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**Coherence and consistency issues for the
revised SEEA Volume 1**

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meeting**

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A. Background

1. The revision of the 2003 System of Environmental and Economic Accounts (SEEA-2003) is being undertaken in two main phases (i) the identification of key issues for the revision and subsequent investigation and outcomes for each issue; and (ii) the drafting of chapters based on the previous text and the outcomes from the issues based phase.
2. For the revised SEEA phase (i) has been conducted over the past 4 years on 21 issues and we are now close to finalising outcomes for each issue. We are aiming for signoff from UNSC on each issue in February 2011. Phase (ii) is about to commence noting that it will be possible to start this phase before UNSC signoff.
3. Ultimately the final revised SEEA aims to be an internally consistent document that defines an accounting framework for organising information about environmental and economic issues. Global consultation on the drafts of the revised SEEA will therefore need to actively raise and discuss issues of coherence and consistency within the manual.
4. At the same time, the work that has been undertaken on the 21 key issues has been advanced with each issue being considered relatively independently. This has been both sensible – such that the best proposals can come forward unconstrained, and also practical in the sense that each issue was investigated by an individual or small group who were experienced in the area thus spreading the resource load, rather than all areas being investigated by one person.
5. The drawback of this approach to investigating the 21 issues is that there is no guarantee that the proposed recommendations and outcomes will be consistent across the various issues. As a result, as we near the end of the issue phase, we need to start considering the coherence and consistency across the issues such that the revised SEEA can be as internally consistent as possible.
6. The consideration of coherence is a fundamental remit of the SEEA Editor but will require input from a range of experts including the SEEA Editorial Board, the London Group and ultimately the broader environmental accounts community who are being consulted through the revision process.
7. This paper outlines a range of coherence and consistency issues that the editor has found after working through various issues over the past 5 months. The majority relate to inconsistencies in the outcomes and recommendations between the 21 different issues. Some relate to inconsistencies between the outcomes for the issues and the parts of the SEEA-2003 that have not been the subject of investigation in the past 3-4 years. There seems little doubt that some of the inconsistencies are long-standing ones but it may be that some are only being revealed as we seek to draft a document with singular recommendations on all topics.
8. It is unlikely to be the case that all of the consistency issues raised in this paper will be resolved or even fully discussed in the time available at the London Group meeting. Nonetheless it would be helpful if, from the meeting, there was increased awareness and understanding of the issues and, potentially, some suggested ways forward. It may also be sensible to create the ability for London Group members to continue to contribute their thoughts on the consistency issues as responses to this paper on the restricted site for London Group members.
9. Finally, it is most certainly the case that there are other issues of consistency and coherence that are not described here that London Group members are aware of. It is also the case that as drafting commences more consistency issues will be found. It would be useful from an editing perspective if any known or suspected consistency and coherence issues were raised as quickly as possible such that decisions can be taken as early as possible on how to proceed.
10. The paper has grouped together similar coherence issues into those relating to terminology, those relating to environmental activities and those relating to accounting for assets. No specific issues concerning consistency between classifications are raised in this

paper as to do so would prematurely invite discussion on topics that are yet to have more formal proposals come forward. Nonetheless it is recognised that consistency and coherence issues will become far more obvious in the context of classifications than almost anywhere else.

B. Issues related to terminology

Choice of terms for “assets”

11. Even labelling this section is fraught with difficulty. There are such a wide variety of terms and indeed, combinations of terms, that are used to describe the assets and related entities in the SEEA that knowing where to start on this consistency issue is confusing.

12. The following are the main terms that I have come across to describe relatively similar and related concepts. It is noted that in some cases the terms have different meanings but often these different meanings are encapsulated in different terms for different people and, in aggregate, the number of terms exceeds the number of concepts. It is recognised that the following list of terms is not synonymous but we will need to determine appropriate and singular definitions and terms to aid understanding of the SEEA.

- Assets
- Capital
- Resources
- Balances
- Stocks
- Levels
- Inventories
- Fixed assets
- Fixed capital
- Capital assets
- Capital stock
- Natural resources
- Natural capital
- Natural resource assets
- Stocks of natural resource assets
- Environmental assets
- Produced and non-produced assets

13. Some of these terms people will recognise as being from the 2008 SNA. Unfortunately while the terms in the 2008 SNA are well defined they are not overly consistent in terms of use of language, largely for historical reasons. For example the term “fixed capital” is widely used. Fixed capital is a subset of produced assets (the other component being inventories) and while the term can be explained, the use of the term “capital” is not helpful. More useful perhaps would be the term “fixed asset” in a logical sense – and indeed this term is often used – for example, the “capital stock is the stock of fixed assets”.

