

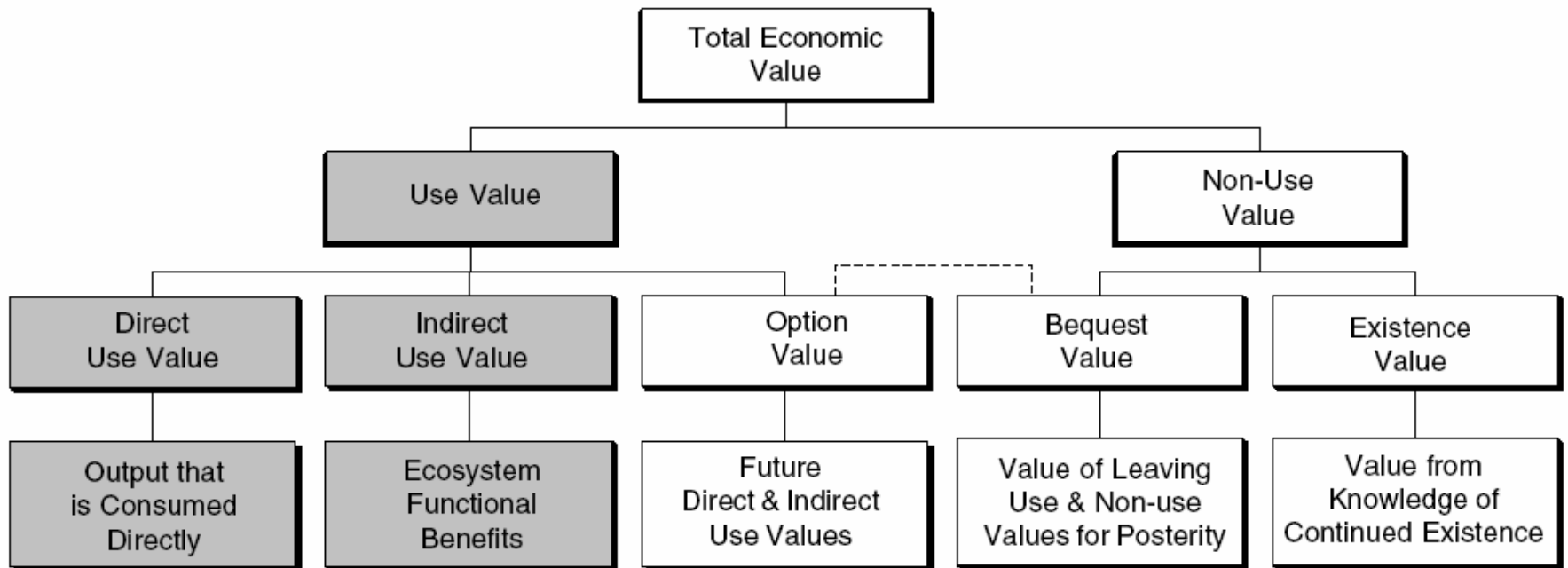


**Linking environmental flows,
ecosystem services and economic
value**

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Types of Values



Intrinsic Value

Checklist

Service sustained by environmental flows		Value type	Valuation method	Value (\$/ha/year)	
				Global	Developing
Production	Water for people	Direct use	Revealed preference	50-7500	50-400
	Fish/shrimp/crabs			200	10-750
	Agriculture and grazing			40-500	10-400
	Wildlife (for food)			40-500	1-300
	Vegetables and fruits			40-400	1-200
	Fibre/organic raw material			50	1-40
	Inorganic raw material			30-200	1
Regulation	Water quality control	Indirect use	Cost based (shadow price)	60-6700	20-1400
	Flood mitigation			20-5500	10-1400
	Groundwater replenishment				10-100
	Erosion control		Benefit transfer		20-120
	Carbon sequestration		100-300	2-2000	
Information	Recreation and tourism	Use, option, bequest, existence	Stated preference Benefit transfer	250-3000	20-300
	Biodiversity conservation				1-30
	Cultural/religious activities			30-1800	100
Total Economic Value (TEV)				100-400	30-3000

