

ISSUES PAPER FOR THE AEG JULY 2005 – SNA UPDATE ISSUE 31

WATER AS AN ASSET IN THE SNA

Executive summary

1. The treatment of water in the SNA needs amplification to allow for the greater recognition of the value of water as an increasingly scarce resource. To meet this need, the following recommendations are made.

2. *It is proposed that the definition of water resources be extended to cover rivers, lakes, artificial reservoirs as well as other surface catchments in addition to aquifers and other groundwater resources. The intent of the proviso “to the extent that their scarcity leads to the enforcement of ownership and /or use rights, market valuation and some measure of economic control” would stand though some changing of this wording will be needed arising from other discussions on the interpretation of ownership and control.*

3. *It is recommended that the SNA include guidance that water bodies should in principle be valued in a manner parallel to the valuation of mineral resources but with an indication that more pragmatic alternatives may have to be used such as estimates based on access fees.*

4. *The phrase “and associated surface water” should be added to land under cultivation.*

5. *It may be that the surface land associated with a water body is relatively small and of little value separately from the water body. In keeping with the recommendation on buildings and land under buildings, land and associated surface water should be allocated to either a category of land or to water resources depending on which element has the greater value.*

6. *The value of an artificial reservoir full of water may exceed the cost of building and maintaining the reservoir but this addition represents the value of the water per se. In principle this addition should be recognised as the value of the non-produced water resource but as noted in connection with land, it may not be possible to separate these in practice and in that case the allocation should be made between the reservoir and the water resource according to which has the greater value.*

7. *By extension of the treatment of carrying water as the production of a good and similar treatment of bottling and branding water, distribution of main water should be treated as the production of a good (water) and not just a service of moving water from one place to another. This is also consistent with the move to charge for mains water on a volumetric basis.*

8. *Where fees are levied for permission to deposit waste water into a body of water the fees should be treated in the same way as other fees to use natural resources, noting that the exact modalities for this are yet to be agreed by the Canberra II Group.*

9. Does the Group agree with these recommendations?

Background

10. Water is literally vital to life. In the west, we are so used to the idea that water is always available on demand and without apparent cost that we use the expression “on tap” to refer to anything which is freely available. While it is true that water in rivers, aquifers and in the form of rain is a gift of nature, arranging that it should be transported to a particular location to be available on demand and then arranging for it to be removed when not needed is clearly a human activity and an act of production. For many years, in many countries, the provision of running water and mains drainage has been regarded as an obligation of the public service. More recently, though, this premise has been challenged and increasingly the provision of water is treated as a normal economic activity, often in private hands. Various treatises, including a survey by the Economist in the edition of 19 July 2003 and a 1999 publication by OECD “The price of water” refer to the fact that still water tends to be used without regard to its potential scarcity now or in the future or to the need to preserve its quality. There is general consensus that the way to reverse this over-use is to treat water like any other commodity and to expect it to be charged for and in such a way that the costs of its provision are fully covered by appropriate pricing. Chapter 4 of the OECD publication just referred to quotes from a number of international agreements on the desirability of changing our thinking about water. One of the simplest is from the Dublin Statement on Water and Sustainable Development in January 1992 part of which reads “water has an economic value in all its competing uses and should be recognised as an economic good”.

11. In developing countries, the scarcity and thus economic value of water, especially water fit to drink, is more obviously recognised with many people facing significant costs for water or having to expend considerable time and labour in fetching it. Presciently enough, the 1993 SNA recognised this as an economic activity and specifically includes fetching water as falling within the production boundary “The supply of water is also considered a goods-producing activity in this context [of own account production]. In principle, supplying water is a similar kind of activity to extracting and piping crude oil.”(para 6.24). Lest this be thought to refer only to formal piping of water, annex 1, para 34 reads “The coverage of own-account production is clarified. The storage of agricultural goods produced by households is included within the production boundary as an extension of the goods producing process, as is the supply of water (water-carrying).”

The production process and pricing practices

12. The survey of practices in OECD countries in “The price of water” classifies water delivery and return according to the following scheme.

