FOREST BASED PAYMENT FOR ECOSYSTEM SERVICES SYSTEMS IN CENTRAL EUROPE

EUROPARC Webinar: Exploring new ways to finance conservation: Innovative funding for Nature and People

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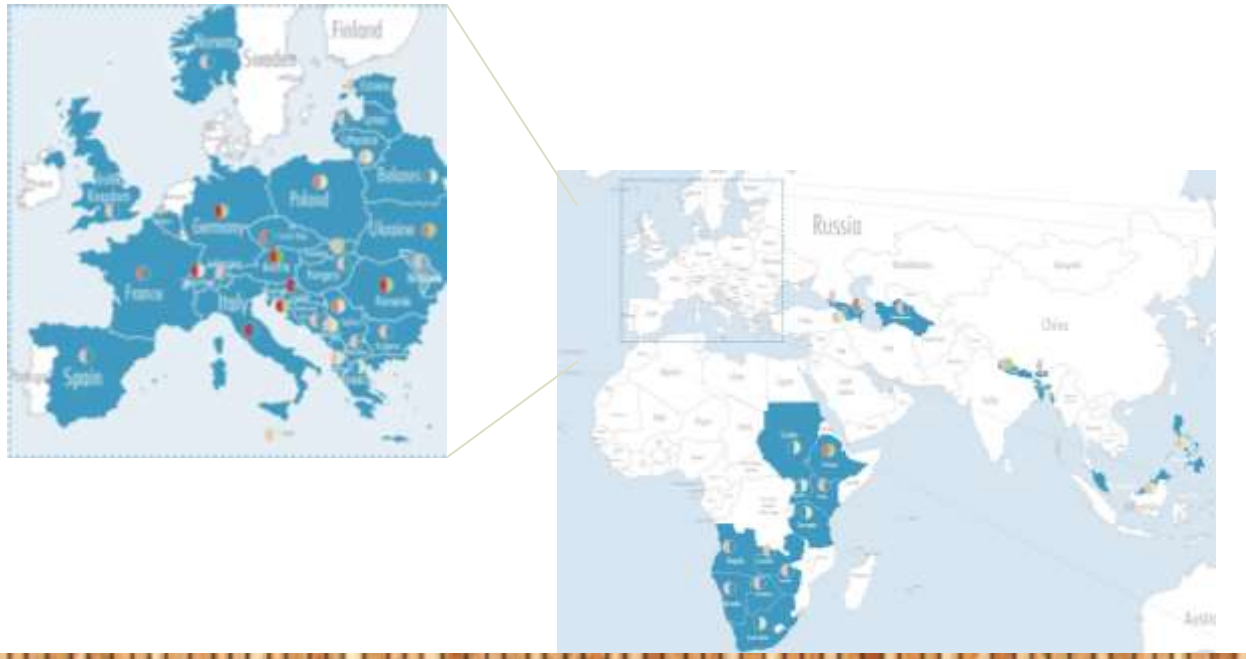
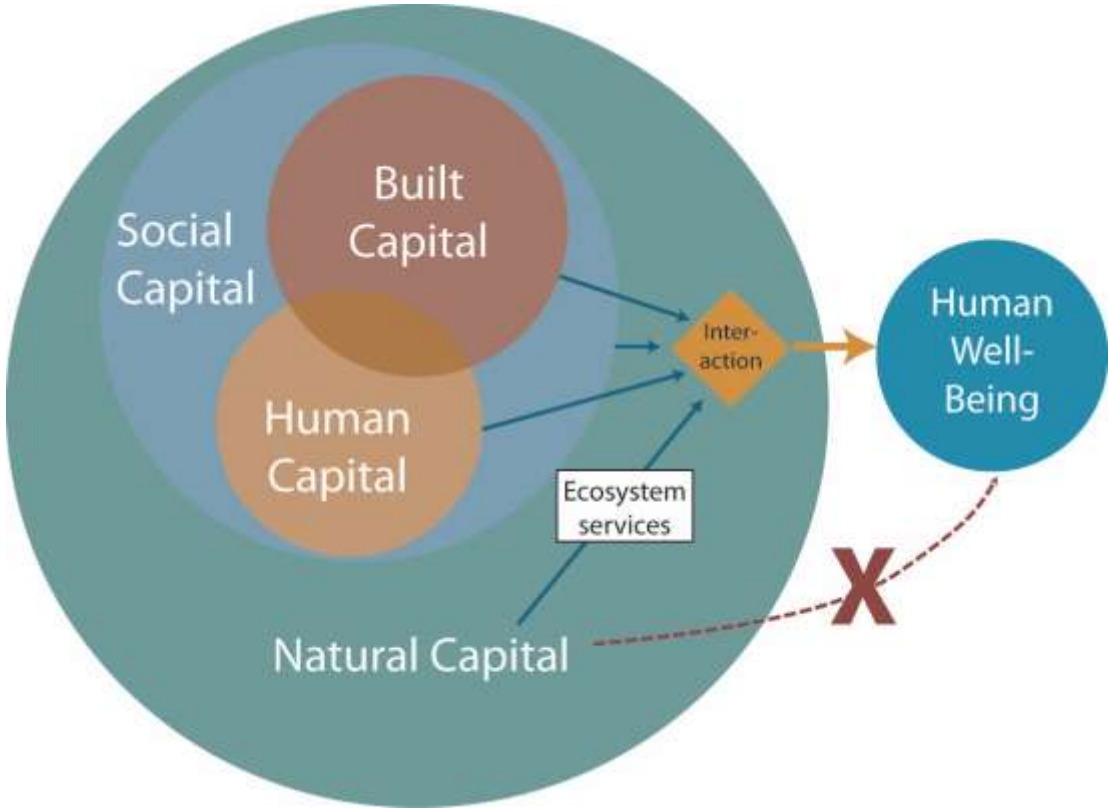
INSTITUTE OF ECOLOGY



WHO WE ARE

- Location: Klagenfurt, Austria
- Active for more than 25 years in over 50 countries
- Founded in 1997, 15 employees
- Focus: Protected areas and nature conservation

WHAT ARE ECOSYSTEM SERVICES?

