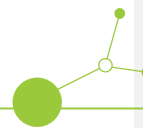




## D.2.3.4 Development of Best Practice Guidelines for the Operationalization of Payment of Ecosystem Services (PES) in Forests



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Document specification: Deliverable

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## List of abbreviations

HFR - Healthy Forest Regions

ES - Ecosystem services

PES - Payment for ecosystem services

UNESCO - United Nations Educational, Scientific and Cultural Organization

KPI - Key Performance Indicators



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# DEVELOPMENT OF BEST PRACTICE GUIDELINES FOR THE OPERATIONALIZATION OF PAYMENT OF ECOSYSTEM SERVICES (PES) IN FORESTS

## 1. Introduction

The document aims to provide key insights and decision support for scaling up and potentially redesigning Payment for Ecosystem Services (PES) schemes in forest regions in three pilot areas - Slovenia, Slovakia, and Austria. Its primary goal is to offer guidance on operationalizing PES by addressing both technical and social aspects to improve and implement similar models in the future.

This report has two main objectives: first, to serve as a learning platform for stakeholders involved in forest ecosystem management; and second, to provide guidance for scaling and redesigning PES mechanisms. Insights from the pilot implementations are intended to inform future policy and decision-making, ensuring that PES schemes are effective and sustainable.

It is intended for a broad range of stakeholders, including policymakers, forest owners, environmental NGOs, and experts in ecosystem services and biodiversity conservation. It serves as a resource for understanding the strengths and weaknesses of PES schemes in forest regions and can guide similar projects at local, regional, or national levels.

The deliverable 2.3.4 covers the outcomes of PES pilot projects conducted in three distinct regions: the Kočevsko region in Slovenia, Poloniny National Park in Slovakia, and Nature & Geopark Eisenwurzen in Austria. The pilots were designed to test the feasibility and effectiveness of PES systems tailored to local forest ecosystems, focusing on biodiversity conservation, carbon sequestration, and other ecosystem services. The scope is limited to these specific pilots, with limitations including the project timeframe and the unique contextual factors of each region.

In Slovenia, the focus was on innovative PES approaches linked to tourism and recreation. Slovakia explored non-timber provisioning and carbon sequestration schemes, while Austria concentrated on integrating biodiversity conservation with carbon services, using both established and new PES models. These pilots have provided valuable insights into the practical application of PES and identified key lessons for future implementation.

## 2. Pilots overview

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## 2.1. Slovenia - Kočevsko region

In Slovenia, exploring PES schemes for Kočevsko region was based on comparison between forest functions and ecosystem services due to innovative approaches of searching alternative income for forest owners. For project area we revisited importance/emphasis of individual forest functions and modelled their degrees of importance. We explored locally tailored PES approaches that better reflect specific possibilities for many ES-s in one area. As a part of project work, many relevant stakeholders were included in the co-designing of PES schemes.

Four ecosystem services were consistently identified as most important for the area. Timber production remained the dominant service because of its economic role and its contribution to stable income for forest owners. Biodiversity conservation was highlighted by the presence of high ecological value forests and Natura 2000 areas, including habitats for large carnivores, and by the management emphasis on maintaining forest ecosystem integrity (including retention of deadwood and support for decay processes). Tourism and recreation were considered services with strong potential for regional development and wellbeing, but with relatively limited existing support mechanisms. Carbon sequestration and storage were recognized as important at broader governance scales (regional and national), with particular emphasis on linking forestry with the wood-processing sector to extend carbon storage into long-lived wood products and to align with climate strategies.

This work was based on an established legal and institutional framework for forest management in Slovenia. The presentation emphasized the core principles of sustainable, multi-purpose, close-to-nature forestry, as well as free public access to forests guaranteed by national legislation. Biodiversity and habitat protection are integrated through forest management plans aligned with Natura 2000, and forest management must also comply with broader nature conservation and water protection requirements. In this context, the project narrative was not about introducing forest protection from the ground up, but about improving the balance of benefits, responsibilities, and compensation - especially where forests provide high-value services beyond timber.

The most concrete pilot implementation described in the transcript focused on tourism and recreation. The project deliberately aimed to operationalize the idea that forest owners could be compensated for maintaining and enabling nature-based experiences. In practice, this took the form of a "Treasure Hunt" tourism package, which built on an existing forest educational trail and was implemented in collaboration with a tourism provider and a forest owner. The payment logic was straightforward: visitors purchased the package from a tourism company, and a portion of the purchase price was directed to the private forest owner as compensation. Importantly, the model was presented not only as an income mechanism, but also as a way to generate financial support for forest measures while promoting a non-mass tourism approach centered on unique, meaningful experiences.

