

# ECOSYSTEM SERVICES & ECONOMIC EVALUATION OF ECOSYSTEM SERVICES

## - BENEFITS OF RIVERS AND WETLANDS -

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# AGENDA

**1.ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT**

**2.ECONOMIC EVALUATION OF ECOSYSTEM SERVICES – WHAT THIS IS AND  
WHAT IT CAN BE USED FOR**

**3.LET US THINK THIS THROUGH - STARTING POINTS FOR DISCUSSION**

# ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT

## Ecosystem:

A dynamic mix of communities of plants, animals and micro-organisms and their non-living environment, which are connected in a functional unit.



Illustration by Jeff Grader / property of Delta Education

## Ecosystem services:

Benefits which humanity has from functioning of ecosystems. That includes state and the processes in the ecosystem and those benefits which arise from these processes.



# ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT

Ecosystem services are not something eternal, indestructible and unlimited.



Ecosystems provide a wide array of goods and services of value to people.



# ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT

## PROVISIONING SERVICES

- Crops
- Domestic animals
- Fish
- Forest goods

### Food



- Wood and wood products
- Fiber and resin
- Rocks and sand
- Fodder

### Material



- Drinking water
- Water for cleaning
- Water for industry
- Electricity production

### Fresh water



- Medicinal plants
- Biocide
- Food additives

### Biochemical and genetic resources





# ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT

## REGULATING SERVICES

- Global climate
- Local climate (temperature, rainfall)

### Climate control



- Binding and storage of CO<sub>2</sub> in plants
- Air quality
- Mitigating climate change

### CO<sub>2</sub> sequestration



- Self-cleaning ability of water
- Some pollutants are bound by plants

### Water cleaning



- Flood protection
- Fire protection

### Prevention or mitigation of extreme events



# ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT

## REGULATING SERVICES

- Plants reduce the possibility of landslide

### Erosion prevention



- Decomposition of organic matter
- Soil aeration

### Conservation of soil quality



- The transfer of pollen from male to female parts of plants

### Pollination



- Predators regulate the number of pests

### Disease and pest control



# ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT

## CULTURAL SERVICES

- Camping
- Observation of animals and plants

### Tourism



- Hiking
- Biking
- ...

### Recreation



- Beauty of nature
- inspiration

### Aesthetic value of landscape



- Search for peace and relaxation in nature

### Spiritual relaxation



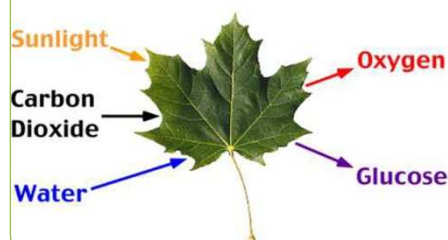


# ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT

## SUPPORTING SERVICES

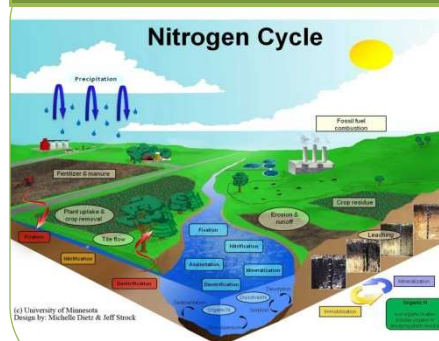
- Formation of biological material through the process of photosynthesis and assimilation of nutrients

### Primary production



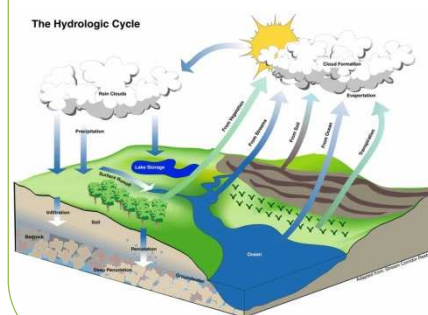
- Circulation of nutrients (nitrogen, sulfur, phosphorus, carbon, ...) between organisms and the atmosphere.

### Nutrient cycling



- Circulation of water through the ecosystem
- Water enters the plant, evaporates from them and then returns to earth as rain.

### Water cycling



- Population maintenance
- Resilience of ecosystems

### Animal and plant habitat



## ECOSYSTEM SERVICES – WHAT THEY ARE AND WHY THEY ARE IMPORTANT



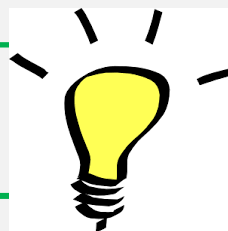
# ECONOMIC EVALUATION OF ECOSYSTEM SERVICES – WHAT THIS IS AND WHAT IT CAN BE USED FOR



**overexploitation**



America and England are two countries divided by a common language (Oscar Wilde)



**ECONOMIC EVALUATION OF ECOSYSTEM SERVICES**



**overprotection**



# ECONOMIC EVALUATION OF ECOSYSTEM SERVICES – WHAT THIS IS AND WHAT IT CAN BE USED FOR

Provision of ecosystem services often is not factored into important decisions that affect ecosystems.



