



DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS



System of
Environmental
Economic
Accounting

System of Environmental-Economic Accounting— Ecosystem Accounting

Global Consultation on the complete document: Comments Form

Deadline for responses: 30 November 2020

Send responses to: seea@un.org

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The comments form has been designed to facilitate the analysis of comments. There are six guiding questions in the form, please respond to the questions in the indicated boxes below. To submit responses please save this document and send it as an attachment to: seea@un.org.

All documents can be found on our website at: <https://seea.un.org/content/global-consultation-complete-draft>

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General comments

Question 1: Do you have comments on the overall draft of the SEEA Ecosystem Accounting?

The SEEA must keep a certain degree of coherence with the SNA and, whatever its status and position in official statistics, a high degree of coordination with it, meaning that the introduction of new concepts should always be accompanied by clear explanations of their relation to the core SNA framework.

In order to enrich official statistics on the economy with new and relevant information, the system should adopt a multidimensional perspective, in line with SDGs and with the “beyond GDP” approach in a substantive way.

While certain parts of the overall draft can successfully drive the implementation of these perspectives, other – namely those concerning valuation – take a reductive approach. Such an approach is not appropriate as a specification of the SNA since the valuation methods are not all fit for the purpose. Similarly, this approach cannot be considered as an enlargement of the SNA perspective, because it chose to identify “the value” in monetary terms of Ecosystems and their services, instead of focusing on the way economic *values depend upon* them. Moreover, doubts arise as for the extent to which this approach respects the fundamental principles of official statistics, due to the numerous “expert choices” and compromises that are necessary to reach the suggested valuations.

For these reasons – better explained below and in the comments provided on individual draft chapters – Italy supports the idea of splitting the draft into two parts, as voiced by many participants in the recent extraordinary UNCEEA meeting. The first one including chapters up to 7 – with adjustments as appropriate – can be proposed to the UNSC for adoption as part of the System of Environmental-Economic Accounting standard (a complement to the SEEA CF). The second part has to remain experimental, as a background for the continuation of research aimed at the definition of a set of accounts concerning monetary values connected to Ecosystems to be included later in the system. In other words, Italy opposes the hypothesis of proposing the UNSC to adopt, as a standard, a volume containing many non-univocal indications, which makes the meaning of the variables unclear. Italy proposes to maintain the label of “experimental” on the second part and urges the mainstreaming of research on a plurality of relevant monetary values ... into a continuing process or revision. Italy would support the effort of developing this approach substantially.

Note: We are interested in revising and commenting possible future versions of the draft following the present consultation.

Comments by sets of chapters

Question 2. Do you have comments on Chapters 1-2 of the draft SEEA Ecosystem Accounting?

We support § 1.16: “The essence of ecosystem accounting lies in representing the biophysical environment in terms of distinct spatial areas each representing different ecosystem types”.

§ 1.26 (ii) states that the economic valuation techniques used “support the derivation of exchange values”. This is given as an assumption though remains to be proven for most of the methods proposed.

Section 1.4.3 Connection to the System of National Accounts needs to be better worked out, e.g. in terms of a specific analysis of where the values used as reference for the various valuation methods are found in the SNA. More in general, it should be made clear that the valuation of the contribution of ecosystems supported by SNA concepts and principles – and in particular on the application of the exchange value concept to non-produced assets and services as if they were produced – does not provide appropriate information on the importance of Ecosystems for the economy (this may apply also to other environmental assets). Indeed, this valuation only provides information useful for understanding the effects on income distribution of the presence of rents on environmental assets, not on their relevance for the very existence of economic activities – displaying which should be the primary aim of the System. We strongly oppose the extension of the production boundary, declared in §1.30, and the consequent expansion of “the measurement of output, income and GDP and associated monetary values of ecosystem assets” as well as the idea that “the monetary values can be used to extend measures of national income and wealth”, at least not in the current context of official statistics and before tackling the well-known problems of the monetary values to which this refers.

§1.32 includes a contradiction: if the production boundary is extended, then ecosystem assets are considered producers, i.e. economic units on their own. Why should their value and depreciation be allocated to their owners? In our opinion, a way out of this contradiction is to accept the idea that there is no production, but only the appropriation of non-produced assets and their services, which leads to rents depending on their scarcity and on the market power of their economic owners.

Finally, a discussion on the links with the issues being discussed under the heading of “environmental accounting”, in the framework of the ongoing SNA revision, would be useful, highlighting overlaps and conceptual similarities between the classification and treatment changes proposed in that context and the development of ecosystem accounts.