Implementation also revealed enabling requirements. Tourism-based schemes were seen as promising, but they involved technical complexity and a strong need for communication and marketing capacity, as well as sustained stakeholder cooperation in which forest owners are the critical link. The presenter repeatedly highlighted governance and coordination needs - particularly the need to ensure fair compensation, coordinated governance arrangements, and targeted communication that connects forest preservation with tourism branding and visitor engagement. Parallel activities, such as workshops and "tech talks" linked to the Wood Festival, were used to explore carbon-related options and to build networks between forestry and wood-processing actors; these discussions revealed similar challenges around legislative restrictions, scheme complexity, and the importance of information-sharing and networking as prerequisites for scheme development.

Overall, the Slovenian case concluded that the region provides high-value ecosystem services well beyond timber, and that tourism and recreation - supported by strong public communication, design, and storytelling - may offer one of the most practical entry points for expanding compensation mechanisms. The



main forward recommendations focused on making PES-type mechanisms more structured and recognizable, strengthening ecosystem service promotion, establishing coordinated governance for schemes that include compensation, and maintaining ongoing, targeted communication between forest owners, local communities, tourism organizations, and relevant experts.

## 2.2. Slovakia - HFR Poloniny

Work in the HFR Poloniny began with the assumption that the area's high ecological value and strong stakeholder recognition of key ecosystem services would provide a solid foundation for a locally tailored PES. Project partners and local actors prioritized four services - non-timber provisioning, wood production and carbon sequestration, biodiversity conservation, and forest recreation - and initially explored a wide range of possible scheme designs, building on the fact that Slovakia already applies several "quasi-PES" instruments, including CAP-linked supports and tax reliefs for special-purpose forests.

However, implementation constraints became apparent very early. Despite the theoretical breadth of options, key actors in the region showed limited interest and low readiness to establish a new PES mechanism. This was reinforced by a lack of shared understanding of what PES would entail in practice, uncertainty about legal and institutional conditions, and unresolved questions about who would be responsible for monitoring and verification. As a result, none of the explored schemes progressed to a pilot during the project timeframe.

As the work shifted from piloting to feasibility assessment, three directions were consistently identified as the most realistic entry points for future development: recreation/tourism, biodiversity, and carbon farming. Recreation appeared to offer some demand-side potential - survey work suggested an average willingness to pay or visit cost of about €6.30 per forest visit - however it still required further work to turn demand signals into an operational mechanism suited to the local context. Biodiversity proved more complex as a standalone PES opportunity, because in Poloniny is already a highly protected area (national park, as well as it is a UNESCO heritage locality) Biodiversity measures are already supported through multiple projects and public funding streams, leaving limited scope for an additional scheme without overlap. Carbon-related options were explored conceptually, including models linked to voluntary carbon markets or public sources, but they faced the same enabling barriers as the other services. The main lesson from the Poloniny was that the primary bottleneck was not a shortage of ecosystem service value or potential scheme ideas, but a lack of enabling conditions - particularly awareness, communication capacity, stakeholder buy-in, and clear institutional arrangements for roles and monitoring. The project response was to consolidate the explored options into guidance and to reframe future work around awareness building and PES literacy as a necessary preparatory step before implementation becomes feasible.

## 2.3. Austria - Nature and Geo Park Eisenwurzen

In the Nature & Geopark Eisenwurzen, the project built on a combination of existing PES practices and new scheme development. The focus was on biodiversity, natural hazard regulation, and carbon, with a clear intention to treat carbon not as an isolated service but as something that should be paired with biodiversity outcomes. Across these themes, a central feature of the local context was the prevalence of small-scale private forest ownership and highly diverse management practices, which influenced how baselines, additionality, and monitoring could realistically be designed.

Biodiversity was the most developed area, demonstrated by the already operating "Stepping Stone Biotops" model. In this scheme, forest owners register plots that are screened through GIS and checked in the field against defined habitat criteria. Contracts - typically 10 to 20 years - are then signed, with owners committing to set aside areas from harvesting or use and receiving payments per hectare that vary



depending on area characteristics and contract duration. A key feature of the model is the establishment of a baseline (forest structure, deadwood levels, microhabitats) and a monitoring approach aligned with national forest inventory and nature monitoring systems, which provides credibility and continuity. This established example also shaped broader project conclusions about what makes PES workable: stable financing (regional, national, or EU), clear conditionality, and an institutional anchor that can manage targeting and monitoring.

