

**Valuation Methods (source: Brander, L.M., van Beukering P., Balzan, M., Broekx, S., Liekens, I., Marta-Pedroso, C., Szkop, Z., Vause, J., Maes, J., Santos-Martin F. and Potschin-Young M. (2018). Report on economic mapping and assessment methods for ecosystem services. Deliverable D3.2 EU Horizon 2020 ESERALDA Project, Grant agreement No. 642007)**

Valuation method	Acronym	Approach	Application to ecosystem services	Example ecosystem service
Choice Modelling (Discrete Choice Experiment; Conjoint Analysis)	CE	Ask people to make trade-offs between ES and other goods or income to elicit willingness to pay	All ecosystem services	Biodiversity; recreation; landscape aesthetics; flood risk attenuation
Contingent Valuation	CV	Ask people to state their willingness to pay for an ES through surveys	All ecosystem services	Biodiversity; recreation; landscape aesthetics; flood risk attenuation
Damage Cost Avoided	DC	Estimate damage avoided due to ecosystem service	Ecosystems that provide storm, flood or landslide protection to houses or other assets	Coastal protection by dunes; river flow control by wetlands; landslide protection by forests; carbon sequestration
Defensive Expenditure	DE	Expenditure on protection of ES	ES for which there is public or private expenditure for its protection	Recreation and aesthetic values from protected areas
Group Valuation (Participatory Valuation)	GV	Ask groups of stakeholders to state their willingness to pay for an ES through group discussion	All ecosystem services	Biodiversity; recreation; landscape aesthetics; flood risk attenuation
Hedonic Pricing	HP	Estimate influence of environmental characteristics on price of marketed goods	Environmental characteristics that vary across goods (usually houses)	Urban green open space; air quality moderated by ecosystems
Input-Output Modelling	IO	Quantifies the interdependencies between economic sectors in order to measure the impacts of changes in one sector to other sectors in the economy. Ecosystems can be incorporated as distinct sectors.	Ecosystem services with direct and indirect use values, particularly inputs into production	Ecosystem inputs into agriculture; or into the tourism sector
Market Prices (Gross Revenue)	MP	Prices for ES that are directly observed in markets	ES that are traded directly in markets	Timber and fuel wood from forests; clean water from wetlands
Net Factor Income (Residual Value; Resource Rent)	FI	Revenue from sales of ecosystem-related good minus cost of other inputs	Ecosystems that provide an input in the production of a marketed good	Filtration of water by wetlands; commercial fisheries supported by coastal wetlands

Opportunity Cost	OC	The next highest valued use of the resources used to produce an ecosystem service	All ecosystem services	The opportunity cost of ecosystem services from a natural ecosystem might be the value of agricultural output if the land is converted to agricultural instead of conserved in a natural state.
Production Function	PF	Statistical estimation of production function for a marketed good including an ES input	Ecosystems that provide an input in the production of a marketed good	Soil quality or water quality as an input to agricultural production
Public Pricing	PP	Public expenditure or monetary incentives (taxes/subsidies) for ES as an indicator of value	ES for which there are public expenditures	Watershed protection to provide drinking water; Purchase of land for protected area
Replacement Cost	RC	Estimate the cost of replacing an ES with a man-made service	ES that have man-made equivalents	Coastal protection by dunes (replaced by seawalls); water storage and filtration by wetlands (replaced by reservation and filtration plant)
Restoration Cost	RT	Estimate cost of restoring degraded ecosystems to ensure provision of ES	Any ES that can be provided by restored ecosystems	Coastal protection by dunes; water storage and filtration by wetlands
Social Cost of Carbon	SC	The monetary value of damages caused by emitting one tonne of CO <sub>2</sub> in a given year. The social cost of carbon (SCC) therefore also represents the value of damages avoided for a one tonne reduction in emissions.	Carbon storage and sequestration	Carbon sequestered and stored by protected or restored forests
Travel Cost	TC	Estimate demand for ecosystem recreation sites using data on travel costs and visit rates	Recreational use of ecosystems	Recreational use of national parks
Value Transfer (Benefits Transfer)	VT	Estimate the ES value for a "policy site" using existing information from a different "study site(s)".	All ecosystem services	Biodiversity; recreation; landscape aesthetics; flood risk attenuation
Other	OT			