



DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS

**SEEA Applications and
Extensions**

Comment form

Comment form for the Consultation Draft

Deadline for responses: 31 January, 2013

Send responses to: seea@un.org

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To submit responses please save this document and send it as an attachment to the following e-mail address: seea@un.org.

The comment form has been designed to facilitate the analysis of comments.

In Part I general comments on the structure and content of the draft document are sought. In Part II any other comments, particularly those of a technical nature should be included.

Relevant documents

Before submitting responses you are encouraged to read

Cover Note to the Consultation Draft

SEEA Applications and Extensions – Consultation Draft

Part I: General comments

In the box below please supply any comments on the structure of the document, the balance of material and the coverage of the draft including any thoughts on missing content.

Comments on the style, tone, and readability of the text are also welcome.

Please reference paragraphs numbers or section numbers as appropriate.

<p>In general, it is positive to have a document which describes the various types of analyses that can be done using environmental accounting data. However, we are concerned that Chapter 1 claims much more than can be delivered. In §1.4-§1.5 it appears that SEEA-CF will produce data that can solve many of the world's problems. Concepts not part of SEEA-CF are introduced (measuring sustainable resource use) and there is no understandable description about how environmental accounting is relevant to many of the topics named – the text just claims relevance.</p>
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The document consistently make claims that we do not feel can be substantiated. For example, there are claims that both EGSS and EPEA can be used to inform “the extent to which an economy is transitioning towards one that is less resource intensive and less waste intensive.” In reality, higher levels of expenditure on the environment (EPEA) can be a good or a bad sign in an economy – and certainly does not imply improved resource use or less waste. The same can be said about EGSS. These types of broad statements are unfounded and need to be deleted from the document.

Many of the breakdowns that are proposed (such as in §2.120, or the input-output by non-standard NACE breakdowns) are much more detailed than are available in statistical offices. As research projects these types of detail may be possible to estimate but we question whether this is appropriate in a statistical manual since the data would not be considered official statistics.

The information pyramid (figure 2.1) implicitly implies that all basic statistics are used in accounts and all accounts are used in indicators. This is simply not true. The smooth triangle should be shown as a series of steps so that not all steps are used in the next layer – need to allow for some data to not be used in accounts or as indicators. Change from an Egyptian-type smooth-sided pyramid to a Mayan-type step-sided pyramid.

Missing content:

(1) There is no mention of contribution analysis or structural path analysis. Most of the methods described are designed to analyse the total national impact, but contribution analysis or structural path analysis can give important insight into the impact of groups of products and the production chain where that impact occurs.

(2) Including a section on the impacts of trade is suggested – and recommend that the MRIO and EEBT approaches could be outlined.

(3) There is no mention of subsidies and similar transfers (or emission permits) in the discussion under 2.5.2 – only taxes are discussed. Need to include some discussion of these other broader topics.

Part II: Other comments

In the box below please supply any additional comments including those of a more technical nature.

Please reference your responses with the relevant paragraph number or section number.

§1.7 should start the section called “Analytical and policy focus” – reorganise section.

§1.8 Why are we going to “adopt” anything described in the manual? This document simply describes what environmental accounts data can be used for – there are no expectations regarding ‘adoption.’

The text in §1.8-§1.11 is very specific about what it does not cover but rather vague about what it does include – and the description in §1.5-1.6 is unrealistic.

§1.18 delete term “suite of publications”

Delete the term “sustainable” connected to “resources use” – throughout chapters 1 and 2.

§2.59 Introduces an abbreviation MSUT for monetary supply and use tables. This is not a standard term/abbreviation in SEEA-CF – is it good to introduce it here?

§2.63-2.69 (and figure 2.4) are discussing and illustrating index decomposition method(s). Instead of having this explanation in this location – consider moving to section 3.3? Isn’t figure 2.5 an example of structural decomposition which is discussed in §3.49-3.60 and not index decomposition? Consider moving?

§2.86 EIPRO ref needed.

§2.99 It is very unclear exactly how “EGSS can play a key role in a transition towards a more sustainable economy and society.” This claim is not substantiated in the text and needs to be deleted. What is meant by “balance reductions in employment in traditional industries”? Do you really think that workers are re-trained? Is there any evidence to support this assumption/claim? Please delete.

§2.110 describes certain types of comparisons that can be made with the EPEA data – but nowhere is the question, “So what?” answered. In other words, if expenditure increases, what does that mean? Or if it decreases, what does that mean?

