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.

2.3.3 Land cover/ecosystem functional units

2.47 The second type of unit is the land cover/ecosystem functional unit (LCEU). For most terrestrial areas an LCEU is defined as the set of contiguous BSU satisfying a pre-determined set of factors relating to the characteristics and operation of an ecosystem. Examples of these factors include land cover type, water resources and soil type. A particular feature is that the set of BSU that comprise an LCEU should be seen as operating in a relatively joint manner and more or less independently from neighbouring LCEU.

Proposition: Please add the underlined expression.
Rationale: No ecosystem, nor its processes neither its services, is independent from neighbouring ecosystems (e.g. agricultural production is affected in appositive or negative way by adjacent hedgerows and forests). In the given context "more or less" would at the time express that less is "better" than more.

2.63 Although the generation of ecosystem services may take place over varying spatial areas depending on the ecosystem service, for a broad range of ecosystem services a useful measurement starting point may be to consider the ecosystem services generated within an LCEU. Particularly for provisioning ~~and cultural~~ services and also for some regulating services (air filtration, regulation of water runoff, groundwater recharge) an LCEU is likely to provide a useful spatial boundary for the measurement of ecosystem services.
If services depend on a specific mix of different LCEUs (e.g.: a mix of forest areas and open land is often seen as most pleasant for hiking; habitats for iconic species like the Black Storck (Ciconia nigra) must encompass forest and wetland) an appropriate unit for national accounting could be a special EAU, for example a grid that is large enough to capture the composition of LCEUs that forms the basis of the service.
Maps of ecosystem service generation may be useful tools in delineating LCEU and special EAU by providing an understanding of concentrations of related ecosystem services.

Proposition: Please add the underlined expressions and leave out the parts of the text that are crossed out.
Rationale: In some cases the "production" of an ecosystem service depends on different land use units / ecosystem types in a synergistic way (Δ ES / Δ $LCEU_1$ = f ($LCEU_1$ / $LCEU_1$) or even in a limitational way (like a limitational production function: without quiet forest no black storck). In those cases LCEU are not a reasonable basis for ecosystem services accounting. For national accounting purposes much more appropriate is a simple grid structure which is able to capture the required composition of different LCEUs in landscape.

3.8:
Proposition: Together with our colleagues from the Swiss Federal Office for the Environment (FOEN) we want to suggest the following complementation of Paragraph 3.8
"This notion of ecosystem services is often referred to as “final ecosystem services” in that they are the final outputs that are generated and used from an ecosystem." Add the sentence: "The concentration on final services helps to avoid double counting."
Rationale: This would help to clarify the main message of the paragraph.

4.5.2 Definition and description of biodiversity

4.108 At ecosystem level, biodiversity loss is characterised by the conversion, reduction or degradation of ecosystems (or habitats). Generally as the level of human use of ecosystems increases in extent or intensity above a critical level, biodiversity loss increases.

Proposition: Please add the underlined expression.
Rationale: In the case of Europe the standard argumentation regarding human influence and biodiversity is that biodiversity has risen with the introduction of traditional forms of agriculture and decreased when agricultural use was more and more intensified.

4.116 The condition of biodiversity, as measured by species number and abundance can be measured directly. However, because this is costly to do for large areas, biodiversity condition is usually estimated using a range of data and methods, including modelling techniques based on information about land cover, land use, landscape composition fragmentation, connectivity, climate change and other pressures.

Proposition: Please add the underlined expression.
Rationale: Although the concepts of fragmentation and connectivity are belonging close together, both should be mentioned here. Habitats for species and recreational services of landscapes are often depending on a mix of different ecosystem (se also remark on paragraph 2.63.

Chapter 5

Proposition: Together with our colleagues from the Swiss Federal Office for the Environment (FOEN) we want to suggest the following addendum to Chapter 5:

"Before publishing monetary values within the accounts, the meaningfulness of these values should carefully evaluated. In cases where - due e.g. to limits of scope or methodological restrictions - the risk of considerable under- or overestimation cannot be ruled out, it is preferable to abstain from publishing these values within the accounts. In such cases, valuation studies outside the accounts may be a solution. In any way, the publication of monetary values should be accompanied by a transparent documentation of assumptions and considerations on the scope and robustness of the valuations."