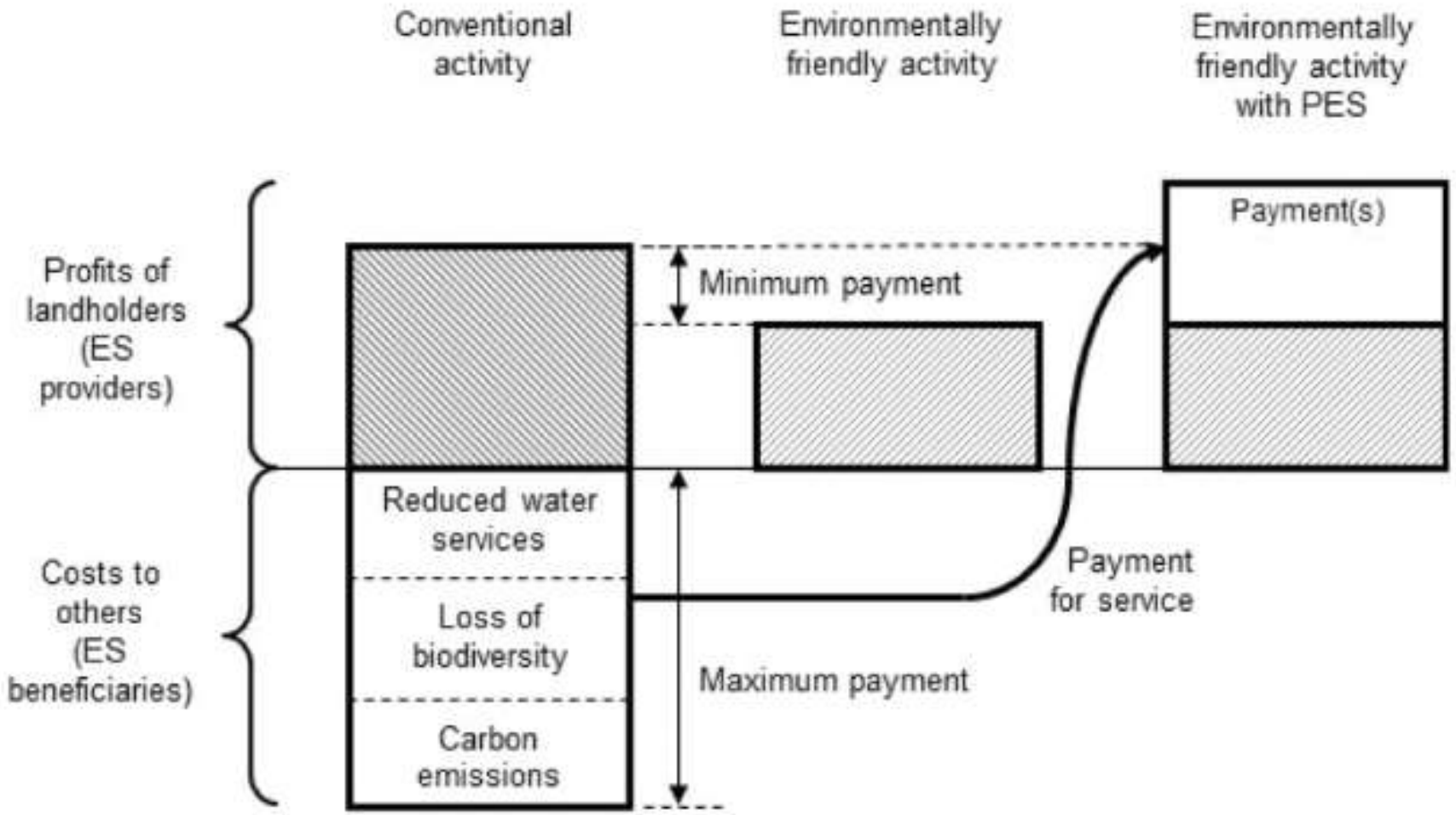


Costanza, R., de Groot, R., Sutton, P., van der Ploeg, S., Anderson, S.J., Kubiszewski, I., Farber, S., Turner, R.K., 2014. Changes in the global value of ecosystem services. Global Environmental Change 26: 152–158

ECOSYSTEM SERVICES DEFINITION

CATEGORIZATION OF ES

MEA-Millenium Environmental Assessment	TEEB-The Economics of Ecosystems and Biodiversity	CICES-Common international classification of Ecosystem services
Supporting	Habitat (lifecycle maintenance, gene pool protection)	/
Regulating	Regulating	Regulation and maintenance
Provisioning	Provisioning	Provisioning
Cultural	Cultural &Amenity	Cultural



EXPLORATION OF POTENTIAL MARKETS FOR FOREST-BASED ES

→ The logic of PES

→ Support for PES for forest ecosystem services

- Common agricultural policy
- LIFE Projects
- Horizon Europe projects
- Public financing through new State aid possibilities

→ Private payment schemes

- CSR – corporate social responsibility
- Voluntary carbon markets
- Forest Stewardship Council (FSC) – private Ecosystem service Procedure
- (only for France) – Label Bas Carbone – certification of carbon offset projects in afforestation, reforestation, conversion form coppice to high forests