In section *1.4.4 Connections to other statistical standards and guidance*, it is not sufficient to enumerate the “statistical standards and handbooks that are relevant to work on ecosystem accounting”; the usefulness for them of the SEEA E(?)EA – and of each of the different kinds of information it provides - should also be highlighted.

Annex 1.2: Linking the SEEA EA and the SEEA Central Framework

This annex is very welcome.

§A1.7, dedicated to monetary valuations in the SEEA-CF and in this draft, states that the “extension to include a broad range of ecosystem services leads to an expanded conception of wealth in the SEEA EA since the underlying environmental assets are recognised to provide a much wider set of benefits than is traditionally recognised”. This is true in physical terms, and should be referred to them. Highlighting the changes in the conception of wealth, brought about by thoroughly considering the biophysical dimension, would be really worth for a satellite system. Paradoxically, there is no possibility of expansion within the limits of the exchange-value-based monetary conception of wealth. It can be argued that the exchange value of ecosystem services, which is not already embodied in SNA-measured values (i.e. in products), amounts to zero. The reason is twofold: the exchange value concept cannot be applied, due to missing prerequisite of ideal exchangeability with a third party; the services are not naturally scarce or rationed by policy choices. Hence, their exchange value (embodied in products’ values) is zero.

§ A1.43 on environmental transactions fails to identify the items included in the accounts of Chapter 4 of the SEEA Central Framework that are relevant in relation to ecosystem accounts, and the position of some of them within thematic accounts, such as on biodiversity.

Question 3. Do you have comments on Chapters 3-5 of the draft SEEA Ecosystem Accounting?

These core chapters design a methodologically robust framework for describing and measuring the state of ecosystems and how economic and social systems depend on them, based on a clear and sound understanding of this dependency as for the biophysical aspects involved.

We are very grateful to the UNSD and to the Technical Committee for setting up an important process of reciprocal engagement of the scientific and statistical communities and for establishing the general principles for National Statistical Offices in undertaking the task of measuring ecosystems, i.e. in terms of extent and condition.

Question 4. Do you have comments on Chapters 6-7 of the draft SEEA Ecosystem Accounting?

The extension of Supply and Use Tables to biophysical measures of the ecosystem services used by economic units is a fundamental step in the direction of understanding and displaying the contribution of ecosystems to benefits, i.e. how economic and other human activities depend on the physical services provided by them.

Chapter 6, however, introduces the notion that ecosystems engage in transactions, as if they were economic units. This is a major violation of deeply rooted principles of national accounting. Ecosystems do not have a will of their own, do not take decisions, either concerning production or exchange. This is strictly connected to the concept of “value of the exchange”. The very value of transactions lies in the fact that they bring benefits to the economic units that carry them out, and they can be supposed to bring benefits insofar as they are the expression of free will – which is the reason why theft is not considered as a production activity. This is related to the “third party criterion”, according to which no production occurs, no transaction is in place, and no exchange value can be identified when somebody does something for himself that nobody else could do for him, such as directly enjoying an ecosystem service. Everything that can be transacted are either products embodying the contributions of ecosystem services or the right to use ecosystem services, but never the ecosystem services themselves.

There is a need to coordinate the discussion on some ecosystems services with the current discussions in the context of the SNA revision, such as the air purification and carbon sequestration services with the idea of treating the atmosphere as an asset. Let us consider air purification: if the atmosphere becomes an asset in the SNA, the benefits of air purification - which would be an intermediate ecosystem service - would accrue to the atmosphere’s “owner” (the government as a trustee), who may in turn provide them for free to those who breathe. To the extent that there is an exchange value involved, we are in the presence of a gift in kind, whose value should be added to that of emission permits, when it comes to valuing the atmosphere.

Ecosystem disservices are introduced in this chapter in a way suggesting that a value judgement is underlying the whole construct of ecosystem services and of their valuation. Ecosystem functions are considered services and included in the accounts

since they are considered “positive exchanges” (§ 6.61), i.e. contributing to benefits, while disservices do not involve “exchange of positive quantities of a good or service” (§ 6.63).

A-priori value judgements do not belong to national accounting logic, in which exchange value in transactions is irrespective of what may be considered harmful or immoral or illegal from other points of view, provided that transactions are an observable expression of the will of two parties free to decide for themselves and that money flows are or could be involved in the exchange, in the world *as it is*. The SEEA E(?)EA postulates that there are positive exchanges and transactions where these criteria are not met.