Rationale: Monetary valuation of ecosystems and their services remain a challenging field. Methodological choices within the accounts (e.g. the exclusion of non-use values or restrictions on the use of available welfare studies) may lead to values that do not capture the whole range of relevant benefits or values. The resulting values may, in

some cases, be very misleading, creating an illusion of accuracy while neglecting the lion's share of the value of some ecosystems.
Valuation studies outside the accounts may have the advantage to respond to well-defined policy questions. Specific studies would also be an opportunity to show a range of values based on a range of scenarios and assumptions.

5.2.5 The 'Total Economic Value (TEV)' framework

5.25 It is important to recognise that both ecosystem services providing direct use value (~~in particular~~ e.g. provisioning services, air filtering, recreational services) and services providing indirect use value (~~in particular~~ many other regulating services) can be seen as final outputs of the ecosystem. In the context of the TEV...

Proposition: Please add the underlined words and leave out those that are crossed out.
Rationale: The original text is formally right but can reinforce the misleading interpretation that direct use values are equivalent to provisioning services. Cultural services and some services that are called regulating services are also direct use values.

5.26 Some connections may be drawn between the framework just outlined and the national accounts notion of value. Since non-use value is based purely on the utility of an individual, it can be concluded that non-use values are solely comprised of consumer surplus and hence should be considered out of scope of national accounts based measures of value. For such cases SNA offers a second best procedure (see also paragraph 5.35) in which the value of the non-monetary transaction is equal to the sum of the costs of producing the service (i.e. costs for the management of a protected area, opportunity costs of the land used for the protection of species, payments to farmers to adopt farming practices that save the habitats for specific species).
For the other components of value it is possible that all three play a role in setting prices following national accounts notions of value although exactly how these different components might be identified can only be determined on a case by case basis.

Proposition: Please add the underlined sentence.
Rationale: Without the additional sentence a reader might think that SNA rules would prohibit any kind of valuation of services that provide only non-use values.
Please check, whether SNA rules permit to use opportunity costs for valuation also in those cases where they accrue due to regulatory decisions and discuss the usage of opportunity costs within the boundaries of SNA in connection with other valuation techniques (e.g. in the course of 5.4.2 Approaches to pricing ecosystem services).

A3.24 Ecosystems provide an opportunity for tourism and recreation. Tourism is generally interpreted as involving overnight stays, potentially visitors from abroad, and recreation is more usually associated with day trips. The service usually involves some degree of investment ~~in the ecosystem~~, for instance to mark out and build walking trails, cycling paths, and camping sites. In physical terms, this ecosystem service can be measured by different methods to value the attractiveness of landscapes for recreation services that take into account for example landscape scenery, the composition and diversity of different ecosystem types within a landscape etc. and the number of people visiting the ~~ecosystem~~ landscape. In cases where the demand curve for the recreation services of a specific site is flexible due to a wide range of

opportunities for substitution (especially for holiday recreation) the number of visitors can be used as a proxy for the value of the service. In cases where the demand-curve is inelastic (e.g. for after work recreation) the number of visitors should be combined with attractiveness measures to get more valid indicators for value of the recreation services.

Proposition: Please add the underlined sentences leave out the expression that are crossed out.
Rationale: It is arguable whether walking trails are an investment in ecosystems or an investment in infrastructure. Regardless of how to answer to this question these investments can increase the value of ecosystem services.
The number of visitors is only a good indicator for recreation services for some kinds of recreation demand. Recreation is not a homogenous good that is "sold" on one market. Normally three kinds of recreation demands are distinguished: daily/after work recreation, which normally takes place more or less close to the home, weekend recreation and holiday recreation. The differenciating feature is the time budget to reach the recreation site. The time budget determines the alternatives for substitution.

A4.15
Remark: The text of paragraph A4.15 seemingly does not fit to the rest of text.

A4.25
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