

Methodology of economic assessment of forest resources: why the system fails working

Session B4: Science policy interaction

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...THESE SPECIES ARE UNPROFITABLE, SO THEY WILL BE LAID OFF.

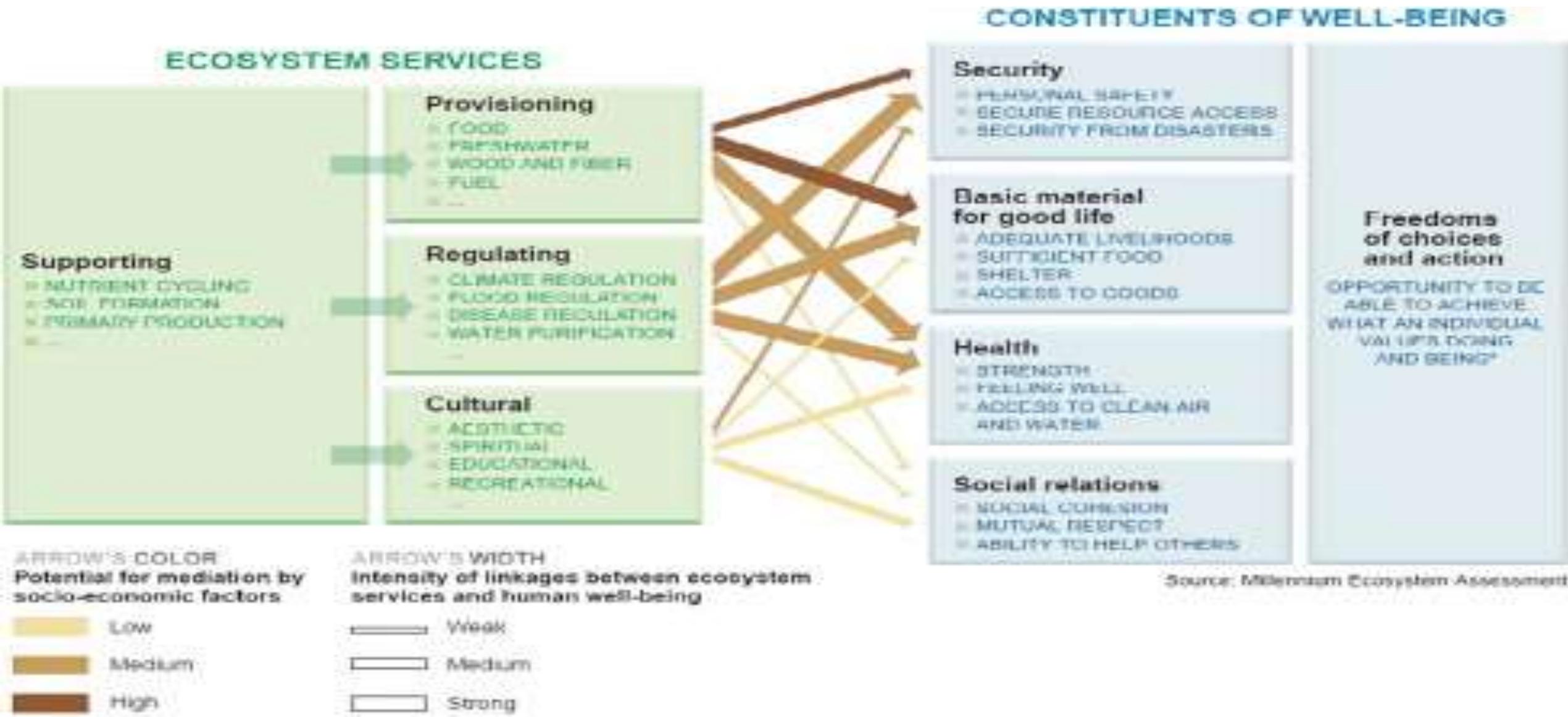
GLOBAL ECONOMY

CONSULT

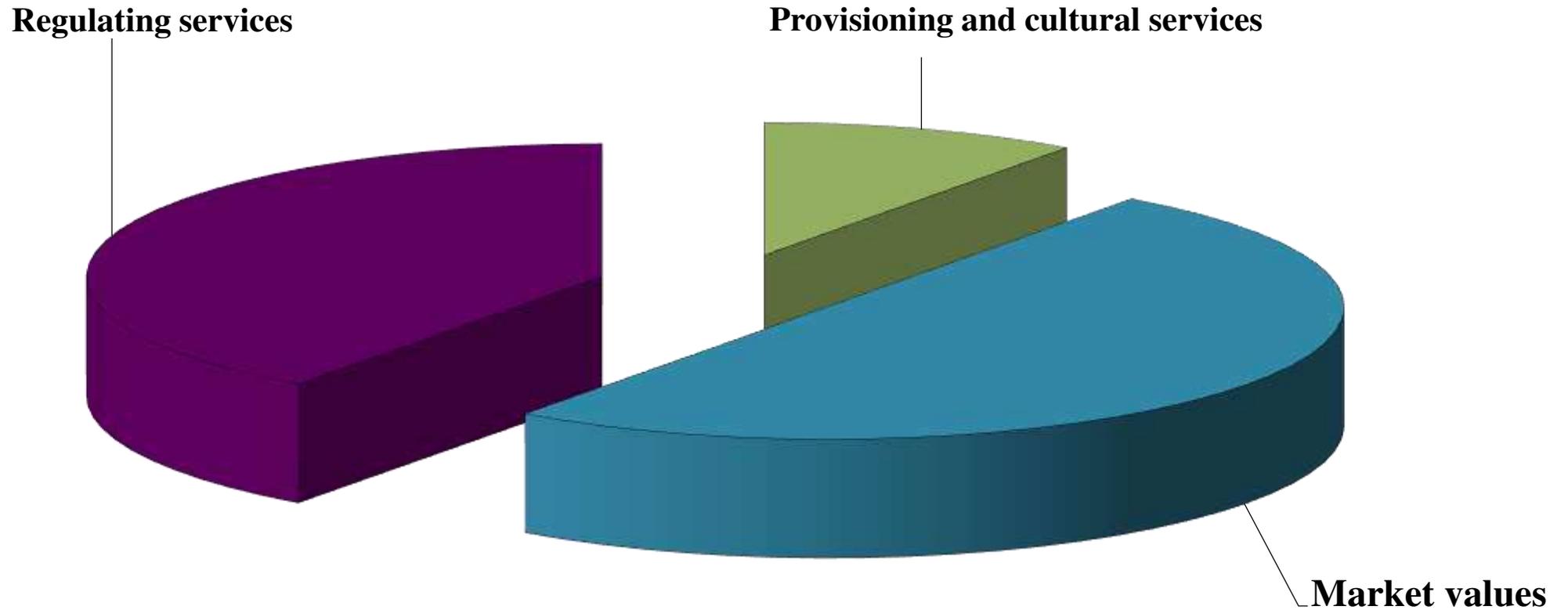
UH... CAN EVERYTHING BE MEASURED IN MONEY?

YEAH, MAN... FOR EXAMPLE, IF IT WASN'T FOR US DUNG DECOMPOSERS, THE WORLD WOULD DROWN IN SHIT.