Distortions in decision-making damage the provision of ecosystem services making human society and the environment poorer.



# ECONOMIC EVALUATION OF ECOSYSTEM SERVICES – WHAT THIS IS AND WHAT IT CAN BE USED FOR

ECONOMIC EVALUATION OF ECOSYSTEM SERVICES IS ASSIGNING VALUE TO ECOSYSTEM SERVICES THAT SURROUND US

VALUE # PRICE

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## Ecosystem services:

Benefits which humanity has from functioning of ecosystems. That includes state and the processes in the ecosystem and those benefits which arise from these processes.



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COMPANIES



SERVICES / PRODUCTS



## ECONOMIC EVALUATION OF ECOSYSTEM SERVICES – WHAT THIS IS AND WHAT IT CAN BE USED FOR

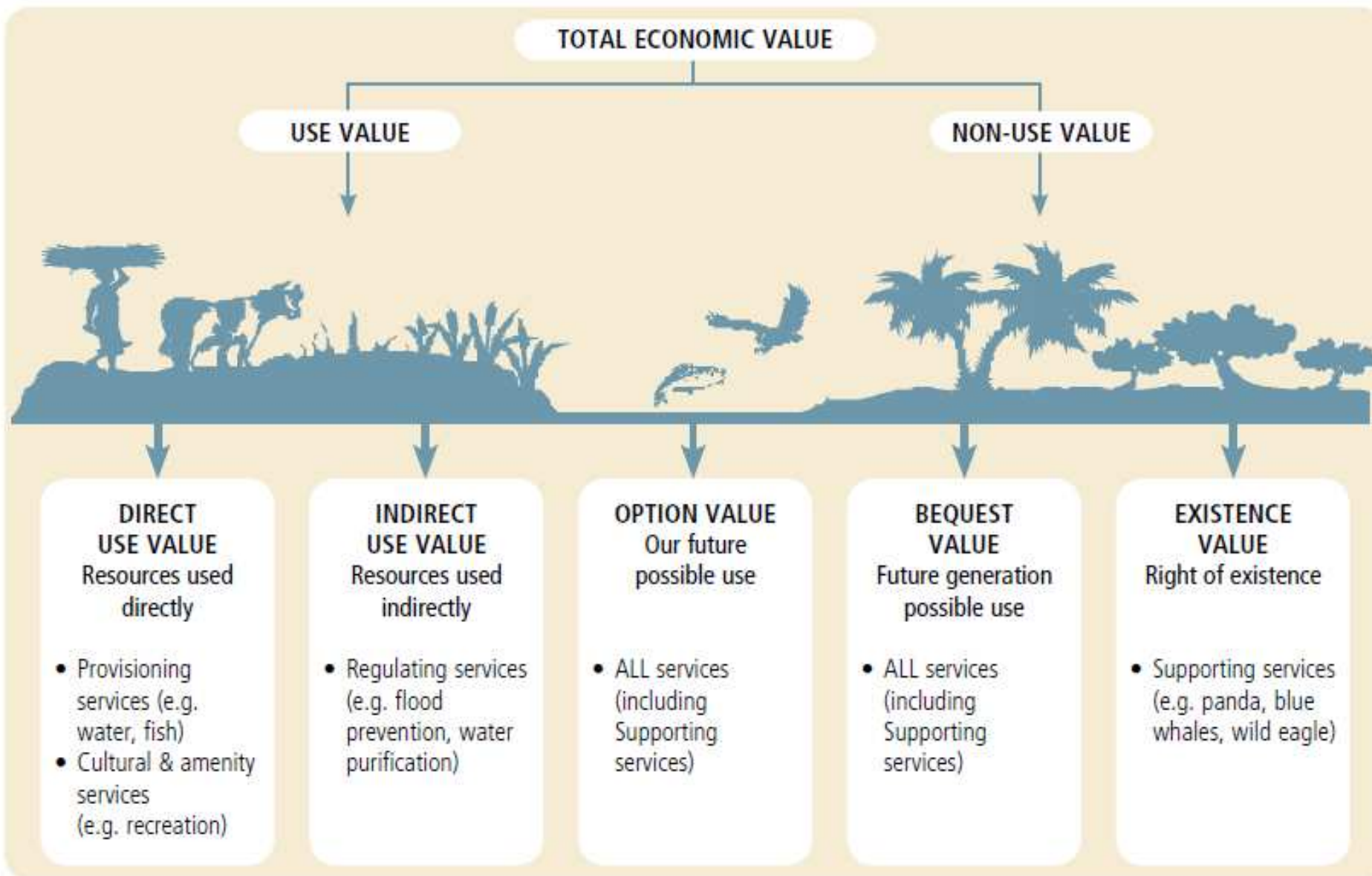
PRESSURE TO “SAVE THE ENVIRONMENT” IS EVER MORE PRESENT FROM DIFFERENT INTEREST GROUPS BUT ALSO FROM POLICY LEVEL...TAXATION, LEGISLATION, ECO LABELS...