For natural hazards, the project attempted to develop a new PES logic around protective forests that reduce risks such as landslides, erosion, and avalanches - especially where forests protect roads, railways, settlements, and other infrastructure. Protected forest areas were mapped, and interviews were conducted to determine willingness among potential buyers, including infrastructure operators and public safety bodies. The results highlighted a persistent imbalance: forest owners and forest-related organizations were generally willing to engage, but most potential buyer organizations expressed low readiness, often arguing that they already receive financing for protective forest functions through existing channels. The mapping and interview process nevertheless clarified where a hazards PES might be plausible in the future and pointed to the need for stronger buyer engagement strategies and a clearer articulation of added value beyond current funding arrangements.

Carbon as an ecosystem service within the project was as a preparatory pilot rather than a full scheme implementation. A pilot area (about 7,000 hectares) was used to build baseline information through drone-based measurements and terrestrial laser scanning, enabling estimates of carbon stocks and the parallel calculation of a biodiversity index. This work helped test technical feasibility while also revealing practical governance requirements. In particular, a conflict arising from insufficient owner notification about measurements underlined that access permissions and early communication are essential prerequisites. The work also exposed methodological challenges in defining baselines and additionality in landscapes dominated by many small owners using different silvicultural systems, and it reinforced the need to design explicit rules for how disturbances (e.g., wildfire) would affect accounting and obligations.

Across the Austrian case, the project's main conclusion was that PES models are most likely to succeed when anchored in stable funding and clear institutional roles, and when a trusted local intermediary can coordinate stakeholders. The Nature & Geopark's convening and coordination role proved essential for owner engagement, while future steps were framed around tracking carbon-farming regulation and standards, conducting feasibility analysis (methods, costs, revenues, risks), and building trust and interest on the buyer side to enable eventual upscaling.

### 3. Lessons learned across the three pilot areas

Considering the findings from the pilot implementation, the project generated practical insight into what enables or restrains the development of PES in forest landscapes. The pilots collectively show that technical feasibility is rarely the primary constraint. Instead, success depends on stakeholder readiness, credible institutional arrangements, viable buyer engagement, and clear communication. The sections below synthesize lessons learned in a structured narrative suitable for future program design.

*Stakeholder readiness is the primary factor.*

The Poloniny pilot showed that even in a high-value ecological landscape with multiple conceptual PES options, no pilot was operationalized due limited institutional and legislative set up. In contrast, the Slovenian pilot explicitly invested in co-design and feasibility testing, while in Austria, forest owner willingness was relatively high where the Geopark actively engaged them. Therefore, readiness of actors and not ecological potential of area determined progress.

PES remains unfamiliar to many actors. Roles, obligations, and benefits are often poorly understood, and trust between buyers, intermediaries, and forest owners is uneven. PES initiatives cannot assume that a technically sound design will automatically attract participation. Regions with low readiness risk remaining



at the conceptual stage. Readiness assessment must therefore be treated as a formal entry criterion for pilot selection and scale-up.

Future programs should include a structured pre-design readiness phase. This should combine targeted PES knowledge sessions, a jointly agreed roles-and-responsibilities matrix (including monitoring), and early stakeholder commitment signals (such as letters of intent) before detailed scheme design begins.

*Buyer engagement remains the most persistent bottleneck.*

In Austria's natural hazards ecosystem service pilot implementation, forest owners and sectoral organizations were willing to participate, but most potential local buyers (infrastructure operators, avalanche/torrent control bodies, municipalities) showed low readiness, often citing existing funding programmes. In Poloniny, there were willingness-to-pay signals for recreation, but no buyer mechanism emerged. To compare, the Slovenian tourism pilot succeeded in establishing a payment flow because a tourism company acted as an effective demand-side intermediary.

Potential buyers often do not perceive a clear additional benefit from contributing to a new PES mechanism, especially where public financing already exists. Benefits such as risk reduction or ecosystem quality are rarely included in organizational KPIs. Additionally, transaction pathways for payment are often unclear.

Without a committed buyer - or a credible intermediary representing buyers - PES schemes are unlikely to progress outside the design stage.

Therefore, future pilots should begin with structured buyer segmentation and value proposition development. For each target buyer group, programs should articulate the specific benefit (e.g., risk avoided, revenue generated, compliance value), develop a simple payment offer, and secure at least one buyer expression of interest before finalizing the schemes.