Water delivery

- Public supply¹
 - Potable
 - Non-potable
- Private abstraction/collection
 - Household
 - Industrial

Water return

- Via public supply
- To the environment

¹ This is supply to the public, not necessarily by the public sector

13. For most OECD countries (UK being the most notable exception) the public supply of water is increasingly charged for on a volumetric basis or on a basis which combines a volumetric basis with a standing charge. For private abstraction and collection (more properly perhaps described abstraction or collection for individual units) there may be no external costs, it may all be own costs. Not infrequently, though, and increasingly there is a fee levied for the right to abstract water. This again may be a flat fee or related to the quantity extracted.

14. The importance of private abstraction can be seen in relation to the total usage of water. In the Economist survey quoted above, the per capita withdrawals of water in 2000 were 945 cubic metres for Australia as against 201 cubic metres for the UK. Given the relative aridity of Australia and the notorious wetness of the UK these figures seem surprising until it is realised that a huge proportion of the water use in Australia is private extraction for irrigation and watering stock. Until recently there has been little incentive to limit the amount of water extracted and many boreholes ran continuously rather than to the extent required. Introducing fees for extraction is likely to have a major impact on the amount extracted and the preservation of water levels across the country.

15. Charging for water return is more variable. It is quite common for there to be no explicit charge for water return via the public supply, since it is assumed that effectively all that is supplied is eventually returned and so a volumetric charge on delivery can cover both delivery and return. Water return to the environment was for a long time not charged for and even now it is more frequently the case that environmental standards on the quality of water returned to the environment are imposed with fines for non-compliance than an explicit charge for the right to return water to the environment though this practice is increasing.

Implications for the SNA

16. If the government privatises the supply of water and demands a regular payment from the privatised company, or if government makes a charge for the right to abstract water or to return water to the environment, these payments should be treated in the same way as similar charges made in respect of mineral exploitation, that is as a form of property income, representing the economic rent on the asset water. A permit to extract water, if it is tradeable, comes into the categories of tradeable permits to be discussed under other items for discussion by the Canberra II Group.

17. For a unit operating a supply of water to the public, any excess of operating surplus over the capital services provided by the fixed capital used to operate the public supply should also be regarded as economic rent on water.

18. As water demand increases and government and enterprises restrict demand by raising the price of water, the economic rent element of the production account is set to increase accordingly. The SNA should be framed in such a way as to foresee this possibility and to embody appropriate recommendations to record this phenomenon.

The position in the 1993 SNA

19. The SNA refers to water twice in the itemisation of assets and once under the production boundary.
20. The asset “water resources” covers “aquifers and other groundwater resources to the extent that their scarcity leads to the enforcement of ownership and /or use rights, market valuation and some measure of economic control”.
21. Two of the categories of land are more fully described as “recreational/other land and associated surface water”. For land under cultivation, which does not presently include the qualifier about water, the Canberra II Group proposes that a change be made so that it does.
22. Water is also mentioned as a commodity in the context of own-account production. Para 6.24 reads in part “The supply of water is also considered a goods-producing activity in this context. In principle, supplying water is a similar kind of activity to extracting and piping crude oil”.

Reasons for the proposed changes

23. Despite these references, the coverage of water in the SNA is partial. Given the increasing concern about the judicious use of water and predictions of scarcities, there is a need to ensure that the treatment of all aspects of water is more comprehensive in the updated version of the SNA.

Bodies of water

24. It is not clear that it is necessary to restrict the coverage of water resources to underground or even standing sources of water. It is true that at the time the 1993 SNA was being drafted, it was thought that these were likely to be the only cases where treating bodies of water as assets might be necessary. Since then, though, the realisation of the potential scarcity of water and the importance of sources of supply has increased awareness of the value of rivers, lakes and other water catchments. In addition more awareness of the fact that much water in lakes is “fossil water” of great age, unaffected by the drawing off and replacement of the superficial levels of the lake, means that in many cases it is lakes rather than aquifers which have the more obvious parallel with mineral deposits.