→ EU policy support

- (New) Voluntary framework for certifying permanent carbon removals (CRCF Regulation) – carbon farming
  - e.g. regional authority financing enlargement of nature parks through sale of CRCF certified units form carbon farming on voluntary carbon markets

PUBLIC AND PRIVATE PAYMENT SCHEMES FOR FOREST ECOSYSTEM SERVICES

Forest area	Fund/Program	Example
> 25 ha	Forest Fund (Waldfondsprojekt)	Netzwerk Naturwald NP Kalkalpen
1,5-25 ha	Connect for Bio State Research Center for Forests (BFW)	Durration: 20 years Amount: 175-252 €/ha/year
0,5-1,5 ha	Connect for Bio State Research Center for Forests (BFW)	Durration: 10 years Amount: 175-252 €/ha/year

https://www.urwälder.at/

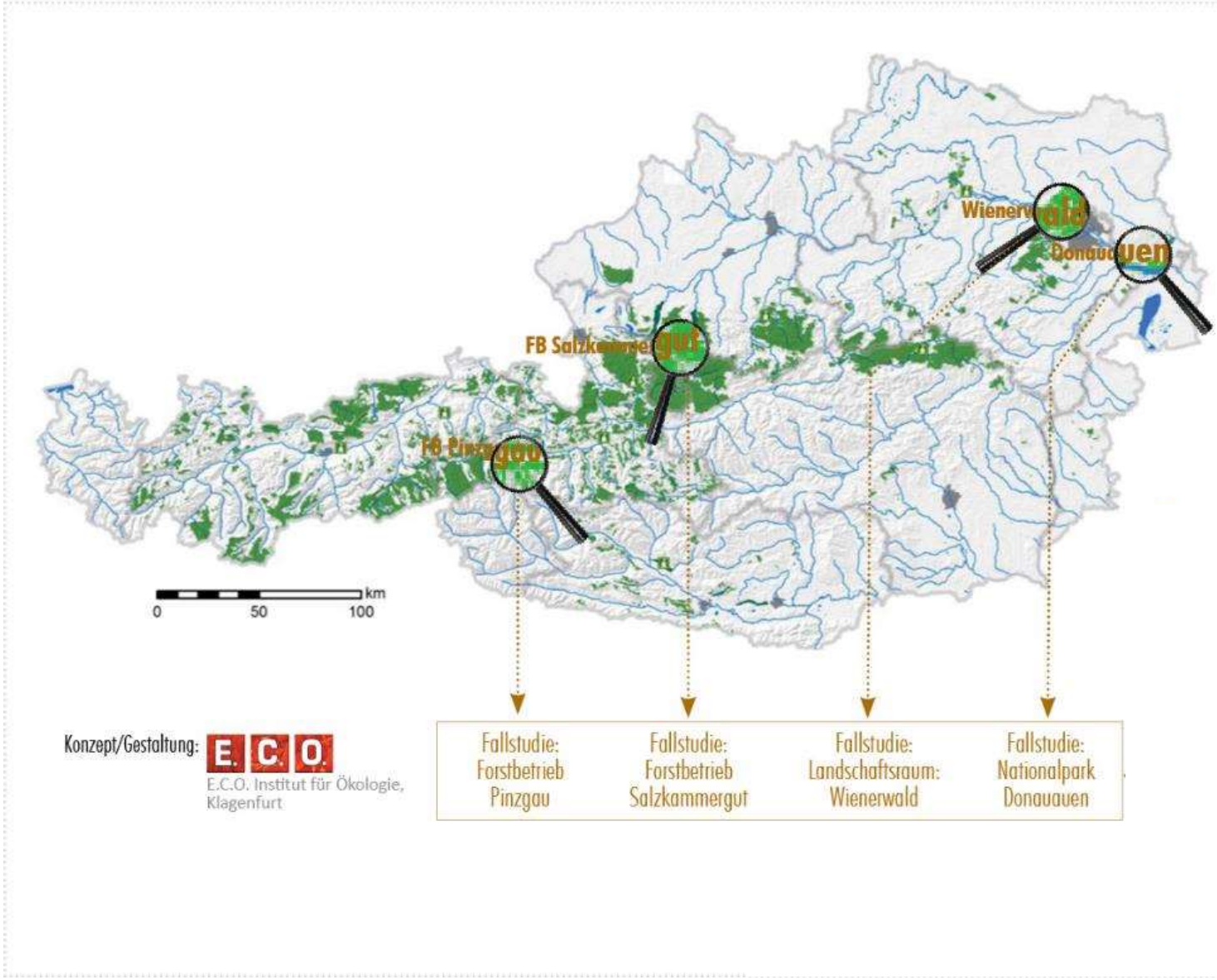
PAYMENT SCHEMES IN AUSTRIA

2 | CASE STUDY

Methodology

PROJECT 1: ECOSYSTEM SERVICES OF THE AUSTRIAN FEDERAL FOREST ENTERPRISE

- → 800.000 ha total
- → 500.000 ha forest
- → 2013-2019
- → 17 different ESS



Provisioning services

- Wood
- Provision with water
- Commercially used game and fish
- Renewable energy