*Existing policy instruments strongly influence PES additionality.*

The analysis in Slovakia identified several existing 'quasi-PES' instruments, such as CAP supports and tax reliefs, that focus on supporting forest ecosystem services (ES), while biodiversity support in the region already receives substantial funding through projects and public programs. Austria's stepping-stone biodiversity model is also anchored in public financing and established monitoring systems. In Slovenia, timber and biodiversity functions are already well integrated into forest management planning, whereas tourism and recreation remain comparatively under-incentivized.

European forest landscapes are already subject to dense governance. Many ecosystem services - especially biodiversity - are partially compensated through existing policy tools. This limits the potential for additional PES unless schemes are carefully designed.

The greatest opportunities for PES may be where funding gaps exist (such as recreation) or where PES can add a performance-based layer to existing schemes. Ignoring the national or regional policies risks duplication and weak buyer interest.

Each new PES initiative should start with a systematic mapping of existing instruments and an assessment of additionality. Project developers should clearly define what the PES pays for that is not already funded or legally required and consider top-up or bundled models where appropriate.

*Credible conditionality and monitoring emphasize scheme viability.*

Austria's biodiversity scheme provides a mature model with clear conditionality (set-aside/no harvest), mid-term contracts (10-20 years), and monitoring integrated with national forest inventory systems. In contrast, the Slovakian case identified unclear monitoring responsibilities as a key barrier to implementation. Slovenian lessons also emphasized the need for coordinated governance and transparent compensation mechanisms.



Monitoring and verification are technically demanding and institutionally sensitive. When responsibilities, costs, or methods are unclear, stakeholders hesitate to commit. Conversely, overly complex monitoring increases transaction costs and discourages participation.

Scalable PES requires monitoring that is both credible and proportionate. Institutional anchoring, such as through a research institute, park authority, or similar body significantly increases confidence and durability.

Monitoring frameworks should be designed upfront, specifying minimum indicators, frequency, responsible institution, and budget allocation. Where possible, project developers should provide an enhanced monitoring option linked to payment levels.

*Intermediaries are essential in fragmented forest ownership contexts.*

The Slovenian tourism pilot succeeded because a tourism provider packaged demand and directed payments to the forest owner. In Austria, the Nature and Geopark's coordinating role was central to high owner willingness. Fragmented private ownership creates high transaction costs and coordination challenges. Individual owners rarely have the capacity or incentive to negotiate directly with buyers or manage compliance requirements.

Future schemes should explicitly design the intermediary function, including standard contracts, owner onboarding processes, consent protocols, and a sustainable financing model for coordination costs.

*Tourism PES offers a relatively fast entry point but requires strong product design.*

In Slovenia, the "Treasure Hunt" tourism package successfully generated payments to forest owners and demonstrated practical feasibility. In Poloniny, tourism and recreation were also identified as the most realistic PES direction, supported by positive willingness-to-pay signals. However, both cases highlighted the need for strong communication, marketing capacity, and stakeholder coordination.

Tourism buyers are already accustomed to paying for experiences, making transaction pathways simpler than in carbon markets. However, forest owners typically lack marketing capabilities, and effective product packaging is important. Tourism-based PES can provide early wins and proof of concept, but scalability depends on professional product development, fair revenue sharing, and credible links to forest management outcomes.

Programs should develop a replicable tourism PES toolkit, including standard product templates, pricing and revenue-sharing models, minimum management requirements, and coordinated marketing support.

*Carbon PES shows promise but remains technically and institutionally demanding.*

Austria's carbon work required forest inventory data gather using drones and terrestrial laser scanning across 7,000 hectares. Key challenges included access permissions, establishing baselines and additionality across heterogeneous management systems, and managing disturbance risk. Discussions in Slovenia similarly highlighted the complexity of existing legislation and the importance of linking forestry with long-lived wood products. In contrast, in Poloniny carbon remained largely at the conceptual stage, partly due to ongoing EU-level discussions on legislation regulating the use of carbon and nature credits in forestry.

Carbon schemes require robust MRV, regulatory alignment, and permanence safeguards. Fragmented ownership and diverse silvicultural practices complicate standardization. Regulatory uncertainty further slows progress. Carbon PES should be approached as a medium-term development pathway rather than a quick pilot opportunity. Combining carbon with biodiversity may strengthen the value proposition but adds design complexity.