25. *It is therefore proposed that the definition of water resources be extended to cover rivers, lakes, artificial reservoirs as well as other surface catchments in addition to aquifers and other groundwater resources. The intent of the proviso “to the extent that their scarcity leads to the enforcement of ownership and/or use rights, market valuation and some measure of economic control” would stand though some changing of this wording will be needed arising from other discussions on the interpretation of ownership and control.*

Valuation of water

26. The valuation of water in a body does not present any conceptual problems. As with mineral resources, there is a resource rent associated with the water which represents the excess of the value a unit of water can command in the market over the costs of getting it to the market, including the costs associated with the fixed capital necessary to transport it there. At present this resource rent may be close to zero or actually zero but if forecasts of water shortage prove correct

and the price of water increases, then the resource rent, and the value of a body of water, will increase commensurately.

27. In practice, it may be difficult to estimate the value of a body of water because of uncertainties about the rate of renewal of a water source and thus its life length. A pragmatic alternative may be to base the value on the fees paid for access to the water.

28. *It is recommended that the SNA include guidance that water bodies should in principle be valued in a manner parallel to the valuation of mineral resources but with an indication that more pragmatic alternatives may have to be used such as estimates based on access fees.*

Water associated with land

29. Surface water associated with land is not valued separately but intrinsically with its associated land. The amenity value of this water is likely to lead to an enhanced value of the land in question. There is no need to try to separate the value from the value of the associated land, but the change in value of the land due to the presence of the water should be taken into account when valuing the land.

30. *As noted above, the phrase “and associated surface water” should be added to land under cultivation.*

31. *It may be that the surface land associated with a water body is relatively small and of little value separately from the water body. In keeping with the recommendation on buildings and land under buildings, if the value of water cannot be separated from the value of land, land and associated surface water should be allocated to either a category of land or to water resources depending on which element has the greater value.*

Produced vs non-produced

32. Some water catchments, such as artificial reservoirs, are man-made. The decisions about whether to treat these as structures or “land improvements” does not alter the fact that following the decision of the Group on the reclassification of land improvements to be a form of fixed asset, these reservoirs will appear on a balance sheet as fixed assets and thus produced. The question arises of whether the water caught in them should then also be treated as produced. While it is possible to argue that the effort of maintaining the reservoir is sufficient to constitute a production process related to the production of water as a good, it can also be argued that the replenishment of the water arises via a natural process. It is therefore suggested that within the SNA water in a reservoir should be treated as a non-produced resource.

33. *The value of an artificial reservoir full of water may exceed the cost of building and maintaining the reservoir but this addition represents the value of the water per se. In principle this addition should be recognised as the value of the non-produced water resource but as noted in connection with land, it may not be possible to separate these in practice and the allocation should be made between the reservoir and the water resource according to which has the greater value.*

The supply of water

34. As noted above, the carrying of water is within the production boundary and is treated as the production of a good, the water itself and the transport necessary to get it from the source to

place of use being embodied in the good in question. The bottling and distribution of water as “branded water” also represents a production process whereby the initial natural resource is brought within the production process and combined with travel and distribution margins before sale.

35. *By extension, therefore, it would seem desirable to agree that distribution of main water is the production of a good (water) and not just a service of moving water from one place to another. This is also consistent with the move to charge for mains water on a volumetric basis.*

The disposal of waste water

36. Not all water is used once only and then disposed off. Water which is not fit for human consumption may be used to water animals or vegetation, for example. Such uses may increase in future as water is more commonly regarded as a commodity like any other. Previously used water could be regarded as produced water, being a secondary product of the industry giving rise to the waste water, if there is a market for it and it has a positive value.

37. More commonly, at least at present, waste water is disposed of via a mains drainage system or directly to the environment. As noted above, to date there is seldom an explicit charge made for either option. Some instances of direct charging for the right to return water to the environment do occur and so the SNA must prescribe how these should be recorded.

38. *It is recommended that where such fees are levied, they should be treated in the same way as other fees to use natural resources., noting that the exact modalities for this are yet to be agreed by the Canberra II Group.*