“Ecosystem disservices” does not indicate different sets of phenomena from “ecosystem services”, but only the functioning of ecosystems when its effect is the destruction of man-made values¹. In many cases, ecosystem services are or can be directly *defined* as nothing else than the absence of disservices (e.g. flood protection exists as long as there are no floods). When this is not the case, ecosystem services are hardly disjointed from disservices. This is shown in the examples given in the draft.

Telling services and disservices apart is a matter of perspective. What can be measured in terms of transactions, and is observable, are only *joint consequences of the indivisible existence of ecosystems and their functions and of their usage by economic units*.

While this does not imply the need for a change in terminology, it calls for a clarification of the different status of ecosystem services considered as biophysical flows and ecosystem services when subject to valuation, as the latter do not respect some fundamental criterion of national accounting.

Finally, the pros and cons of an alternative terminology to “ecosystem services and disservices” should be discussed, as IPBES itself changed its language since 2018.

Question 5. Do you have comments on Chapters 8-11 of the draft SEEA Ecosystem Accounting?

The core part of the SEEA on Ecosystem Accounting concerning monetary values connected to ecosystems and their services has been centred on the quest for *their* specific and exclusive monetary value, meant as the measure, in monetary terms, of their contribution to benefits.

Throughout the revision process, the economic importance of ecosystem services has been interpreted by establishing their value as if they were products. This approach does not allow to seize, in a satisfactory and acceptable way, the opportunity for establishing a sound understanding and a thorough description of the ecosystem contributions and society’s dependence on them.

This approach does not respond to the important task of delivering information on the ways and extent of the economy dependence on ecosystems and their services also in monetary terms, while in previous chapters the approach was in biophysical terms. It only tries to determine *the monetary value of ecosystems and their services*.

It can be argued that, determining the exchange value that ecosystems and their services would have if they were on the market of their own, is not such an important task for a satellite system to devote 4 core chapters to it. Indeed, its primary purpose should be to provide *additional* information with respect to that belonging to the domain covered by the SNA. Determining the exchange value of the services of non-produced non-financial assets, such as ecosystems, embodied in products – i.e. of resource rents – is a

¹ By the way, in §§ 6.63 and 6.64 two cases are considered as for the effects of disservices: a) “reduced flows of ecosystem services”, b) loss of human capital. To these, at least the loss of fixed capital should be added.

conceptually straightforward application of SNA principles, and therefore a “normal” task for national accountants (as in comments to annex 1.2, it can be argued that the exchange value of ecosystem services, that is not already embodied in SNA-measured values - i.e. in products - amounts to zero). In this respect, it is important that such a measure can be used to understand the effects of the appropriation of ecosystem services on income distribution and the consequent presence of rents on environmental assets (including ecosystem assets), and can be conceptually linked to the ongoing developments in the SNA research agenda.

Moreover, this task is carried out in this draft in an unsatisfactory way from a national accounting point of view:

- It is incorrect, as the only correct way of performing it is by applying the concepts of rent and of payments to permits to use the environment, as dealt with already in the SEEA CF. In the complete draft, the central reference concept for valuation has become that of “observed prices”; (it correctly was the resource rent in the draft chapters). It should however be clear that – if coherence with SNA has to be maintained – observed prices must be stripped of the value of all other inputs, before being applied to ecosystem services. Since the ecosystem has no monetary production costs, what remains is the resource rent. A valid conceptual parallel is with the value of input of natural resources into production (see SEEA CF annex 5.1);
- it is insufficiently defined, since several options are considered for the derivation of values which are said (without proof) to be the values of these rents and permits (i.e. used for *imputation*);
- a whole category of methods (*Methods where the prices are based on hypothetical expenditures or markets*) is based on hypothetical situations. These methods provide valuable information for policy-making, and may be considered with a different approach to monetary values connected with ecosystems; in official statistics, the statistics thereby derived qualify as experimental in nature. It is not clear why such an experimental, hypothetical figure should be fit to support a standard measurement of an exchange value (which itself is often hypothetical);
- it is insufficiently worked out as for details, such as the different treatments that may derive from different institutional arrangements, property regimes, kinds of contracts; think for example of the ongoing discussion about assignment of ownership and treatment of depletion as production costs, in the framework of the SNA revision;
- it is not always correctly related to SNA values, as additional exchange values that simply do not exist are introduced – namely, all those values whose aggregation would give the Gross Environmental product. For instance, the enjoyment of cultural services does not respect the third party criterion, so it is not possible to deal with it in terms of exchange value (there is not such a dimension in the interaction, which – as seen above – is not a transaction in SNA terms), while the exchange value that can be extracted from them is included in payments that give rent-like income, such as entry fees. As long as this exchange value exists and responds to the SNA definition, it is embodied in the exchange values of produced goods and services, covered in the SNA, and it belongs to the category of rents, being resource rent only dependent on natural scarcity. In turn, it is a different kind of rent or income (e.g. taxes) when scarcity is artificial (policy-determined, such as in cap-and-trade mechanisms, or depending on the non-competitive nature of markets such as with monopoly rents).

