Physical and monetary asset accounts:
The needed symmetry between the physical and monetary tables for the resources can only be obtained when a distinction is made in the physical accounts for those categories with economic benefits.

Section 5.2:
Para 22. It could be made clearer that the interaction between the economy and the atmosphere and the economy and the oceans is within the scope but the interaction between the atmosphere and the ocean is out of the scope.

Section "Land" could be named "Land and soil". Para 25 groundwater should read "soil water".

Table 5.2.1 we would suggest to include "cultivated resources under the relevant headings (e.g. timber, fish and other biological resources)

Para 43 the first sentence is not completely accurate – it is possible to aggregate over energy resources using either joules of carbon equivalent conversion factors.

Section 5.3:
Table 5.3.1. We would suggest changing the title of the table to : Structure of the physical asset accounts for environmental assets. The item reclassification is not clear. It seems to apply only to land, as increases in one category result in decreases in another category only in the case of land. It maybe could apply that total timber resources may change from cultivated to non-cultivated.

The text in 48iv. Should read the same as 49 v.

Section 5.4:
Terminology: Resources and assets are used interchangeably.

Para 82: Depletion should be defined in terms of the capacity of the stock to produce MSY. This is not the same as saying that depletion is what is in excess of MSY.

Para 131: Extraction rates may also fall to zero in the case in which access to the resources is restricted to allow for the stock to recover.

Section 5.5:
Refer to 'natural gas' rather than 'gas', because the latter is very general and also refers to gases that are generated in the economy. Also, it could be useful to have a clarifying note acknowledging that 'stocks' have a different meaning here than in the conventions used in Energy Statistic (and in IRES).

It may be useful to split "petroleum resources" into "Oil" and "Natural Gas". Although they are often found together and extracted from the same well, they are commonly expressed in completely different physical units ('barrels' vs. 'm3'), so assigning a number to 'petroleum resources' would at the least require come kind of conversion to a common unit.

It is not clear what type of energy resources are covered by the "non-metallic minerals" category.

In paragraph 189, I think the text is vague on whether the figures should include just 'proven' reserves, or 'proven, 'potentially recoverable' and 'possible'. 189 (i) suggests that the figures should include all three cases, but then argues that the number would change when potential deposits are re-categorized as known deposit. I don't see how this would make the figure change, if we already included all three cases. Also, if we do not differentiate between the three categories of recoverable resources, the reappraisals of (ii) would have no effect on the number.

Para 206: The para is unclear. It seems to imply that discoveries are an output of mineral exploration and evaluation, which is not in line with the SNA.

Table 5.5.5 is not referred to in the text. Replace the word deposit with resources.

Section 5.6 Asset accounts for Land:

The classifications of both land use and land cover need further work. The classification of land use is a mix of land use and land cover and in some cases also purpose (land that is designated for forestry purposes – even if there are no trees on it). This should be clearly specified.

If the land use classification is maintained separately from the land cover classification, Table in Annex A5.3 – the presentation should be improved to better show the hierarchy of the classes. It would be helpful to more clearly explain the difference between C and L.1 and L.21. The class built up land does not have a code.

Class J – Land developed for recreational purposes is not very clearly defined. It seems to include water and wooded areas that are used for recreational purpose. It is unclear whether a small lake in a city park should be considered as part of inland water body (ClassL) or in class J as there is no exclusion mentioned.

The class B.11 Seem to cover both primary forest and other naturally regenerated forest. We should break down the class if we classify primary forest and non-cultivated and other naturally regenerated forest as cultivated (see comment below).

The classification of land cover types is not “pure” land cover, it includes also several elements of land use (e,g, cultivated vs. natural) and seems to overlap with some of the classes in the Mappable land cover classes.

The concepts of land cover, land use and land functions are very closely inter-related and it is not possible to develop classifications that describe each of the above characteristics in a “pure sense”. We would therefore suggest looking into the possibility of developing a single classification combining the 3 proposed in the text using LCSS3 as the basis for such classification and further disaggregating the classes in particular with respect to agriculture, forest and aquacultural land and built up land.

We would suggest presenting the forest and other wooded land section together with forest. The definitions used for forest land are central to the timber accounts and the compilation

of the accounts for forest and other wooded land and timber are done together using coefficient to go from one to the other.