Regulating and maintenance services

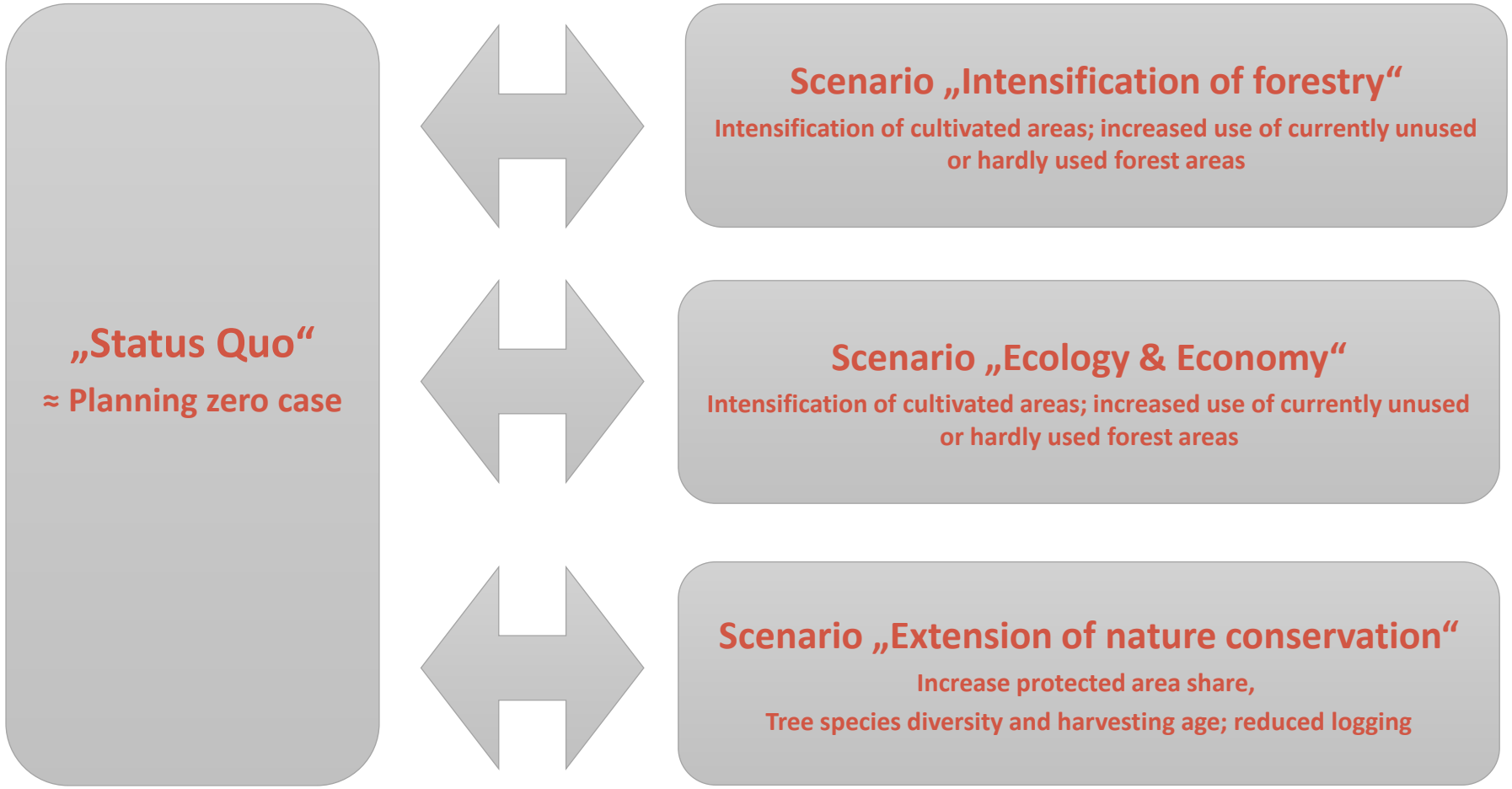
- Local climate regulation
- Erosion control
- Flood control
- Soil fertility
- Pollination
- Carbon storage and sequestration

Cultural services

- Biodiversity
- Recreation
- Tranquillity
- Identification with the landscape
- Observation of nature
- Natural landscape for tourism
- Natural darkness

FOREST BASED ES

→ In project target regions



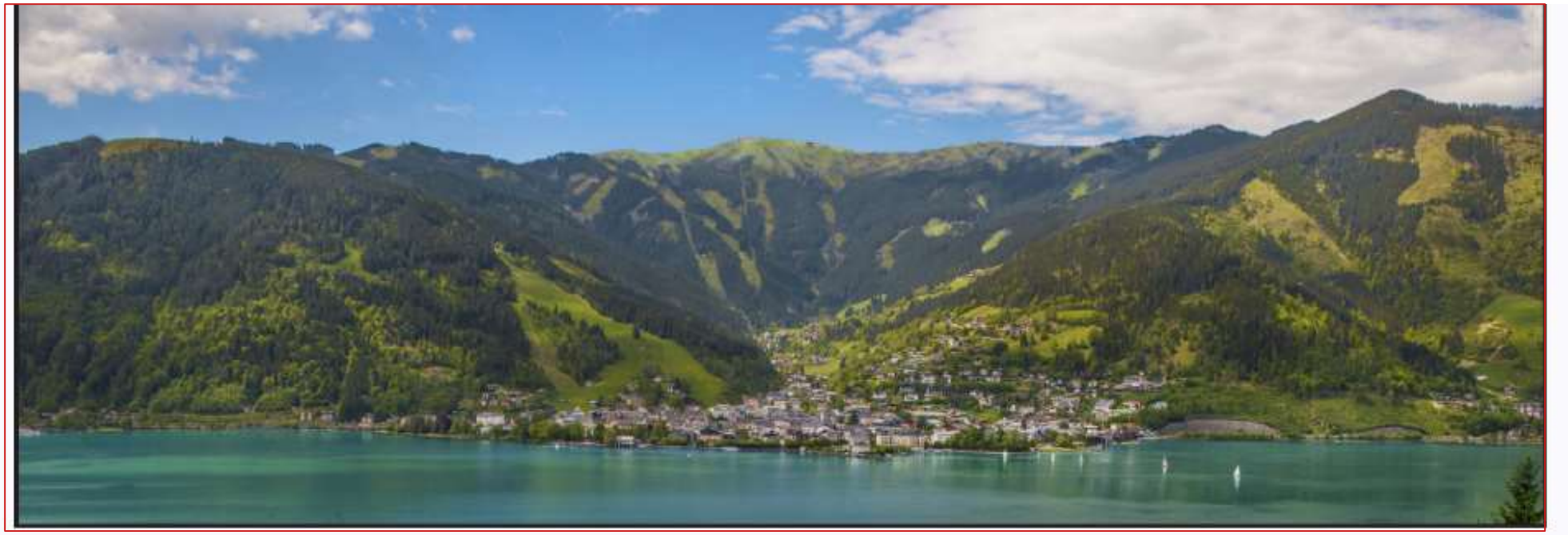
→ Basis for comparison: Ecological and economic assessments are based on stock and flow variables and their changes, in each case as differences from the "status quo 2023/2024".