14. The aim here of course is to arrive at some careful choices for SEEA purposes. In one paper I saw three different terms for the same intended asset scope in one paragraph. The English language is indeed flexible but in this case the flexibility is not helpful for explanation (in English or another language) or common understanding.

15. Early in the drafting process some suggested terms will be proposed and used as consistently as possible being mindful of usage in the SNA and also historical usage in other areas. A starting principle might be that there be one term for each concept.

Choice of terms for “environmental”

16. This should perhaps be one of the more straightforward areas given the subject matter of the SEEA but there are a few terms that have been used in different contexts to describe whether a particular statistic is environmental or not. In some cases there is a legitimate reason for the use of different terms but in other cases it is not so clear.

17. There are three main terms that I have seen: environmental, environmentally related and environmentally motivated. There are others such as environmentally beneficial and environmentally damaging that may also deserve a better explanation. In general terms I think the use of the term environmental is usually sufficient but we are likely to need some additional terms to distinguish different situations. In this situation historical and developing usage will be an important issue to consider.

Choice of terms across environmental fields

18. A general comment on terminology is that because environmental accounting crosses so many fields of endeavour – the environment is not just one field – terms have developed naturally in all of the fields. There is therefore a general question as to what extent common terms are used in the SEEA for the same concept in different field. For example there are a variety of terms for the use of natural resources including extraction, harvest, catch, abstraction, capture, exploitation, etc. For experts in each field these terms have specific meaning. In defining general concepts we need to be aware of how general terms might be applied in individual circumstances.

C. Issues related to environmental activities

Definition of environmental activities

19. SEEA-2003 defines reasonably clearly a range of environmental activities. These are

- Environmental protection activities
- Natural resource management and exploitation activities
- Environmentally beneficial activities
- Minimisation of natural hazards (SEEA-2003, paragraph 5.26)

20. There has been no discussion to date to my knowledge to suggest that this range of activities should be changed in the revised SEEA.

21. However, in general usage the term environmental activities has come to mean different things to different people. Almost by default activities associated with the minimisation of natural hazards are excluded – exactly what has driven this is unclear although one might argue for its retention with the widely suggested increasing incidence of natural hazards and the related demand for information on the impact of climate change.

22. More significantly there seems to have been a shift away from consideration of resource exploitation activities (generally now referred to as resource use) as being environmental activities. Indeed the notion that coal mining should be considered an environmental activity at first glance seems inconsistent with the inclusion of environmental protection as an environmental activity.

23. It is noted that SEEA-2003 itself is a little unclear on this issue since just one paragraph prior to the list above being presented the following sentence appears which seems to exclude resource use activities.

“Environmental activities are those which reduce or eliminate pressures on the environment and which aim at making more efficient use of natural resources.” (SEEA-2003, paragraph 5.25)

24. At the same time some countries have compiled RUMEA accounts which cover both resource use and resource management and also a classification for resource use and resource management activities (CRUMA) is being proposed for the revised SEEA.

25. In the revised SEEA we will need to reach a common understanding on the appropriate general boundary of environmental activities.

The definition of main purpose

26. Presuming that a definition of environmental activities can be resolved and appropriate classifications developed, there is another consistency issue around determining the boundaries for when an activity, expenditure or other transaction would be considered environmental.

27. The general approach is to determine whether the main purpose of the activity is environmental. However a range of variants have been developed on this front which seem largely dependent on the variables and statistics of interest. The following are a few examples of the issue:

For Environmental Protection Expenditure Accounts the environmental status is determined from the perspective of the purchaser of the good or service.

For the Environmental Good and Services Sector (EGSS) the environmental status is determined in the first instance by the specific characteristics of the good, technology or service and in boundary cases by the purpose/intentions of the producer. In no case is the intention of the purchaser considered in determining the environmental status.

For Environmentally related subsidies the environmental status is determined based on whether the payer (the government) intends for the subsidy to be for environmental purposes. However, included in environmentally related subsidies are (i) those subsidies that have a main purpose that is environmental and (ii) those subsidies that have an environmental purpose as a subsidiary (ie not main) purpose.

For environmentally related taxes the environmental status is not based on a consideration of purpose at all. Rather the tax bases are examined to see which ones have a "...proven, specific, negative impact on the environment."

28. Two final points on this issue. First, in general the assessment of whether a purpose is environmental or not is done by considering whether the purpose is within scope of the environmental activities as defined. In this sense something having a purpose of environmental protection should equally be considered to be having a purpose of undertaking an environmental protection activity. In this regard there is a direct link between the scope of the definition of environmental activity and the determination of the environmental purpose. In some cases this direct link does not appear to be as clear as it should be.