Conceptual overview of tool

MIKE Basin

Domestic water supply

Water for irrigation

Water for industry

Environmental Flows

Excel

Value

Value

Value

Ecosystem services

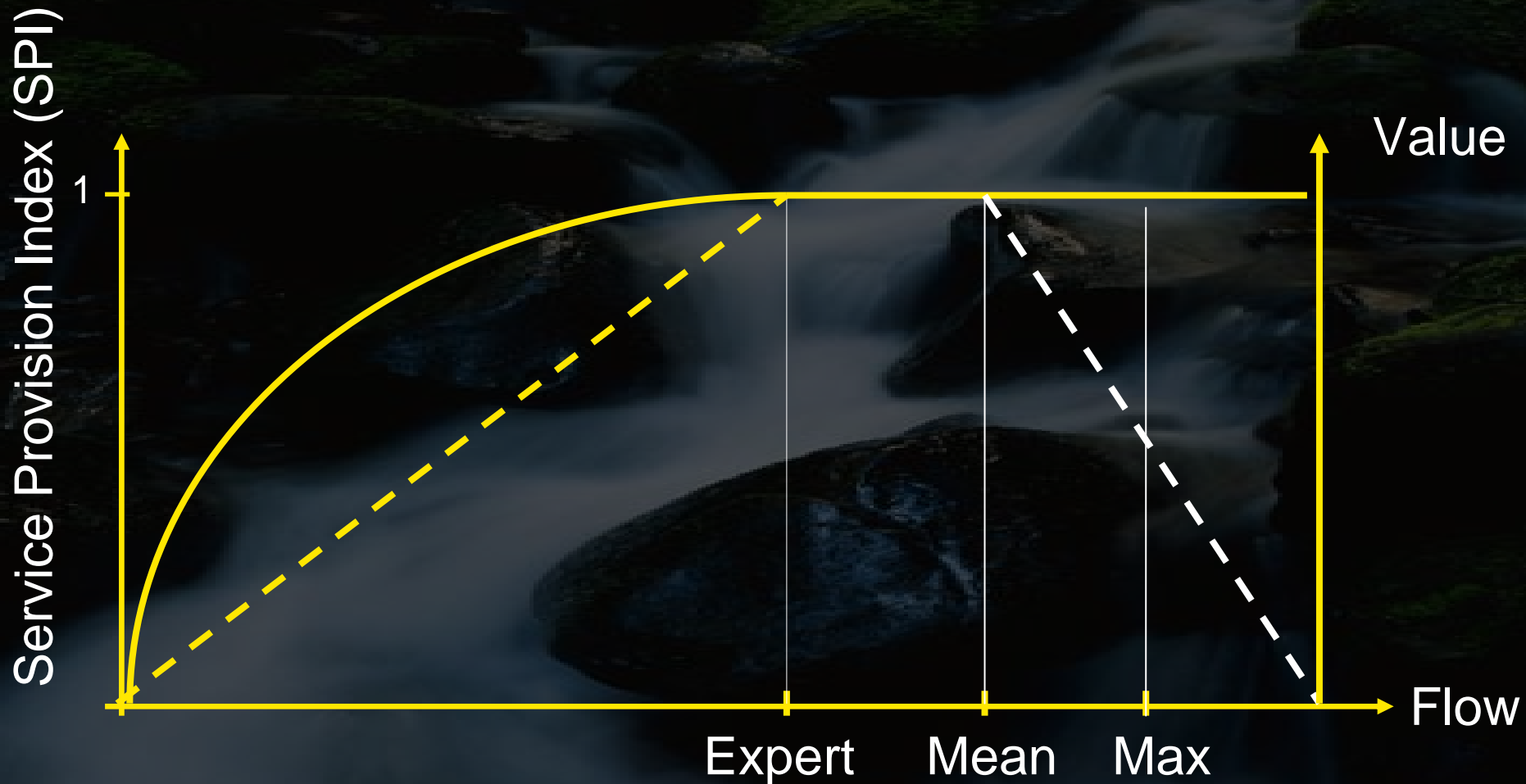
Value

Service Provision Index

Decision Support Tool



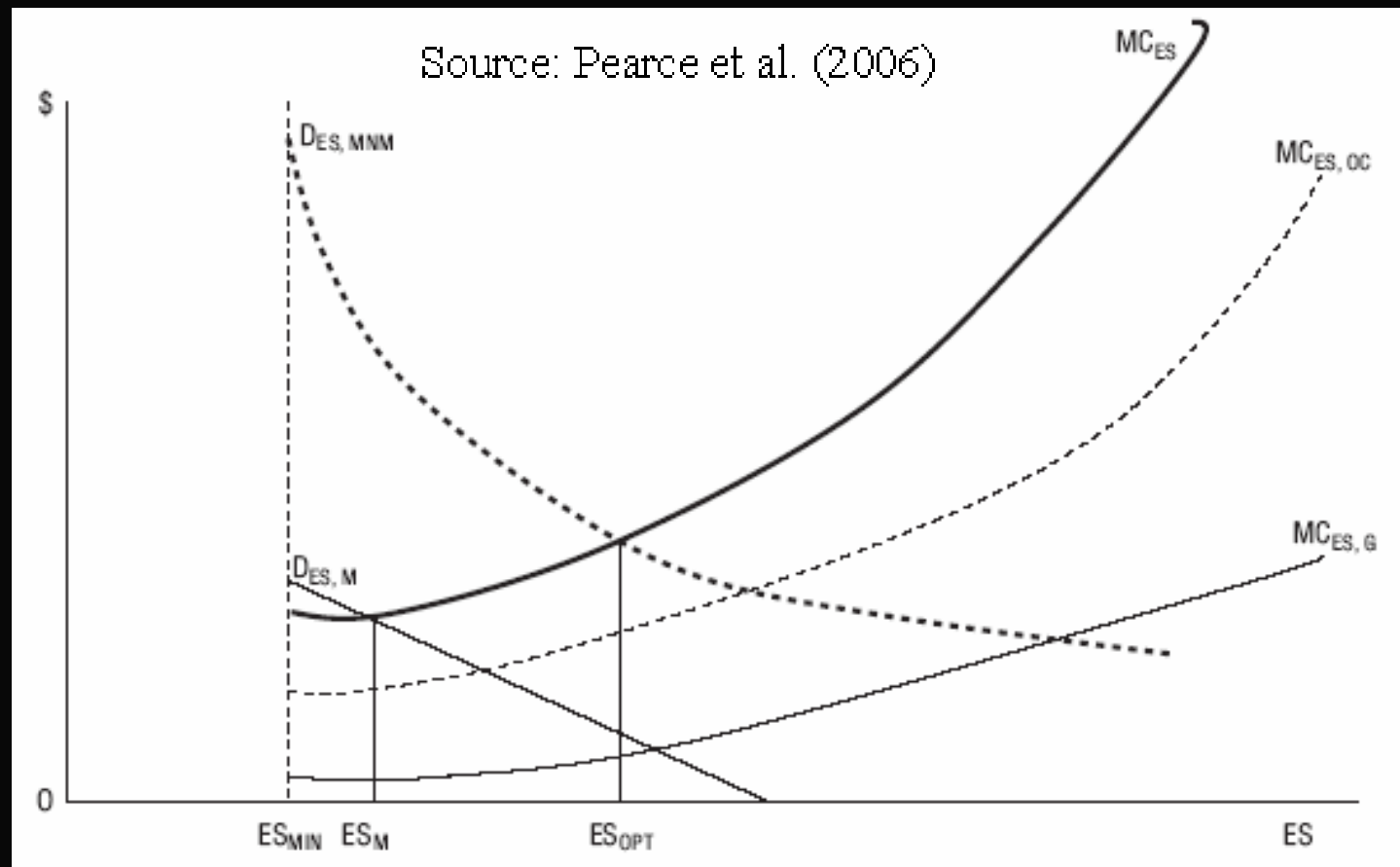
Linking Flows, Service and Value: The Service Provision Index



Service Provision Index (SPI)

Phase	Step
Linking flows to services	Identifying all flow related ecosystem services
	Selecting the most important services
	Defining most important flow classes for each service
	Quantifying links between flow and each service
	Calculating the Service Provision Index (SPI) for each service
Linking services to values	Defining the spatial and temporal scale of valuation
	*Estimating, for each service, the economic value at a certain SPI
	*Calculating the economic value of each service
Evaluating environmental flows scenarios	*Calculating total value of each scenario
	Calculating total SPI of each scenario

Optimal ecosystem service (ES) provision



$D_{ES,M}$ = demand curve for (marginal value of) marketed services

$D_{ES,NM}$ = demand curve for (marginal value of) non-marketed services (not shown)

$D_{ES,MNM}$ = total demand curve for (marginal value of) services ($D_{ES,M} + D_{ES,NM}$)

$MC_{ES,G}$ = marginal cost of service provision

$MC_{ES,OC}$ = marginal opportunity cost of service provision

$MC_{ES} = MC_{ES,G} + MC_{ES,OC}$



Take home messages

- Explicit valuation of services sustained by environmental flows is possible using existing methods
- Such explicit valuation is needed to inform and document decision-making
- Let's do it!

The logo for eFlowNet, featuring the text "eFlowNet" in a blue, sans-serif font with a stylized bird-like shape above the 'o'. Below it, the text "Global Environmental Flows Network" is written in a smaller, grey font.

eFlowNet
Global Environmental Flows Network



**Thank you for your kind attention
and have a great day!**

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www.eflownet.org

- your gateway to info on eflows!