WE DO NOT ASSESS “STOCK” VALUES BUT COMPARE THE IMPACT OF DIFFERENT MANAGEMENT SCENARIOS

Type of ecosystem service	*Ecosystem service*	*Description of ecosystem service and valuation approach*	*Valuation method applied*
Provisioning ecosystem services	Lumbering (timber production)	Amount of timber harvested according to the different scenarios; kind of timber (e.g., biomass for industrial use, material or energy use)	Market prices, 6-years average: operating profit (i.e., price of timber harvested and transported to the respective forest road, net of harvesting and plantation costs)
Regulating & maintaining ecosystem services	Erosion control (gravitational natural hazards)	Lumbering in protected forests (though restricted) leads to clear-cut patches in need of protection by wooden or steel nets, and avalanche barriers	Replacement costs: annuity of costs of technical measures against rock fall, mud slides, or avalanches (effective over 15 years after clear cut)
	Carbon storage	Carbon storage in forests, net of substitution of fossil fuels, material use of timber (over life cycle), and the potential to use forests as carbon sinks	Willingness-to-pay for the reduction of CO_2 emissions (EUR 113/ton CO_2); alternatively: abatement costs, social costs of carbon
Cultural ecosystem services	Local recreation	Forests used for various recreation activities (e.g. walking, jogging, wildlife observation, hiking, outdoor family activities); frequency depending on distance, state of nature, natura quiet	Travel cost approach: benefits measured as consumer surplus per activity, depending specifically on naturalness and quiet
	Tourism (natural and cultural landscapes)	Forests, high-alpine meadows, glaciers, lakes make up the scenery for vacations; tourists specifically visit natural monuments, protected areas, and enjoy scenic views	On-site contingent valuation study in two prominent Austrian tourist destinations; valuation of scenarios (verbal and visual presentation) depending on naturalness
	Conservation of biodiversity	Forest management scenarios lead to different degrees of naturalness (biodiversity), e.g. species conservation, natural habitats, tree species composition, protected areas	Representative Austria-wide contingent valuation of different scenarios

VALUATION METHODS OF ES

→ Example from Austrian study Getzner & Kirchmeir 2020)



STATUS QUO: MEDIUM NATURALNESS (2,5)

Szenario 1 (Tourismus)

Intensivierung des Tourismus und Verbesserung der Tourismusinfrastruktur, leichterer Zugang zu hochalpinen Gebieten auch mittels Autos und Liften, Reduktion von Naturschutzgebieten und der Artenvielfalt
Natürlichkeit würde **auf 2,0 Punkte sinken**.

INTENSIFICATION OF LAND USE: NATURALNESS 2,0)

Szenario 2 (Öko-Tourismus)

Keine neue Tourismusinfrastruktur, aber mehr Gebiete für den Naturschutz mit örtlichen oder zeitlichen Zugangsbeschränkungen; gewisse Reduktion umweltschädlicher Aktivitäten (z.B. Bergklettern und Radfahren in sensiblen Gebieten) **Natürlichkeit** würde **auf 3,0 Punkte steigen.**

