

# SHORTAGE AND EXCESS OF WATER

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Water is an essential good for life, but It must be provided in adequate doses. Its scarcity and/or excess can have serious socio-economic and environmental consequences. The excess of water can derive, for example, in the overflow of rivers and floods with very damaging effects. The floods that have occurred in Europe since 1998 have caused some 700 deaths, the displacement of close to half a million people and at least 25,000 million euros in loss of insured property. The nine largest floods that occurred between 2000 and 2005 have

caused 155 deaths and economic losses of more than 35,000 million euros.

In our country, when talking about floods, almost all of us think of those that have occurred in recent years in places in Andalusia, Aragon, Catalonia, Galicia, Navarra or the Basque Country. The damages of these floods - in terms of infrastructure deterioration, property loss, ecosystem degradation, destruction of agricultural crops, public health problems or loss of human lives (the 9 severe floods that occurred in Europe between 2000 and 2005 caused 155 deaths ) - they were huge. So was its economic cost.

The total economic cost of floods can be calculated using different valuation techniques, all of them quite consistent, which allow monetary values to be assigned to the different goods and services affected. Damage to goods and services that are bought and sold on the market (for example, agricultural crops or infrastructure) can be calculated using conventional economic valuation techniques. To calculate damages to goods and services that are not bought and sold on the market (for example, ecosystems and their services, landscapes, or human lives), it is necessary to employ unconventional approaches: (1) "stated preferences" methods, which identify preferences through direct surveys (for example, contingent valuation methods); (2) "revealed preference" techniques, which hedonic markets use to estimate values (for example, property value approaches and land value approaches); (3) "substitute markets" approaches such as the cost of travel method (another revealed preference approach) or; (4) benefit transfer models (extrapolation of the results of other similar studies).

With the application of these techniques, the economic discipline has gone from a world where the total economic cost of the damages associated with natural disasters such as floods were "unknown" or "incalculable" (a number between zero and infinity), to another where All kinds of estimates have been made and published that have made us aware of the true cost associated with these natural phenomena.

Armed with this information, and aware that climate change will increase the risk of flooding, decision makers should accelerate the introduction of water retention measures to control the level and flow of water and thus reduce the risk. of flood. A good alternative are natural water retention measures (rehabilitation of watercourses, moisture recovery, soil management to increase its capacity to absorb water, implementation of sustainable urban drainage systems, etc.), which are less exploited than non-impact measures. natural (dikes, etc.) but surely more interesting due to its lower cost and aggressiveness with the natural environment.

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