The implications of the essential notion of ecosystem services (being non-produced) should have been thoroughly worked out. A system of satellite accounts that aims at adding relevant information should not be based on the idea that the contribution of ecosystems to benefits corresponds to a residual exchange value. This valuation approach leads to assigning very low or zero values to ecosystem services, by making their value dependent solely on how scarce they are (or are made by their owner) in respect to current use (this is because costs of ecosystem services are by definition null – or non-monetary – so that they do not enter market exchange value).

In our view both SNA and non-SNA contributions of ecosystems to benefits are fully captured only in physical terms, while their economic importance can be grasped with the help of a wide range of monetary measures, which - though present in the current draft - are not as developed as they could in order to define a complete framework of concepts. (All of) The different estimation techniques presented in the current draft as “valuation methods” have specific and relevant meanings (which should be highlighted) and used for what they are able to measure. Moreover, their positions within the SNA, or in relation to it, should be discussed in order to make it clearer whether they embody hypothetical or actual SNA values as well as their specific relevance for decision taking, especially in the public domain, on a case-by-case basis. The transposition of all monetary values to one single measure aimed to express the “value of ecosystem services” is reductive with respect to the rich and articulated body of experiences in estimating all sorts of economic values connected to ecosystems and their services that emerged in the revision process. Maintaining this richness would be more in line with the relevance and impartiality required by the 1st principle of official statistics, would help prevent the misuse of statistics, as highlighted in principle 4 and would allow NSOs to act more effectively as data stewards in this field rather than imposing the reduction to one concept (and thus the summability) of many different values, sometimes arbitrarily chosen among several possibilities.

Official Statistics should recognize that the body of practical experiences gathered so far, whatever rich it may be, is too methodologically varied, unripe and at times even contradictory. Furthermore, the ensuing estimates are too imprecise and uncertain for the existing implementation experience to be deemed indistinctly as a sufficiently solid basis of official statistics. Due to the need to rely widely on doubtful value transfers, black-box models and tools developed for purposes different than (official) statistics, a lot of care is required to make Ecosystem Accounts compatible with the professional standards mentioned in principle 2 of official statistics as well as with accountability and transparency as required by principle 3.

Question 6. Do you have comments on Chapters 12-14 of the draft SEEA Ecosystem Accounting?

Chapter 12 is devoted to applications and extensions. Therefore, it should be included in the ad hoc SEEA volume and in no case in a would-be standard. However, it introduces a number of interesting concepts that would deserve a more thorough discussion that cannot be done here.

§ 12.2 states that “in many policy contexts it is important to assess policy scenarios reflecting alternative management regimes or institutional arrangements for ecosystems, and this requires taking an ex ante approach. For example, to analyse how certain negative externalities (e.g., pollution) might best be internalized. The monetary values of the ecosystem accounts will not provide these estimates.”

On the one hand, it can be argued that an ex-ante approach is not fit for official statistics, so it is good that ecosystem accounts will not provide these estimates. On the

other hand, some of the valuation methods proposed rely exactly on the simulation of hypothetical situations, so the statement is not entirely correct. Finally, it may be argued that this kind of evaluations may be included in the applications of a satellite system.

Section 12.2 describes a set of complementary tables that can be obtained when taking a welfare-based approach to valuation.

Welfare-based valuations are an attempt to capture consumer surplus, a non-observable, purely theoretical entity. This attempt is loaded with problems of all sorts which range from conceptual ones, concerning the very existence of consumer surplus as an actual experience of the consumer (the fact that the consumer would be willing to pay more if supply was lower does not necessarily imply that the actually experienced utility is greater than the marginal one), to very practical ones concerning its computation. Moreover, welfare-based valuations make up values that are not interpretable in relation to daily experience with monetary values, let alone SNA figures. What is the point in calculating something that cannot be compared to anything?

Externality theory – recalled in 12.13 by quoting Markandya et al. (2001) – belongs (like welfare values and consumer surplus) to a specific school of economic thought (namely, neoclassical welfare economics). A monoculture approach to economic theory is not sound for official statistics. Certain concepts do not need referring to this theory or at least not to it alone. A different, equally suitable, approach would be that of *social costs* introduced by institutional economics and in particular by K. W. Kapp, who wrote “The concept of social costs refers to a wide variety of harmful effects of productive activities which are not reflected in entrepreneurial cost accounts and, hence, tend to be neglected in private decision making. That is to say, social costs may be identified as those harmful effects of private action which, under given conditions and institutional arrangements, tend to be shifted to and borne by other sectors, third persons, or the economy as a whole”².