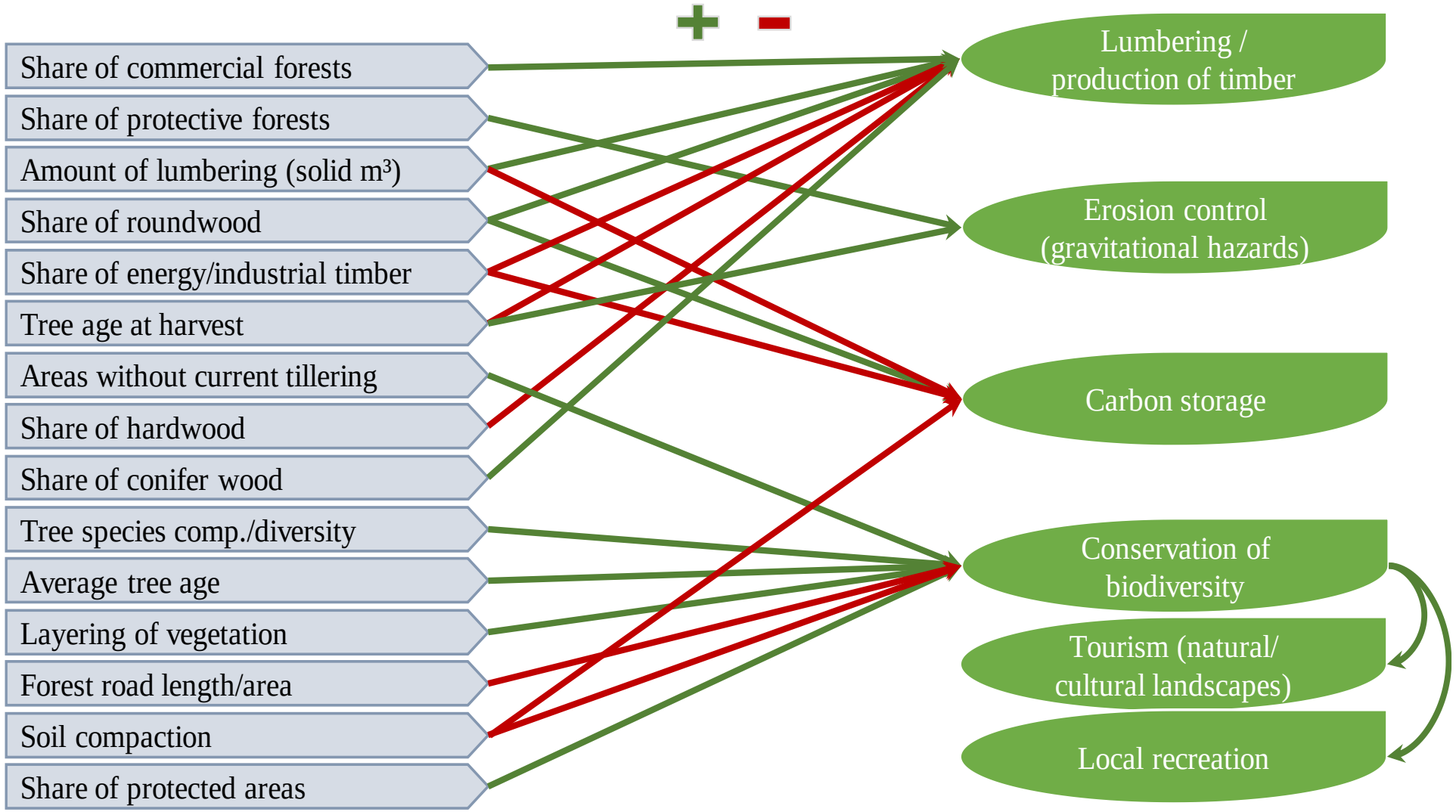
ON-SITE SURVEYS RATION OF LANDSCAPE EXAMPLE: ECO-TOURISM DEVELOPMENT (NATURALNESS 3,0)

Szenario 3 (Naturschutz)

Rückbau von gewissen Tourismusinfrastrukturen (z.B. Seilbahnen, Lifte), Einrichtung großer Naturschutzgebiete mit örtlichen oder zeitlichen Zugangsbeschränkungen einiger Aktivitäten (z.B. Klettern, Radfahren, Wildbeobachtung, Autofahren in höheren Bergregionen); es gäbe noch immer einen gewissen naturorientierten Tourismus

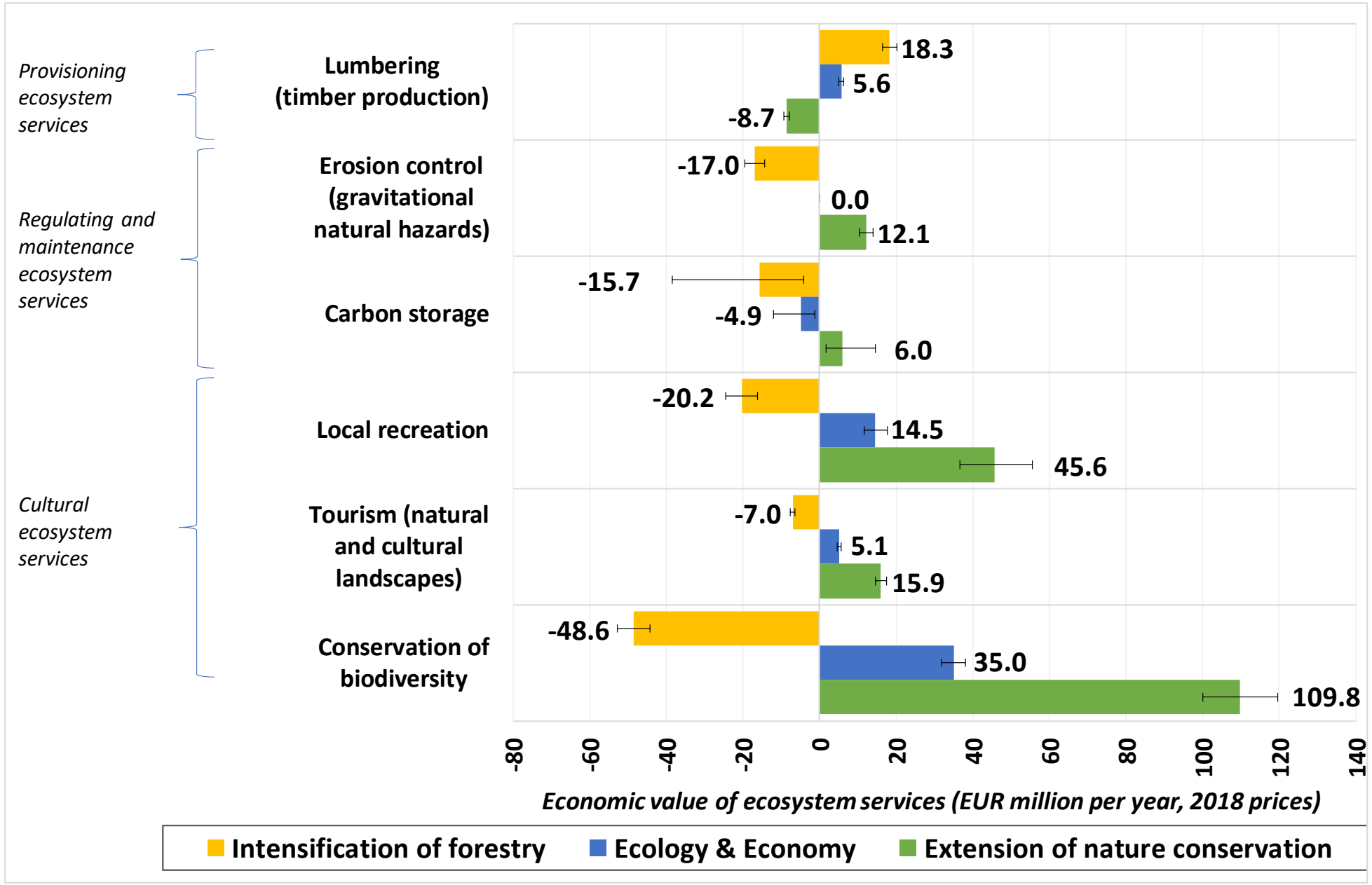
Natürlichkeit würde **auf 3,4 Punkte steigen.**

