

Presentation 2.1a

UNDERSTANDING ECOSYSTEMS SERVICES CONCEPTS AND VALUATION APPROACHES

The Objectives



The economic valuation of the different social, environmental and economic impacts an SEA allows the analysis to achieve 2 key objectives:

1. It allows the analysis to compare the relative significance of different types of impacts using a common denominator
2. It provides the means to internalize costs and benefits into the main economic analysis of the strategic plan that the SEA is part of, factors that in traditional planning have previously been treated as externalities

Valuation



- Valuation is the process through which we assign economic values to factors that are not traditionally given such values through markets or other economic processes
- It reflects the full value to society of the factors involved

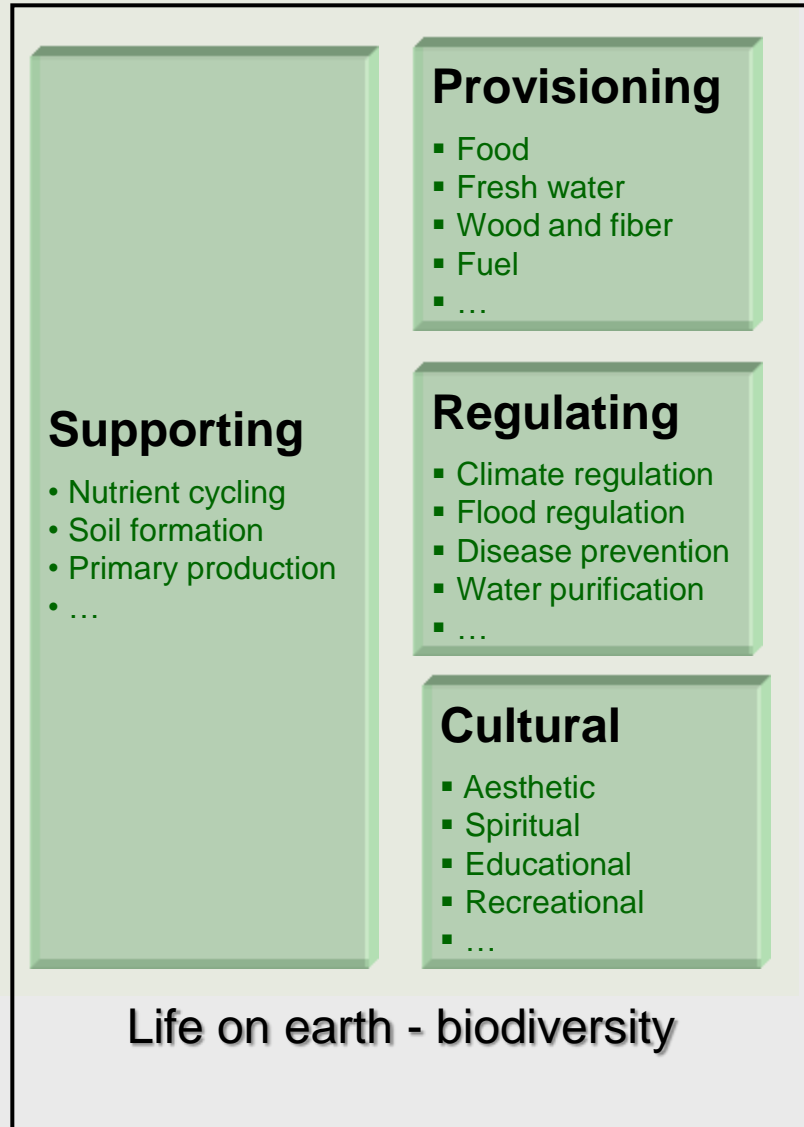
- Valuation includes many **environmental factors** such as biodiversity, watershed functions and carbon sequestration that are not traded on markets
- It also includes **social factors** such as cultural and aesthetic values and livelihood benefits like fuelwood and gathered foods that are not traded on markets

- In recent years the concept of **ecosystem services** has emerged as a framework through which valuation can be understood
- The Millennium Ecosystem Assessment (www.maweb.org) defined Ecosystem Services as “the benefits people derive from ecosystems” – a concept that includes both the inherent characteristics of different ecosystems and the actual or potential benefits that society derives from them: each ecosystem will have a distinctive set of ecosystem services

