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## Intelligent Databases Assist Transparent and Sound Economic Valuation of Ecosystem Services

### Abstract

Assessment and economic valuation of services provided by ecosystems to humans has become a crucial phase in environmental management and policy-making. As primary valuation studies are out of the reach of many institutions, secondary valuation or *benefit transfer*, where the results of previous studies are transferred to the geographical, environmental, social, and economic context of interest, is becoming increasingly common. This has brought to light the importance of environmental valuation databases, which provide reliable valuation data to inform secondary valuation with enough detail to enable the transfer of values across contexts. This paper describes the role of next-generation, intelligent databases (IDBs) in assisting the activity of valuation. Such databases employ artificial intelligence to inform the transfer of values across contexts, enforcing comparability of values and allowing users to generate custom valuation portfolios that synthesize previous studies and provide aggregated value estimates to use as a base for secondary valuation. After a general introduction, we introduce the Ecosystem Services Database, the first IDB for environmental valuation to be made available to the public, describe its functionalities and the lessons learned from its usage, and outline the remaining needs and expected future developments in the field.



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