Future project development work should prioritize carbon feasibility studies covering methodology selection, baseline and additionality rules, consent protocols, disturbance risk management, and alignment with emerging carbon farming standards.



*Communication is core design component.*

The Slovakian pilot implementation ultimately shifted toward awareness building and PES learning. Slovenian lessons emphasized public communication, targeted messaging, and storytelling as key to tourism PES success. Austrian partners also stressed the need to better “tell the story” of PES to engage private-sector buyers.

PES concepts are abstract and easily misunderstood. Payment legitimacy depends heavily on whether stakeholders understand the rationale and perceive the mechanism as fair. Communication must be treated as a core design variable. Each PES pilot should include a dedicated communications workstream with stakeholder-specific focus, simple visual explanations of payment flows and obligations, regular engagement, and a defined communications lead and budget.

The three-pilot implementation show that the next generation of forest PES in the region will succeed not mainly through more advanced technical design, but through stronger enabling conditions: buyer development, institutional clarity, trusted intermediaries, and strategic communication. Tourism-based mechanisms appear closest to scalable implementation in the short term, while carbon and natural hazard-related schemes need further methodological and market development. Future programs should therefore adopt a staged approach that deliberately builds readiness, secures demand, and integrates PES into existing governance and funding structures before attempting large-scale rollout.

## 4. Main messages from key note speakers

Across the keynote presentations, a consistent message emerged: developing and implementing PES schemes is less about “inventing a new payment” and more about creating the conditions that make agreements credible, workable, and attractive to join. Speakers repeatedly emphasized that PES succeeds when it is treated as a governance and coordination challenge - with finance, monitoring, and communication designed together - rather than as a purely technical policy instrument.

A first shared message was that PES requires a strong foundation of clarity and information. Before a scheme can function, participants must be able to answer: what exactly is the service being paid for, who provides it, who benefits, what is required in practice, and how will it be verified? The Slovakia keynote stressed that schemes often fail when monitoring is not linked to ecosystem service delivery but remains anchored only in general planning documents. In other words, “PES language” must be translated into measurable and verifiable actions or outcomes; otherwise, conditionality becomes vague and legitimacy weak.

The second message addressed financing realism. In various contexts, public and EU funding remain the most reliable foundation for PES-like mechanisms, while purely private financing is typically limited unless actively developed. The Slovak presentation showed a strong stakeholder preference for public or mixed models and identified a “missing promotion” issue for private PES: private participation does not occur automatically; it requires a clear value proposition, trust-building, and credible delivery and verification pathways. Speakers also cautioned that new PES should not be designed in isolation, as many countries already have a landscape of other PES instruments (such as tax reliefs, compensation payments, and rural and development measures). The practical implication is that new PES designs must start by mapping the baseline and then clearly defining what is additional - either by filling gaps, layering performance incentives, or bundling services in ways not covered by existing instruments.

A third message was the importance and the limits of integrating ecosystem services. The Slovak keynote emphasized that forests often deliver multiple services simultaneously (e.g. tourism and biodiversity), which can make schemes more appealing and politically feasible. However, integrating several PES schemes also introduces a design risk: if integrating replaces specification, schemes lose measurability and monitoring becomes contested. The underlying advice was to integrate where it improves feasibility, but still define what is paid for and how performance is assessed, so that buyers and providers share the same expectations.



Perhaps the strongest cross-cutting lesson was that intermediation and communication are structural features of PES, not add-ons. The Austrian keynote warned against PES becoming a “Sisyphus task” - high effort, repeated discussions, and slow progress - when coordination is weak and stakeholders interpret rules separately. Effective PES requires a coordinating entity to reduce transaction costs, align actors, and build shared routines for contracting, monitoring, and conflict resolution. This intermediary role is even more essential when ownership is fragmented or when buyers and providers come from different sectors with different incentives and vocabularies. The keynote further argued that institutional design works only if it can be enacted in practice - meaning communication directly shapes implementation by influencing trust, participation, and shared interpretations of obligations and benefits. Digital tools may help with transparency and monitoring, but they still depend on institutional facilitation and stakeholder engagement to function.