ON-SITE SURVEYS RATION OF LANDSCAPE EXAMPLE: NATURE CONSERVATION (NATURALNESS 3,4)



SELECTED DETERMINANTS FOR (SIGNIFICANT) ECOSYSTEM SERVICES PROVIDED BY STATE FORESTS

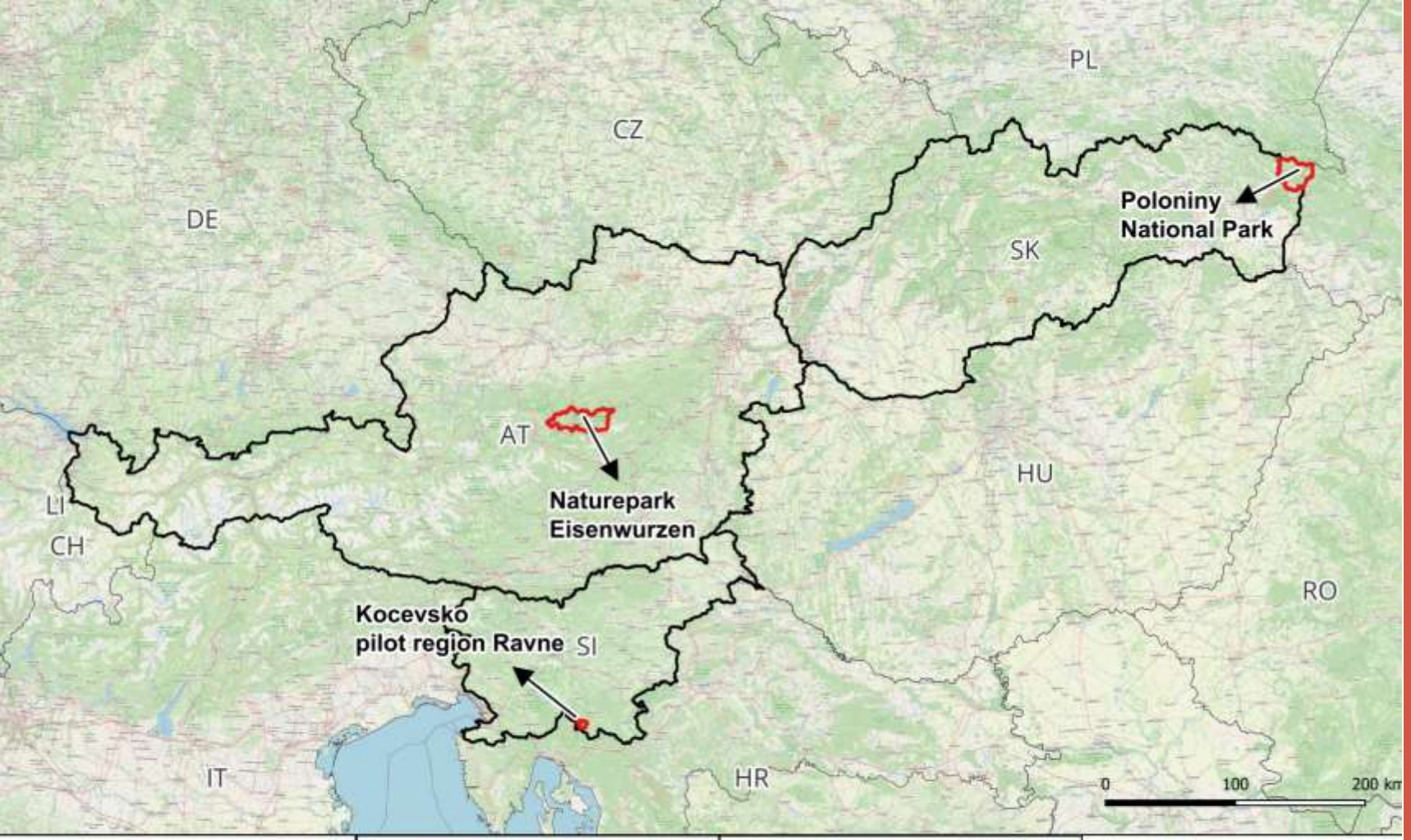
→ Example presentation of results



DIFFERENCES OF THE VALUE OF ECOSYSTEM SERVICES ACCORDING TO MANAGEMENT SCENARIOS IN COMPARISON TO STATUS QUO

3 | CASE STUDY 2

Methodology



PROJECT 2: INTERREG HEALTHY FOREST REGIONS

WP2: REIMBURSEMENT SYSTEMS FOR FOREST ECOSYSTEM SERVICES – EXPLORING NEW OPPORTUNITIES

- → 2023-2025
- → 3 Pilotregions in WP2 (AT, SI, SK)
- → 5 ESS
  - Timber
  - Natural Hazard Protection
  - Carbon storage
  - Recreation
  - Biodiversity