§2.117 Is there something called the “sustainable energy sector”? There are renewable energy sources and an “energy sector” but this is new terminology. Not found in SEEA-CF or SNA or as part of ISIC. Is it a good idea to introduce new terminology in an applications document?

§2.136 correct sentence to include “taxes on products”: ...This includes taxes on products, taxes on production and imports,...

§2.138 There are two things that can be seen out of a ratio type of indicator – the level of the tax compared to the total but also how this develops over time. Both the level and the development over time are important.

§2.140 Is it correct to say that “taxes drive changes”? Isn’t it more that those taxes which change prices influence/shift the supply and demand of products so that consumption changes as reflected in the change in prices? Describing taxes as driving changes is overstating the mechanism of how this works.

§2.141 Implicit tax rate definition is described differently from the description from Eurostat: Implicit tax rate (also called effective tax rate) is calculated by dividing the revenues from taxes on a special activity or good by an appropriate corresponding aggregate tax base from national accounts statistics.

§2.142 refers to figure 2.14 and not to 2.13.

§2.144 emissions permits are not mentioned before this paragraph. It should be mentioned in §2.136 where these taxes are defined.

§2.162 and Figure 2.15: “Asset lives”

The description of so called ‘asset lives’ – which is not the usual term used – should include a discussion about uncertainty and the changes that occur due to prices and technology – and at least some mention about the uncertainty of these types of estimations.

§2.180 presents DPSIR – the natural capital approach should also receive at least a mention for a framework.

§2.184 and Figure 2.17 discuss “industries” but yet “households” are included in the graph. This is mixing up terminology – please modify to correct for the inclusion of the household sector (an institutional sector) together with industries. The term “issue profile” needs to be described better.

Section “Aggregation and the SEEA” (§2.195-2.197)

Some mention of the composite indicator aggregation handbook developed by OECD/JRC needs to be mentioned here.

<http://www.oecd.org/std/leadingindicatorsandtendencysurveys/42495745.pdf>

§3.6 could merit from just a little more detail – suggest adding something like: if one starts with an SUT, and converts to a product or an industry IOT, then the answer using the SUT, IOT product, and IOT industry is the same if the environmental data is the same (and manipulated consistently). An SUT is two equations in two unknowns (product output and industry output), and a product IOT just reduces the SUT system of equations to one equation in product output and an industry IOT just reduces to one equation in industry output.

Table 3.1. This table is missing Changes in Inventories, which is important to maintain balance of inputs and outputs and is not strictly part of capital formation, although they’re often combined. Changes in Inventories is usually calculated as a residual to effect balance.

§3.9 It may be helpful to make clear that environmental data is typically by

industry, and so if the IOT is by products, then some manipulations are needed.

§3.12: “in many cases”. This depends on how homogeneous the sector is. There is (often) an assumption that physical is better, but that depends on how much of the sector is physical flows and how much is monetary flows. Few IO sectors are purely physical flows. It also depends on if you want physical or economic attribution.

§3.14: The lower bound “40” just represents the databases you cite in footnote 9. There are many MRIOs with much less than 40. I think “2” is better. Or you could put “up to 190” or similar. But “190” just represents one database. Basically, there is nothing special about 40 or 190, and particularly 40 is ignoring many MRIOs with lower resolution.

3.15 I think this example would be better and more complete if you renamed ‘Country B’ as ‘Rest of the World’. Then indeed you have imports and exports fully accounted for, where you don’t at the moment (with no statement to the effect that these countries only trade with each other, and it’s easier simply to avoid that statement!).

Table 3.3 ‘Output’ should really be ‘Total output’

§3.17: Change to something like “ensure harmonisation of the trade data, account for currency conversion, and account for other inconsistencies and issues in independent data sets”. The current text only mentions two issues, but there are many more.

Table 3.2: It is perhaps confusing to have a column “total” since it is not possible to sum across the rows in a hybrid table – since there are different units in the rows. Perhaps the hybrid units should actually be shown here? Also it is useful to have accounts in a hybrid framework – showing also physical units – since something like energy can be traded but emissions are not traded.

§3.19 is rather vague. Topics such as residential vs. territorial principle should be included here as well as how purchases abroad in the SUTs are treated. Perhaps re-exports are also worth a mention here as well.

