



DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS  
STATISTICS DIVISION  
UNITED NATIONS

SEEA Revision  
Issue 16  
Cover Note

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## Cover Note

### Issue #16: The treatment of water in artificial reservoirs

#### Outcome paper for global consultation

*Outcome Paper Issue #16: The treatment of water in artificial reservoirs*

#### Issue description

Considerable money is spent to build dams to retain the water. Also, continuous control and management of the water resources is exercised both in the case in which the water is used for abstraction, purification and distribution, or for other uses such as hydroelectric power generation. It is argued that in line with the definition of cultivated assets in the SEEA and in the SNA, water in the reservoirs should be considered a produced asset. This would imply that, in parallel with the treatment of natural growth of cultivated forest and fish as produced asset, precipitation and inflows of water in the reservoirs should be considered as capital formation. Should water in the reservoir be added to the classification of produced assets?

#### Background

The amount of water evaporated from surface water bodies can represent a large proportion of the available water. In particular, the World Commission on Dams (WCD) estimated that evaporation from reservoirs is in the order of 188km<sup>3</sup> per year, which equates to more than 8% of the totals human consumption of freshwater (WCD 2000). Other studies also show that the increased surface area of reservoirs often leads to high volumes lost by evaporation.

At present evaporation from artificial reservoirs is recorded in the System of Environmental and Economic Accounts 2003 (SEEA-2003) and the SEEA-Water asset account as part of accounting for the change in the stock of water between beginning and end of period. However, evaporation from artificial reservoirs and is not shown in the physical or monetary supply and use tables as it is considered a flow within the environment.

Modification of these accounts or changes to the relevant accounting treatment to better represent evaporation may lead to significant improvement in the representation of evaporation in the SEEA water accounts reflecting that the construction of dams can lead to a substantial increase in evaporation. In turn this could lead to better decisions on the building of reservoirs, the allocation of water, and the calculation of water consumption and productivity for the units operating artificial reservoirs.

Work on this issue has considered the accounting options for the treatment of artificial reservoirs. It has proved a challenging area in which to make recommendations and the feedback through global consultation will be of particular interest.

## Summary of outcomes

The investigation of the accounting options for the treatment of water in artificial reservoirs led to one recommendation. Recommendations were also made on some related aspects of water accounting.

**Recommendation 16.1:** That in the revised SEEA, the production boundary of the SNA should be extended such that water in artificial reservoirs should be treated as entering the supply of the economy at the time it enters the artificial reservoir and the net recharge of water to artificial reservoirs should be recorded as a change in inventories.

**Recommendation 16.2:** That for the purposes of the applying the treatment outlined in recommendation 16.1 the scope of artificial reservoirs should be man-made reservoirs used for storage, regulation and control of water resources where a regular human intervention is needed to maintain a certain water level, water volume, storage capacity or water quality.

**Recommendation 16.3:** That in the revised SEEA the various concepts around consumption and use within water, energy and material flow accounting should be aligned.

**Recommendation 16.4:** That in the revised SEEA the term net recharge be used to reflect the net inflows and outflows from artificial reservoirs and other water bodies including the loss of water through evaporation.

## Questions

1. Do you agree that in the revised SEEA, the production boundary of the SNA should be extended such that water in artificial reservoirs should be treated as entering the supply of the economy at the time it enters the artificial reservoir and the net recharge of water to artificial reservoirs should be recorded as a change in inventories?
2. Do you agree that for the purposes of the applying the treatment outlined in recommendation 16.1 the scope of artificial reservoirs should be man-made reservoirs used for storage, regulation and control of water resources where a regular human intervention is needed to maintain a certain water level, water volume, storage capacity or water quality?
3. Do you agree that in the revised SEEA the various concepts around consumption and use within water, energy and material flow accounting should be aligned?
4. Do you agree that in the revised SEEA the term net recharge be used to reflect the net inflows and outflows from artificial reservoirs and other water bodies including the loss of water through evaporation?
5. Any other comments?

To submit responses to these questions please complete the accompanying comment form available on the website. You are encouraged to submit a short response to the questions (yes/no/no comment) even if you have no further comments to submit.

**Deadline for responses: 17 January 2011**