Provisioning services

- **Wood**
- Provision with water
- Commercially used game and fish
- Renewable energy

Regulating and maintenance services

- Local climate regulation
- **Erosion control**
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- Soil fertility
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Cultural services

- **Biodiversity**
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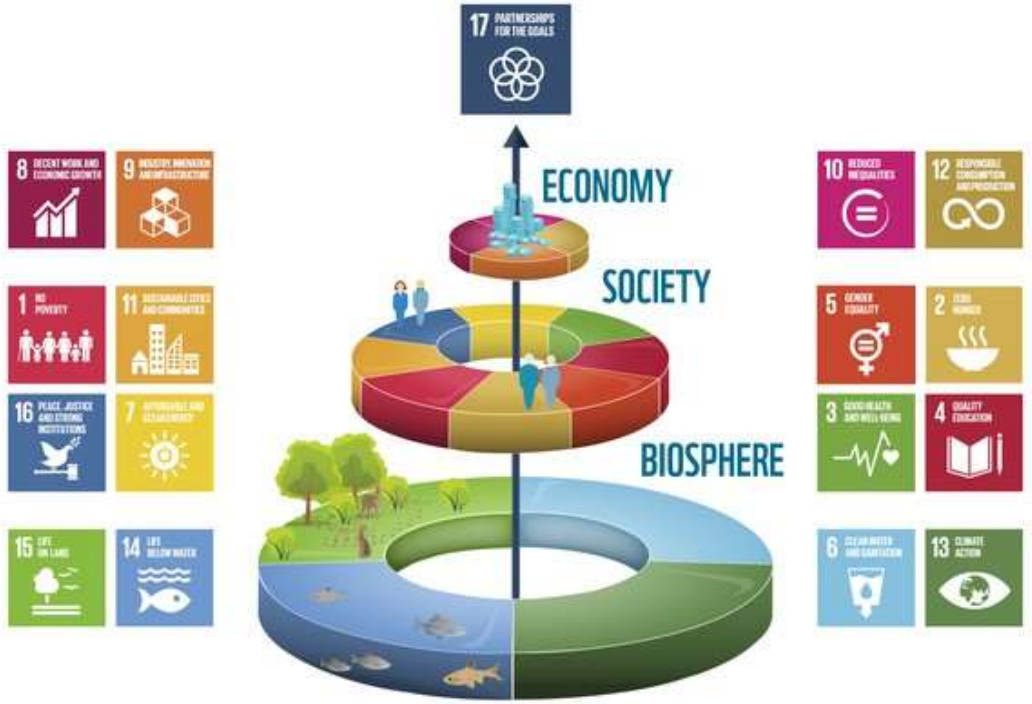
FOREST BASED ES

→ In project target regions

PHASE 1: HOW ARE ESS RANKED BY LOCAL STAKEHOLDERS

→ Which ecosystem services are prioritised for the Pilot Region?

- Discussion and questions on the individual ESSs
- Evaluation of the ESS according to the three levels of sustainability



Country	AT	SI	SK	average
Forest and wood Industry	1,0	0,4	0,7	0,7
Agriculture	0,2			0,2
Tourism	1,3	0,2	0,8	0,9
Natural hazards	0,3			0,3
Education	0,4		0,5	0,4
Administration/ Forest	0,2	0,9		0,5
Administration/ Nature protection	0,9	0,2	0,9	0,7
Hunting	0,8		0,4	0,7
Other	0,1	0,2	1,2	0,4

STAKEHOLDERS BACKGROUND

- → Mean values over all stakeholders
- → 0 = now involvement
- → 1 = voluntary or private engagement
- → 2 = professional engagement

	Social aspect	Ecological aspect	Economical aspect	Mean
AT				
Biodiversity	2.5	2.8	1.9	2.4
Carbon sequestration	2.4	2.6	2.0	2.3
Natural hazards protection	2.7	2.3	2.2	2.4
Timber	1.7	1.8	2.5	2.0
Tourism	2.4	1.8	2.4	2.2
SI				
Biodiversity	2.7	3.0	1.9	2.5
Carbon sequestration	2.1	2.6	1.8	2.2
Timber	2.4	2.4	3.0	2.6
Tourism	2.6	2.4	2.4	2.5
SK				
Biodiversity	2.1	2.9	2.1	2.4
Carbon sequestration	1.9	2.8	2.0	2.2
Natural hazards protection	2.5	2.3	2.2	2.3
Recreation and tourism	2.1	1.5	2.1	1.9
Timber	2.7	1.5	2.5	2.2

PRIORITIZATION OF ES PER COUNTRY

NEXT STEPS

- → Maps of ES in the scale of 1:10,000 to match with land owners
- → Development of realistic management scenarios for the Nature Park Region
- → Development of 1-2 Payment Schemata

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THANK YOU FOR YOUR ATTENTION

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