Ecosystem services and human wellbeing



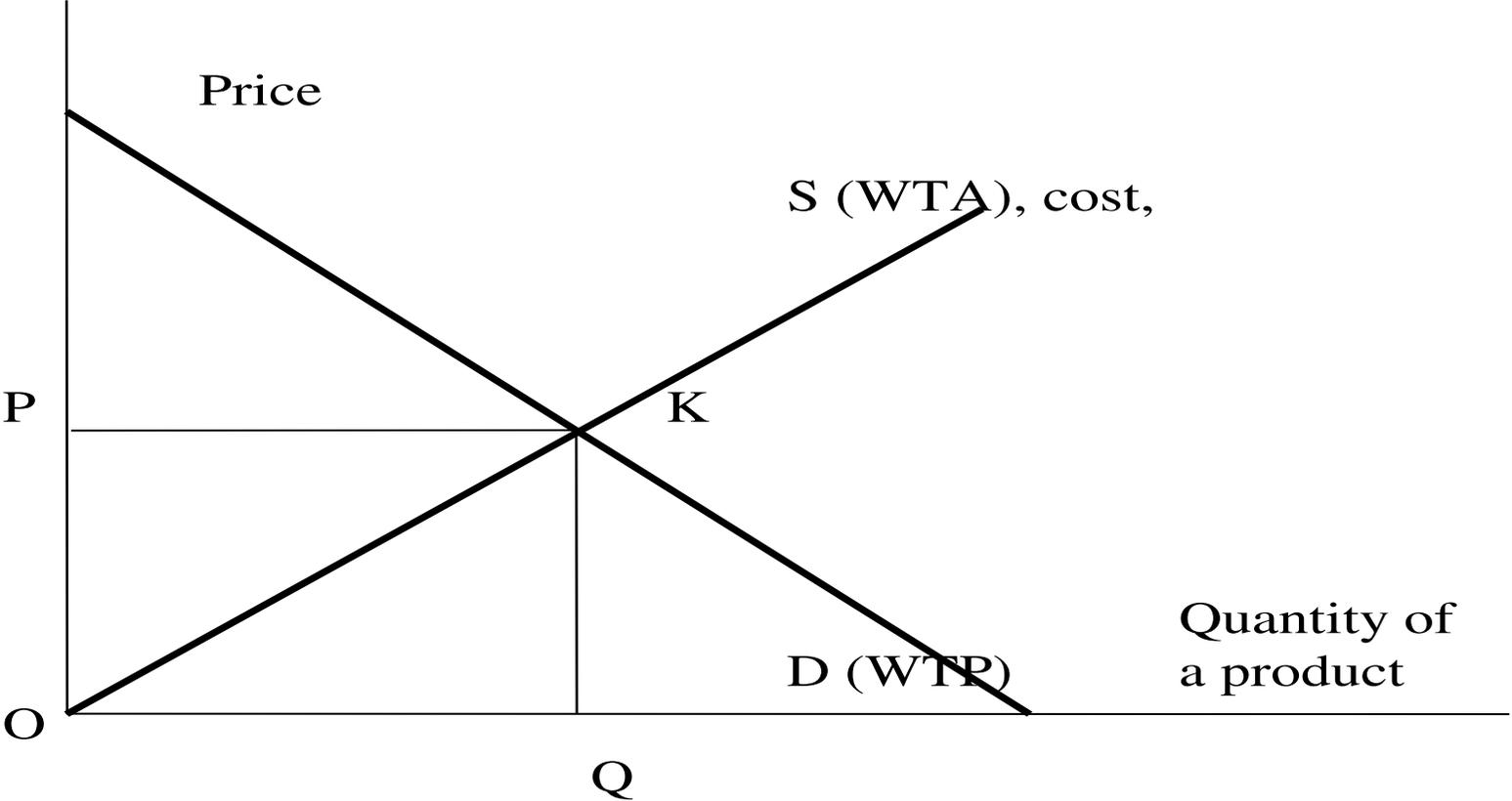
Ecosystem economic values



Classification of the ecosystem values

Use values	Direct (Directly consumed)	Economic values, directly consumed	Timber, fuelwood, grain, fish, recreation
		Ecological values, which support life and economic activity on the Planet	Atmospheric, water and soil protection, climate, biodiversity, other unknown functions
	Indirect (spiritual)	Values in mind: arts, morality, religion, ethics linked to forest and nature in general	Material carriers: humans, objects of art, ecosystems
Nonuse values	Optional	Values to be used in the future	National parks, future medicines, new uses
	Existence	Values, that humans consider to be important, even if they have never seen them or intend to use	The Antarctic, polar bear
	Bequest	Values, that people want to preserve for the future generations	Resorts, Redwood park

Three concepts of product value



Three groups of methods to define ecosystem values



Ecosystem values and their evaluation methods

Ecosystem value/ Evaluation methods	Market pricing		Methods of evaluation based on Investment pricing (costs)	Methods of evaluation based on Hypothetical market prices
	Products	Surrogates of the products		
	- Price evidence method - Residual value - Production increase or lost	- Surrogate products - Shadow prices	- By cost of the product - By cost of the substitute	- Travel cost method - Contingent valuation method - Hedonic method
Direct economic values: Timber, fuelwood, food, medicinal products, fish, services	- Price evidence - Residual value - By product increase or lost	- Surrogate products - Shadow prices	- By cost of the product - By cost of the substitute	
Recreation services				- Travel cost method - Contingent valuation method - Hedonic method
Direct environmental values: • Atmosphere-forming functions • Water and soil protection functions • Climate regulating • Biodiversity • Other unknown functions		- Surrogate products - Shadow prices	- By cost of the product - By cost of the substitute	- Travel cost method - Contingent valuation method - Hedonic method
Indirect (spiritual) values: aesthetic, moral, religious, cultural values of forest				- Contingent valuation method - Hedonic method
Unused values of nature: optional, existence and bequest				- Contingent valuation method - Hedonic method

TEV - Total economic valuation of forest resources

$$\text{TEV} = \text{UV} + \text{NV} = \text{Direct}(\text{Econ} + \text{Ecol}) + \text{Indirect} + (\text{Opt} + \text{Exis} + \text{Beq})$$

Total economic valuation is sum of all values of a resource. This methodology is debatable on the following reasons:

- Total economic valuation of forest is based on three groups of methods: (1) by market marginal prices, (2) by cost - WTA - and (3) hypothetical prices based on WTP – willingness to pay. All these three are not subject to summation
- Total forest economic valuation is based on partial equilibrium analysis. Ecological values are subject for the general equilibrium analysis.
- There is no criterion for the veracity of a total assessment, since there is no real market for ecosystem services

One of bad examples of “practical evaluation”



Pend Oreille River - \$US94000

Conclusion

- Total economic valuation (TEV) of forest is dead-end branch of the economic thought evaluation
- The idea of a total economic valuation (TEV) of forest resources stems from the theory of multiple-use sustainable forest management. Since the recent paradigm shift to ecosystem management, the idea fails working.
- New approaches to forest resources assessment are to be developed based on the ecosystem management concept

Thank you