



Australian Government Water Accounting

Activities of the Bureau of Meteorology and the Australian Bureau of Statistics

Water accounting is a way of arranging water information to suit a variety of management and policy needs. There are many types of water accounts produced by a variety of Australian business and government organisations, from river catchment geographic regions to river basins, states, territories and at the national level. As competition for water resources increases so too does the need to fully and consistently account for how water is shared between the economy, people and the environment. In Australia, several State government agencies produce water accounts, while two Federal government agencies – the Australian Bureau of Statistics and the Bureau of Meteorology – produce national water accounts of different types, for differing but complementary purposes. Both report annually on the year from 1 July to 30 June.

The Bureau of Meteorology's *National Water Account* (NWA) and the Australian Bureau of Statistics' *Water Account Australia* (WAA) emphasise different aspects of Australian water resources and the use of these resources by the Australian community. The NWA focuses on the volume of water in the environment¹, its availability, the rights to abstract water and the actual abstraction² over time. The NWA includes information on climate and weather impacts on water availability, along with water management policies and practices. The WAA shows how much water is used³ by human activity. It focuses on flows of water from the environment to the water supply industry and other economic activities, particularly agriculture and the flows of water from the water supply industry to households and businesses. The WAA also records the monetary values associated with water supplied and used in the economy. A particular feature of the WAA is the ability to link water use to the economic data contained in the System of National Accounts (from which the headline indicator Gross Domestic Product is derived).

The area of intersection between the NWA and the WAA is the amount of water abstracted from the environment by the water supply industry and other economic activities. The intersection between the two national water accounts is depicted in Figure 1. The NWA focus is represented on the left hand side by the blue sphere and WAA focus is represented on the right hand side by the yellow sphere.

The NWA reports on the total water resource of a region: the inputs to, outputs from and movements of water within a hydrological region. It includes atmospheric inputs and outputs, such as rainfall and evaporation, as well as flows of water through rivers, pipes, channels and aquifers within the region. The water available for abstraction is a subset of this total water resource, as some of the water is not physically or legally accessible. Legal rights and claims to water regulate the volume of water that is available for abstraction by individuals and businesses. The volume actually abstracted is also a function of their needs at the time. These key aspects of the NWA are represented in Figure 1 by the three overlapping shapes within the sphere labelled Water in the Environment.

The NWA reports the volume of water that was stored within a region, existing entitlements to the water, the volume of water allocated for abstraction and the volume actually abstracted in a given year. The series of NWAs will show changes in these volumes over time. The changes in water stored arise from inflows to, and outflows from the region. Natural processes, such as rainfall, evaporation and the drainage of rivers to the sea produce flows of water. Human activity also produces flows of water, such as wastewater discharges to the sea or abstraction of water for use in the economy. The latter is described in detail in the WAA.

¹ Environment, in this context, encompasses natural and man-made environments.

² Abstraction is the removal of water from a store of water resources. The store may be natural, such as a pond, lake, aquifer or river, or man-made, such as a tank, reservoir, channel or pipe. It may be located above or below the surface of the earth. Removal may be by diversion or pumping and result, at least temporarily, in a depletion of the resources.

³ Water use can be 'consumptive' or 'in-stream'. Consumptive water use is the part of water use which is not distributed to other economic units and does not return to the environment (to water resources, sea and oceans), because during use it has been incorporated into products or consumed by households or livestock. In-stream use refers to the use of freshwater *in situ*. The water is returned to its source after use.



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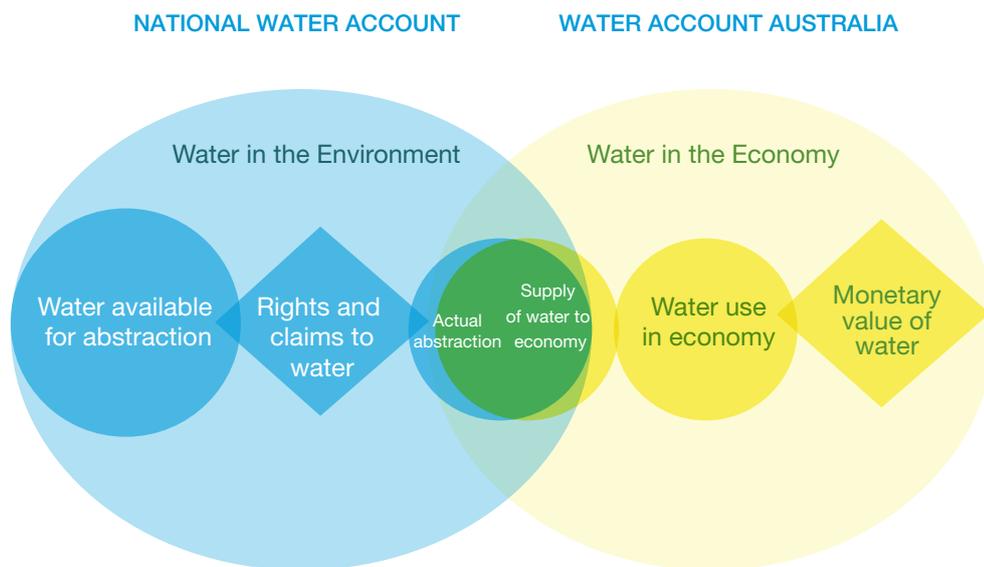


Figure 1. The aspects of, and intersection between, the National Water Account and the Water Account Australia

Source: Australian Bureau of Statistics and Bureau of Meteorology

The WAA provides detail on how abstracted water is supplied and used within the economy, along with the monetary values associated with the supply and use of water. Water is abstracted from the environment, generally by the water supply industry, and supplied to users, including households and businesses. The WAA also tracks the monetary values associated with the flow of water through the economy and its return to the environment. These key aspects of the WAA are represented in Figure 1 by the overlapping shapes within the sphere labelled Water in the Economy.

The **principal** intersection between the two accounts is the actual abstraction of water. Water is abstracted for own use (primarily for agriculture) and by the water supply industry for supply to the economy. Within a geographic region, the volume, in the NWA, of actual water abstraction is equal to the volume, in the WAA, of water abstracted for own use (agricultural irrigation) plus water abstracted for supply to others. This equivalence facilitates the integration of information from the two accounts in derived reports. It is represented in Figure 1 by the small green shape representing the intersection of the NWA and the WAA spheres.

It is important to note, however, that the reporting units for the two accounts are different; where the WAA mainly reports on a jurisdictional basis, the NWA reports on a hydrological region. So, while the NWA and WAA will complement each other, the Murray–Darling Basin is currently the only common region reported.

The NWA and the WAA have both been developed in accordance with rigorous conceptual frameworks. Preparation of the NWA is guided by the Water Accounting Conceptual Framework and Australian Water Accounting Standards. The preparation of the WAA is guided by the System of Environmental–Economic Accounting for Water.

These two standards for report preparation were developed separately and for different purposes. However, they do have similar conceptual bases and prescribe similar reporting characteristics, namely:

- the data items to be reported
- the quantification units to be used
- the rules for collecting and aggregating data
- how the information is to be presented.

For further information

For more information, visit the Bureau of Meteorology's [National Water Account webpage](#) and the Australian Bureau of Statistics' [Water Account Australia webpage](#).