Also it should be made clear what is difference between the accounts for forest and other wooded land and timber accounts (apart from the metric of measurement in physical terms). The definition of forest and other wooded land seems not to cover trees in orchards, whether the definition of timber in para 306 seem to cover all trees. Also the column structure of the tables (categories) should be aligned.

Table 5.6.6: We should make clear which forest and other wooded land provides economic benefit and will therefore appear in the monetary accounts in Table 5.6.7 with a positive value.

Table 5.6.6 Title should be Physical asset account for forest and other wooded land.

Section 5.7
This section needs further consideration. It should focus on the use of soil, the soil erosion and the resulting depletion in soil should be the focus of this section.

Section 5.8
This section should clearly specify that the scope of timber accounts is not covering only those trees that are used as input into production but to cover all trees regardless of their purpose. The term “timber” may create some confusion as it is commonly thought of as a source of wood for production. The scope of the timber accounts instead is to be broader and encompasses all trees regardless of their purpose. It would be useful to add a couple of sentences to this effect in para 306. In addition the last words in the first sentence in para of 306 may cause some confusion "that can still be used for timber or fuel" as they may be interpreted as not only referring to "dead trees lying on the ground" but to the whole timber resources. Using the term for “timber supply” in the context of timber accounts may create confusion as “timber” has different meaning in the two situations.

Table 5.8.2 requires additional columns to delineate those timber resources that have economic benefits from those resources with no economic benefits. Timber resources may provide different economic benefits (as input in production, logging and fuel and recreational) and potentially competing. We need to be clear on whether in the monetary accounts we are only valuing the inputs in production. This will also have implications in the format of the physical accounts, where timber resources providing economic benefits should be separately identified from those that do no provide economic benefits.

para 311: It is unclear why the class other naturally regenerated is considered cultivated. It is unclear whether the management and control is regular. Also, it is not clear if the definition used is consistent with the definition of tree or shrub crops in the classification of land cover type (B.)

Title 3.27 should read Timber resources as a renewable <u>energy</u> resource

Para 333 to 346 apply only to non-cultivated timber. It should be made clear in the text.

Section 5.9

Para 351 to 353 nicely describes the information needs for asset accounts for fish resources. Similar descriptions could be introduced for other asset accounts.

Para 353 the asset accounts for fish resources also record the stocks and changes in stocks of fish in the high seas over which a country has access to the resource and management responsibilities.

Para 358 should be checked against the latest development on the convention on the law of the sea based on the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea: http://www.un.org/Depts/los/index.htm

Some of the acronyms in section 5.9 are not too clear: e.g. ASFIS, ISCAAP, etc.

Table 5.9.2 We do not think that in the table we need the disaggregation between fixed assets and inventories but within the wild fish, it would be useful to disaggregate the once those stock that provide economic benefits from the other.

Para 370: This does not seem consistent with the SNA concepts: catch should be allocated not to the flag of the boat but to the residence of the operator.

Section 5.11

Para 437: The message of this paragraph is that conceptually and to be comprehensive the stocks of rivers are within the scope of the SEEA. However, the stock of the river is negligible with respect both of the flows of the river as well as other water resources. The stock of the river does not represent a storage for the resource like artificial reservoirs, lakes and aquifers do. The velocity of the water would be an important attribute of the statistical unit "river" and should be discussed in that context. For the sake of simplicity we would suggest deleting the second half of the para starting from "However".

We would suggest adding a category "soil water" after para 437 to explain that soil water is included in the asset classification for water resources but it is not meaningful to collect information on the stock of water in soil given its temporary nature. Water does not stay in the soil but it infiltrates in ground water or runs off in surface water or evaporates.

Para 439 i.: The para says that water can be extracted for final consumption. This is not consistent with Chapter 3 in which households extract water only in their capacity of producers. Water is a good and as such water abstraction for own use is considered a production process.
The last sentence in the para could read: "Water in rain-fed agriculture that is evapotranspired or is incorporated into products is thus recorded....."

Para 443: It would be useful to add a sentence to explain that national accounts data are collected at the administrative level while water data is collected at the river basin level. These usually are usually different and a common unit "accounting unit" should be defined. (It is mentioned in the SEEA-Water and will be further discussed in the Experimental Accounts for Ecosystems).