The MA Framework



ECOSYSTEM SERVICES

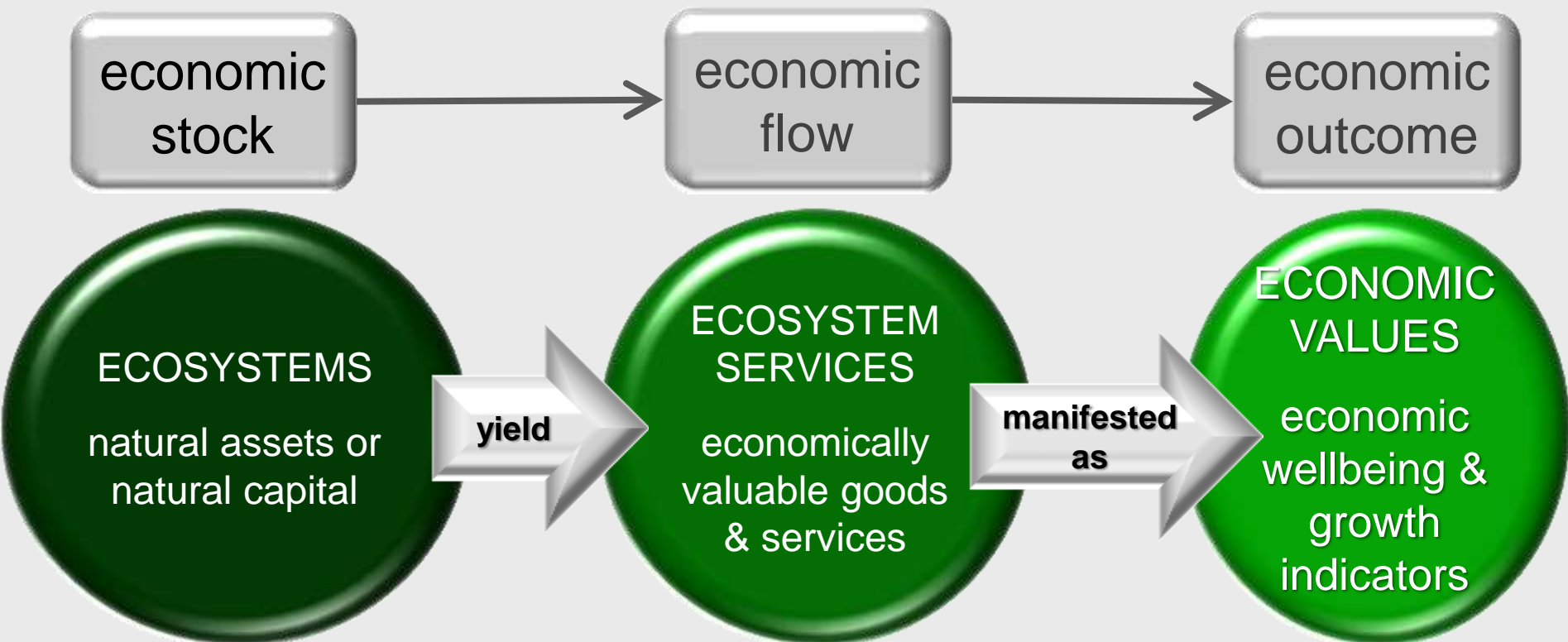


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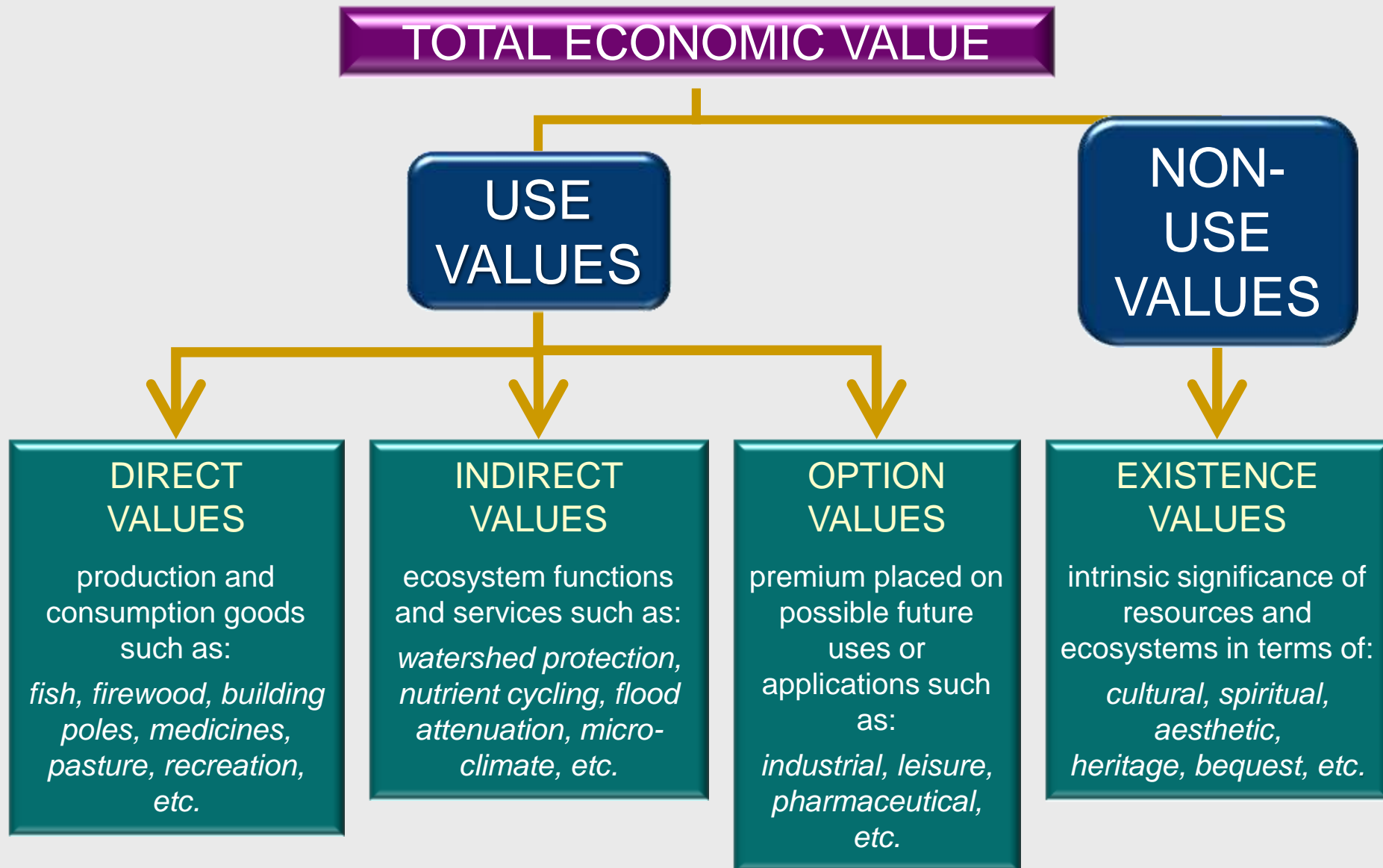
CONSTITUENTS OF WELL-BEING



The Return on Ecosystems Investments



- Economic valuation is a relatively new field for many types of social and environmental values that are not conventionally priced or traded
- It is not perfect: doing valuation usually involves making assumptions and judgments
- Values are relative: what something is worth is very different for different types of people
- Not everything can be valued: some things that are very valuable to people cannot be given an economic price



Valuation Techniques

Revealed Preference Methods

Market Prices

Production Function Approaches

Surrogate Market Approaches

Cost-Based Approaches

Stated Preference Methods

Market Prices

Change in Production

Travel Cost Methods

Hedonic Pricing

Replacement Costs

Mitigative or Avertive Expenditures

Damage Costs Avoided

Contingent Valuation

Conjoint Analysis

Choice Experiments

Many Different Methods



products & raw materials

Market Prices/shadow prices

water retention & supply

Replacement Cost (reservoir construction & maintenance)
Modified Market Price (use WTP estimates)

carbon sequestration

Market Price (price of carbon credits)

water purification & waste treatment

Replacement Costs (waste treatment)
Mitigative Expenditures (water purification)

air quality maintenance

Replacement Costs (treatment)

erosion control

Replacement Costs (soil & water conservation measures)
Mitigative Expenditures (dredging & desilting of reservoirs)

drought control

Replacement Costs (provision of alternative water supplies)
Damage Costs Avoided (feeding, relocation, other social costs)

flood attenuation

Replacement Costs (flood barriers, check dams, etc.)
Damage Costs Avoided (property, infrastructure, crops, etc.)

nutrient cycling

Replacement Costs (equivalent fertiliser applications)
Effect on Production (additional crop yields)

recreation

Market Price /Travel costs

- As shown above, there are many types of techniques that can be used for valuation
- Each has its advantages and disadvantages
- Some require more data, and more accurate data, than others
- Some require extensive surveys: e.g. contingent valuation
- In some cases, value not the loss of inherent values (not possible) but the cost or remedial measures

- Once the main impact costs and benefits are calculated for each option in the strategic plan, these costs and benefits are very straightforwardly included in the overall economic calculation of the different options
- This can then be used to re-assess the least cost' calculations for each of the planning options, to reflect their full economic costs and benefits to society as a whole

Thank you