WE NEED TO FIND COMMON LANGUAGE TO TALK ABOUT ENVIRONMENT, ECOSYSTEM SERVICES AND DEVELOPMENT, SMART SPECIALISATION, RTD, BIG INDUSTRY DEMANDS, “IMPORTANT THINGS THAT WILL HELP US LIVE BETTER” ....

ECOSYSTEM SERVICES ARE MOSTLY CONNECTED TO EDUCATION, NATURE PROTECTION, INFRASTRUCTURE...YET SURPRISINGLY NOT THAT MUCH WITH POLITICS, AGRICULTURE, TOURISM...

CAN METHODS OF ECONOMIC EVALUATION OF ECOSYSTEM SERVICES BE THE “THE BABEL FISH” OF MODERN ECONOMY?

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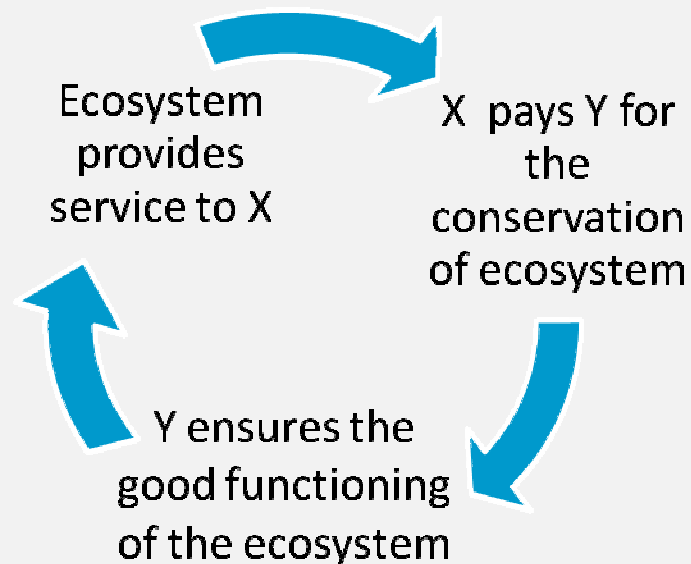
EUROPE IS IN SEARCH OF ITS DEVELOPMENT MODEL AND THERE IS A NEW BUZZWORD POPULAR - “INFORMED DECISION MAKING” - HMM...



## Concept of payments for ecosystem services

**PES schemes** = arrangements whereby those who benefit from ecosystem services (i.e. governments, businesses, population) **pay those who provide conservation activities** (e.g. farmers, water or land managers) that deliver such services.

**Purpose of PES** = to “internalize the good” – to create a “virtuous circle”



# ECONOMIC EVALUATION OF ECOSYSTEM SERVICES – WHAT THIS IS AND WHAT IT CAN BE USED FOR

CONCEPT OF ECOSYSTEM SERVICES AND ITS ECONOMIC EVALUATION BEING THE BASIS FOR ECONOMIC DEVELOPMENT AND LONG TERM BUSSINES PLANNING IS NOT ANYMORE JUST A CONCEPT OF ALTERNATIVE INTEREST GROUPS, ENVIRONMENTALISTS OR TRENDY POLITICS.



## CONNECTING BUSSINESS AND NATURE

**Corporate Ecosystem Valuation (CEV) can be defined as a process to make better-informed business decisions by explicitly valuing both ecosystem degradation and the provided by ecosystem services. By including ecosystem values, the company's aim is to improve corporate performance in relation to social and environmental goals and the financial bottom-line. Valuation can make decision making around ecosystems more compelling and practical, thereby enhancing sustainable development strategies and outcomes.**

## LET US THINK THIS THROUGH

- Why are ecosystem services important even for the people not interested in nature and its values?
- Are they relevant even for those having only financial gains in mind?
- Is caring for ecosystems preservation really a care for the species and their habitats, or it is actually primarily for our own benefit?
- Why is politics not interested in this topic?
- Can you see business potential in this concept or any economic value? How does it differ from “classic” business models?
- Are we missing the wood by looking at the tree?
- How do concepts of green economy, green jobs, sustainable development connect to ES?
- Why is it rational, economical and business wise to further the concept of ES and EEES in this time and age?