

6 Valuation Methods to leverage the hidden economic contribution of water

Water's pivotal role in our economies is undeniable, yet we frequently fall short in appropriately evaluating its economic significance. Below are six monetary valuation methods that can help uncover the value added by water resources to various sectors of the economy.



1 Production function approach

By quantifying the relationship between water usage and output levels of certain economic activities, we can determine water's marginal productivity and, consequently, its economic value. This method can be applied to evaluate water's contribution to production processes across various sectors, such as agriculture, industry, and services. For instance, the value of water for irrigation can be assessed by comparing crop yields per acre of irrigated fields with those of rainfed fields in a particular region. Additionally, production functions can be used to understand how changes in water quality impact production, highlighting the economic benefits of maintaining good water quality.



2 Replacement or damage cost avoidance

Can be used to calculate the economic value of regulating services provided by water-related ecosystems such as the protective effect of natural systems from extreme weather events such as droughts and floods. Flood damage cost estimation models can show the reconstruction and repair costs that can be avoided, for instance, due to the presence of a floodplain acting as a natural barrier. The logic is that the value of that floodplain would be at least equal to the economic costs that would be required to repair the damages from floods that are otherwise contained by this nature-based solution.



3 Contingent valuation

Involves directly asking individuals or communities about their willingness to pay (WTP) for improvements in water availability or quality. Contingent valuation surveys can be used for assessing the shadow value of water for Water, Sanitation and Hygiene (WASH), industry, or agriculture. Contingent valuation can help understand how much investments could be locally raised for maintaining or expanding water-related services, e.g., assessing the WTP by households to get connected to the water supply grid or from constructing a treatment plant to improve the quality of a polluted water body.



4 Hedonic pricing

By examining the prices of goods or properties in relation to their water-related attributes (e.g., proximity to water bodies), this method can estimate the economic value individuals place on water resources. In tourism, this often translates into the higher price of rooms with a "sea view". Hedonic pricing can also be used to assess the value lost due to degradation and fluctuations in water-related ecosystems, e.g., by monitoring prices of properties close to eroding shorelines or lakes with recurring harmful algal blooms.



5 Travel cost method

Can be used to estimate the value of water-based recreational activities by calculating the travel costs incurred by individuals to access water bodies for activities such as fishing, boating, or swimming. For instance, the value of a lake could be evaluated by surveying those who come to see it on how much they paid to see it, adding costs such as hotel, flights, car rental, etc. This could be used to estimate the preservation value, meaning that the value of preserving the water body in its current condition is at least equal to the amount people spend to come and visit it.



6 Next best alternative method

Sheds light on the economic gains that are derived from the existing water-related infrastructure and services. Imagine that the primary source of water in your region runs dry, what would be the next best alternative? Pumping from distant sources, tapping groundwater, or exploring desalination are all likely to involve more capital and operations costs. Performing next best alternative estimates could be an entry point for investing in maintaining existing systems. For instance, the costs of a potential desalination plant could legitimate investing in installing water saving technologies or in groundwater replenishment projects.

Finding the right methodology to understand the economic value of water implies having a good understanding of the data available, what the value is needed for, and how precise the estimation needs to be. To help you navigate through this process, the [SDG 6 IWRM Support Programme](#) is available to provide technical assistance. Contact us on sdg6iwrmsp@gwp.org.