3.20. Strictly speaking it would be quite feasible to make the MRIO consistent with one country of focus and adjust all other countries’ data to fit. Instead what happens is that no country is given priority, and so the overall adjustment is minimized by allowing them all to be flexible.

3.21. The prize is the “The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel”, not the “Nobel Prize for Economics”. The prize in economics is awarded at the same ceremony as the others, but is not a ‘Nobel Prize’.

§3.23 and equation 3.1: The notation is generally ok, but at times unusual.

Check that it is consistent with other UN/EU official documents on IO. The “n”, π , etc are a bit non-standard. Using “n” as the environmental intensity vector can be confusing since it is usually used to represent an index. Suggest using R, S, E or F in this type of manual to avoid confusion.

§3.27 please add to first sentence to have it read:

“The input-output model has number of advantages, but it is also criticised for the rigid assumptions that underlie the model (constant technical coefficients, constant returns to scale) when used for scenario/future modelling.”

The assumptions are really only problematic if the model were to be used in a predictive sense, but they aren’t important when analysing the (near-) historical situation. It’s important to qualify the criticism, which is valid, but only in a certain application context.

3.28. Environmental multipliers are sometimes called eco-efficiencies.

§3.31: Two comments -

(1) Mathematically (see comment to §3.6), SUT and IOT are equivalent when they are constructed consistently. This point is only valid if some environmental data is in industry and some in product. In that specific case, an SUT approach can link the product data to the products and the industry data to industries. If using IOT, you would have to convert one of the environmental data sets using the make table. In this particular case, SUT is superior given the data issue (though, the answer should be the same if both done correctly). However, is there official environmental data that is in *both* products and industries? It is always one or the other. This product and industry issue would only arise if a researcher constructs the environmental data themselves and decides to keep allocation to either product or industry (but not harmonise). Lenzen and Rueda-Cantuche may disagree on these points.

The other issue with this point is that earlier the text states that it will consider the main methods in IOT. This section starts with a statement implying “significant” issues with the IOT and suggests using a method that appears in one or two papers only. This would seem inconsistent with the statement about “main methods.”

§3.32-3.35: This seems rather a specific application, rather than general approaches as implied by the earlier text. Delete? Or at least this section should be labelled as an example. The first sentence of 3.32 seems odd: the relative importance of an industry is quite a big, ambiguous thing. Important in what way? Relative to what?

This section seems rather weak:

Multipliers for the Environmental Goods and Services Sector

More specific detail of problems could be given - how recycling is handled, for

e.g. references to relevant literature/previous work should be given so practitioners can get actual guidelines.

§3.37 Replace “tackled” with “addressed”

§3.38: From one perspective IO has always been calculating “footprints” - It is just that Rees and Wackernagel come up with the “footprint” term, and IO has only now recently (last years) taken up this term. Rees and Wackernagel invented a term and a specific non-IO method, but IO has had an independent and more robust method since the beginning. The IO literature just did not use the term “footprint”. Suggest removing 3.38 and write something like “A consumption-based emission inventory is also sometimes called a carbon footprint”. This would require a bit of rewriting of 3.37 since it says “three research topics”, but I would not differentiate footprint from consumption in an IO setting. Bicknell in 1998 applied IO to the ecological footprint.

§3.39. Could not find either Galli or Weinzettel in the references list. I was interested to see what they said that was different what anyone else has said about the differences in methodologies. You might also want to refer to Peters et al. 2012: A synthesis of carbon in trade, which compares results from different studies.

§3.40: Some relevant references here are:

Munksgaard, J., Pedersen, K.A., 2001. CO2 accounts for open economies: Producer or consumer responsibility? *Energy Policy* 29, 327-334.

Davis, S.J., Caldeira, K., 2010. Consumption-based Accounting of CO2 Emissions. *Proceedings of the National Academy of Sciences* 107, 5687-5692.

Hertwich, E.G., Peters, G.P., 2009. Carbon Footprint of Nations: A Global, Trade-Linked Analysis. *Environmental Science and Technology* 43, 6414-6420.

Note that this last paper uses the term “footprint”, but calculates “consumption based emissions”

Footnote 11: Ahman should be Ahmad?

Figure 3.1 may be confusing – appears to imply that the totals of the production and consumption perspective are the same – only 0.1 difference between consumption and production. Also confusing that exports are part of “consumption” – so some additional text about this figure is needed to explain it. Is the labelling in the figure correct? It’s quite hard to read capital formation with those colours.

