA - Volume I**

	11 <sup>th</sup> LG	12 <sup>th</sup> LG	13 <sup>th</sup> LG	14 <sup>th</sup> LG	15 <sup>th</sup> LG
	2007 Mar	2007 Dec	2008 Sep	2009 Mar	2009 Sep
1 MFA					
2 Classifications - physical flows					
3 Energy*					
4a Renewable energy - flows*					
4b Renewable energy - stocks					
5 Environment industry (x)					
6 Taxes					
7 Subsidies					
8 Permits					
9 Natural resource management					
10 Classifications - assets					
11 Definition physical reserves					
12 Valuation of asset stocks					
13 Natural resource depletion					
14 Depletion of renewables					
15 Decommissioning costs					
16 Artificial water reservoirs					
17 Illegal tapping					
18 Valuation of water					
19 Valuation of land					
20 Soil (x)					
21 Forest					
22 Land and ecosystems (x)					
23 Fish					
i Ordering of chapters					
ii Hybrid accounts					
ii Streamlining	<i>Must be picked up as part of de editorial process</i>				
iv SEEA-land dataset	<i>Must be picked up as part of de editorial process</i>				
v Aggregates and Indicators					
vi Structure Volume III					

 = discussed issues

 = issues scheduled for discussion

(x) = (expectedly) not a first priority

\* = The Oslo Group on energy statistics is leading this issue. The London Group only looks at how energy flow accounts must be presented in the SEEA