29. Second, it seems generally the case that the issue of the potential or actual environmental effect of any activity or transaction is not considered in the determination of the environmental status. The general logic is that many and varied activities will have environmental effects but not all of this activity should be considered environmental. At the same time even if the purpose is environmental there is no guarantee of an environmental effect occurring.

30. Based on this discussion it seems clear that the use of the term environmental or environmentally related does not mean the same thing in different situations. This may be quite appropriate but we should be making such a choice consciously to avoid misinterpretation.

D. Issues concerning accounting for assets

Accounting for resource use

31. One of the key motivations behind SEEA is to ensure that the use of the environment as a fundamental input into economic production is appropriately measured. This can be considered in both physical and monetary terms. When done in monetary terms the logical starting point is the measurement framework presented in the SNA.

32. Unfortunately the SNA in large part assumes that there is no cost associated with the use of natural resources and since there are generally no monetary transactions involved – we don't pay money to the environment – the accounting framework that has developed does not allow for the inclusion of such transactions – even if they can be observed in physical terms.

33. Nonetheless, the SNA has a rigorous framework for accounting for produced assets which are used up over time (depreciated) and hence there seems a strong potential for the same logic to be extended to account for environmental assets by recording them as being used up over time. In very general terms this is the attempt that is being made in the measurement of depletion.

34. SEEA-2003 developed a number of options for measuring and accounting for the depletion of environmental assets and one of the key tasks of the London Group was to consider the measurement of depletion for a number of different asset types – non-renewable resources, renewable resources and soil. As well, there were issues that considered the more general question of accounting for resource use such as the treatment of water in artificial reservoirs, the treatment of losses, emission permits and renewable energy.

35. While discussion on these issues is yet to be concluded, it is clear that accounting for depletion and resource use is being considered differently for different asset types. The following are broad characterisations of some of the potential individual issue outcomes:

For non-renewable resources the resource use should be recorded as depletion in the production and income accounts

For renewable resources the resource use should be recorded as consumption of natural capital and an amount equal to the growth in the resource (since it is renewable) should be added to production as non-market output.

For soil the resource use should be determined based on the decline in the productive capacity of the soil due to its use in production which will be a combination of soil depletion and soil degradation.

For water in artificial reservoirs the proposal is to expand the production boundary such that resource use effectively become a change in inventories.

For emission permits no decision has been made but in general terms the cost of emission permits seems likely to be treated as a tax.

36. Each of these particular treatments may be appropriate for each resource and transaction concerned but in accounting terms if all of the treatments are adopted it will become quite difficult to quickly isolate a more aggregate sense of the cost of resource use.

37. Making this situation even more complicated is the treatment of actual payments for resource use that are recorded in the SNA. The best examples are royalty payments for extraction of mineral resources and rent paid for farming land. In the SNA these payments are recorded but they are not treated as costs of production in the same way as for example renting a warehouse to store retail goods. Thus the value added of a mining company is not directly affected by the amount of any royalty payments. While the resource use could be captured via measures of depletion being included in the production account we don't want to count the cost twice in the overall system by deducting royalty payments later on.

38. Thus there are both issues of consistency across asset types but also the question of coherence and completeness in accounting based on SNA structures that need to be considered. A significant consideration in this regard is the impact on accounting treatment that is driven by the SNA distinction between produced and non-produced assets. Since we are aiming to account for environmental assets following the accounting logic applied to produced assets but at the same time trying to treat environmental assets as largely non-produced we run into a few accounting issues.

Payments of rent and income tax

39. In the last section reference was made to royalty payments for extraction of mineral resources. These payments are generally made to government as the government is commonly the legal owner of the mineral resources in a country. In this sense the government exercises its sovereignty over the resources to secure an income flow. It may of course be the case that this income flow is equivalent to the true cost of extracting the resources but this need not be the case.

40. In any event, the sovereign basis for the flow of royalty payments is not at all dissimilar to the ability of governments to tax. Indeed, the distinction between paying income tax based on net income earned from extraction of resources and paying royalties on the basis of sales of extracted resource may mean nothing in economic terms – both are payments to government.

41. However, in the SNA there is a clear distinction in treatment between such payments and as a result this issue must be considered in the SEEA. To a large extent the treatment might depend on the mechanism chosen by a government to get its “share” of the value of the extracted resource but in terms of understanding the cost of resource use and consistently reflecting this through the accounts this adds an additional layer of complexity to the previous issue.

42. This issue is also relevant in the consideration of the definition of environmentally related taxes which currently excludes royalty payments but includes income taxes.

E. Questions for discussion

- 1) Do you have any comments on the coherence and consistency issues raised in the paper or could you provide clarification on any of the issues?
- 2) Do you know of other coherence and consistency issue that should be considered in the drafting of the revised SEEA?