3.44: This section may need some work. The references mix IO and CGE studies and in an IO and CGE study, “carbon leakage” has different meanings. If the text does not change, at least remove the reference to Babiker. This section may want to be rewritten to reflect the different treatments of carbon leakage in IO and CGE.

- Remove Peters and Hertwich 2006.

- Add a paper which looks at the issues in time series Peters, G.P., Minx,

J.C., Weber, C.L., Edenhofer, O., 2011. Growth in emission transfers via international trade from 1990 to 2008. Proceedings of the National Academy of Sciences 108, 8903-8908.

For a discussion of the differences between types of carbon leakage, I suggest to read Peters and Hertwich 2008 (ES&T) and/or Peters, G.P., 2010. Managing Carbon Leakage. Carbon Management 1, 35-37.

§3.45: The current version of this paragraph does not explain much except to say LCA exists and it's different. Perhaps you could use the terms 'bottom-up' and 'top-down', and perhaps detailed but truncated vs less detailed and comprehensive. An expanded version of this section, including studies with sector results, etc, could replace the "footprint" section with a title "Analysis of consumption by sector and region". The Hertwich and Peters 2009 article could be a starting point, but it could draw on broader literature. Thus, the "three research topics" could be 1) consumption, 2) consumption versus production, 3) global shifts. This article may give some ideas: Peters, G.P., 2010. Carbon footprints and embodied carbon at multiple scales. Current Opinion on Environmental Sustainability 2, 245-250.

§3.47 Equation 3.4: This is not the DTA – there is no inclusion of imports to intermediate demand here?

Or is it wrong? . The domestic technology assumption would not be L_d , but it would be L_{total} based on $A_{total}=A_d+A_m$.

Check appendix of Andrew et al. (2009): Approximation and regional aggregation...

3.48. Might be worth reminding that B is Rest of World.

3.49. Suggest 'estimated' rather than 'quantified'

§3.50 Equation 3.6: All the variables here require some way of identifying the time. Is L_d evaluated in the first or second time period? This relates to the discussion of Dietzenbacher and Los in 3.52. One way to get around this is to just put $L_d(t)$ and add a residual term and state the "t" may be different in each term and refer to 3.52.

§3.52 – Why is current price data needed? Only constant price data is needed. Further, a base year is not needed, only that any pair-wise decomposition must be in the same year's currency. For a time-series of decompositions, this can vary over time.

§3.52 Change "nearly all" to "many" – to claim "nearly all" is rather too bold a claim to make in this type of document.

§3.52 Take last sentence and move to be the first sentence in §3.53 – remove "which is discussed next".

§3.60 The fifth line in the graph is shown as dots and NOT as "X"

Table 3.4 Units should be either “M metric tons” or “Mtonnes.” 1 metric ton = 1 tonne. The spelling “ton” refers to either a long or a short ton – 2000 lbs. This unit of measurement should be changed to the metric system.

§3.61 Nearly all of this text on physical versus economic also applies to IO – this is not CGE specific. Move? Include also for IO? Delete? Revise? 3.61. The first sentence might be true, but CGE models also use lots of guessed and estimated numbers as well as a large list of assumptions. Plenty of models use actual data, just as IO models do. The opening sentence could be rewritten. The key difference with CGE models is that they attempt to include economic behaviours in response to price and volume changes, so perhaps that is a better opening line. If it stays... last few words should read... “may not be present.” Replace “by” with “be”

§3.63 add word “historically” ... SEEA which help to historically tract the change...

3.64. Yes, CGE models use IOTs in their core. In fact what that means is that many of the relationships are fixed technological coefficients. The CGE modeller decides which of the structures to make flexible, and leaves the others fixed. Effort usually (effectively always) constrains this exercise so that underlying fixed (Leontief) relationships remain. In addition, CGE models usually (not always) substantially reduce the number of sectors for reasons of computation time. A slight revision of this paragraph would better reflect the realities.

§3.65. Some additional assumptions could be added here: (i) there are no externalities, (ii) all markets are in full equilibrium, (iii) market participants have perfect information, (iv) markets are perfectly competitive, (v) transaction costs are negligible, (vi) markets exist for all possible goods. CGE models have an important place in economic analysis, but the assumptions behind them need to be clear.

§3.68 Reference for Cournot or Bertraud?