Also annex 12.1 provides evidence that value judgements are a fundamental prerequisite for the whole approach to monetary values through the discussion of a specific economic theory, which plays a central role in the construction. Especially § A12.10 and A12.12 reveal the links between value judgements and this theory. The first paragraph states that in 1976 Weitzmann gave formal proof that under certain conditions “**variations in material wellbeing** in society are reasonably well represented by the changes in Net Domestic Product (NDP)”. § A12.12 reveals one of those conditions: “an important assumption in the Weitzman result is that it assumes that the products included in the income measure (i.e., GDP) all correlate positively with wellbeing. In turn, this places a focus on the production boundary both as to whether it includes some things that have a negative link to wellbeing but also whether there are missing goods and services that contribute positively to wellbeing. It is the potential of ecosystem accounting to consider some of these missing good and services, and the effects of losing the access to them as a result of ecosystem degradation, that is one of the motivations for its development”.

To sum up, the intent is enlarging the production boundary as to include, in GDP (or, better, in NDP), some “missing” goods and services that supposedly correlate with wellbeing, as to make it a better wellbeing indicator (see above the discussion about disservices).

² Kapp, K.W. (1965) “Social Costs in Economic Development.” In: Sicat, G.P. (ed.). Economics and Development. Quezon City: University of Philippines Press.

Even though the correlation has been often observed through surveys on willingness-to-pay, this is not sufficient for generalisation and assumption as a basis for GDP correction. Firstly, because the “missing” is not granted, as the rent that can be reaped from those services is already included in SNA output. Secondly, while almost everybody agrees on GDP lack of significance as a welfare indicator, not everybody agrees that it is *corrigible* in that respect, e.g. a sensible picture of the economy and its aggregate level can be constructed by including and excluding goods and services on a value-judgement basis. SNA aggregate measures of income and production only attempt to capture the variations in material wellbeing *as revealed by actual voluntary transactions*, and require no assumption on the welfare sign of what’s included in it. Finally, what would be the use of a wellbeing-oriented correction of GDP limited to ecosystem services, as compared to the other free, non-marketable (even potential) services that human beings get, e.g. within households (notably, in a chapter of the planned SNA revision, only potentially marketable services – i.e. the ones for which the third party criterion is met – are considered)? Let GDP be GDP and wellbeing be measured as appropriate. Within such an approach, it is also not surprising to read about “the true value of the goods and services” (§A12.14) as if something like this existed.

§ 12.27 “Earlier iterations of the SEEA focused not on valuing ecosystem (or environmental) assets per se but rather on measuring degradation directly in terms of the environmental cost associated with recorded levels of economic activity. For this purpose, there was no requirement to extend the production boundary as described in ecosystem accounting”.

Indeed, the approach taken in earlier iterations of the SEEA was more in line with the fundamental prerequisites of national accounting.

It seems that this sentence, as the first one in §12.43, escaped the general purge of the language of the draft chapters, aimed to avoid to explicitly mention that there is – as in fact there is – an enlargement of the production boundary.

The discussion in §12.28 is an example of conceptual indeterminateness of the valuation part of the SEEA E(?)EA. The fact that “it is only when there is insufficient clean air that it obtains a scarcity value that needs to be considered” is attributed to the restoration costs approach *as if this was a pitfall* from which the SEEA E(?)EA escapes. Nevertheless, *scarcity-based value (rent) is the correct valuation concept* in SNA terms for non-produced resources. Hence, either claims of coherence between the SEEA E(?)EA and the SNA should be reconsidered, or the valuation methods that are not compliant with the SNA should be put aside in chapter 9.

In general, Chapter 13 is well organised and balanced, despite what is written above on the values included in thematic accounts.

The following sentence in § 13.100 is paradigmatic of the potential the approach has in misleading policy: “Monetary accounts may also provide support for municipal budget allocation to asset investment and maintenance”. It should be clear that, as long as scarcity value dominates the scene as for non-produced assets and their services, monetary accounts will provide a very partial idea of the dependence of the economy on environmental assets and of the importance to allocate resources to their maintenance.

Chapter 14 is a straightforward application of the “combined presentations” logic to the different pieces of information in the volume, some of which are very valuable and others disputable.