Finally, the Slovenia keynote demonstrated how PES readiness can be developed through platforms that connect sectors and make ecosystem services tangible. The Wood Festival and its Tech Talk were presented as more than outreach events; they served as practical mechanisms for bringing together forestry, wood processing, experts, communities, and decision-makers to explore carbon-related services and long-term carbon storage in wood products, while strengthening regional development narratives around local wood and craftsmanship. The point was that PES implementation is easier when embedded in a broader story of place-based value and cooperation, where stakeholders can see how ecosystem service provision relates to livelihoods, identity, and regional strategy. At the same time, Slovenia highlighted familiar barriers - legislative constraints, scheme complexity, and coordination demands - reinforcing the need for sustained networking, information provision, and locally adapted designs that ensure fair compensation and workable governance.



## 5. Annexes (all presentations)

Development of best-practice  
guidelines and concepts for  
Operationalization and  
marketing of ES

(D.2.3.4)



Online workshop  
12th of February 2026

Svit Brudar, Miha Varga, Petra Muhič Šmuc, Katja  
Konečnik

Reimbursement  
systems for  
forest ecosystem  
services -  
exploring and  
implementing  
new  
opportunities

- Explore locally tailored PES approaches that reflect the specific forest, environmental and socio-economic context of the Kočevsko region
- Address the mismatch between ecosystem service benefits and management restrictions borne by local forest owners
- Engage key regional stakeholders (policy-makers, forest owners, experts, service users) in co-designing PES schemes
- Test a pilot PES implementation in Kočevsko to assess feasibility, acceptance and potential for wider replication





## Key ecosystems service (ES)

4 ES are important in Kočevsko region:

- **Timber production** as a core economic ES, providing income for local forest owners and the regional economy
- **Biodiversity conservation**, with high ecological value forests, Natura 2000 areas and habitats of large carnivores
- **Tourism and recreation**, supporting regional development, human well-being and nature-based experiences
- **Carbon sequestration and storage**, reflecting the role of Kočevsko forests in climate regulation at regional and national levels



## Legal and Institutional Framework

- three fundamental principles - **sustainability, multipurpose and close-to-nature** management
- Free public access to forests → Guaranteed by **Slovenian forest legislation**, providing widespread social benefits
- Biodiversity conservation and habitat protection → Integrated through **forest management plans** aligned with the **Natura 2000** Programme
- Protection of forest ecosystems and water resources → Forest management conducted in accordance with **nature conservation and water protection guidelines (IRSNC)**
- Overall outcome → High level of forest ecosystem protection, with expert support for forest owners to avoid forest over-exploitation





## ES: Wood production

- Wood production is important ES in the Kočevsko region
- Forest management and planning supports maximal wood quality
- It is well supported (financial) by national forestry schemes
- Silvicultural measures are co-financed, reducing management costs for forest owners
- The main objective is high-quality wood production and stable income for forest owners

 Fagus Slovenica

 SIDG

 GOZDNI  
SKLAD  
Gozdni Sklad

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## ES: Biodiversity

- Biodiversity conservation is supported (financial) through existing national schemes
- Financial compensation for private forest owners in Natura 2000 areas
- Focus on conservation of habitats, species and overall forest ecosystem integrity
- Important conservation measures include retention of deadwood and support for natural forest decay processes



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## ES: Carbon sequestration and sink

- Workshop held within the Wood Festival to discuss carbon-related ecosystem services and possibilities for PES
- Linking forestry and wood-processing sectors to enhance carbon storage through sustainable wood use
- Promoting the use of wood in Slovenia as a climate mitigation strategy
- Providing basis and support for regional development



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## ES: Carbon sequestration and sink

- CHALLENGES - Legislative restrictions, complexity of possible PES scheme
- LESSONS LEARNED - providing information and possibilities to future development of schemes PES, networking is the key, long - run working PES
- FUTURE RECOMMENDATIONS: forest region should present the basis for provision of ES and simultaneously create suitable conditions for economic development

**WOOD TECH TALK**  
Strokovna konferenca



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## Selection of the Pilot ES: Tourism and recreation

- Rationale: Fewer existing schemes support tourism and recreation compared to timber or biodiversity
- High development potential: Opportunities to link forest management with eco-tourism and recreational services = *New Strategy of Kočevsko seeks non-massive tourism*
- PES relevance: Potential for payments to forest owners who maintain or enhance recreational and nature-based experiences → private financing - willingness to pay



## Pilot PES implementation : Tourism

A part of the existing forest educational trail leads through private forest



Collaboration with a tourism provider and forest owner



Treasure-hunt tourism package generating financial support for forest measures





## Compensation Mechanism

- The owner allows the use of his forest for mechanism PES
- Visitor purchases the package from a tourism company, connected to specific ES
- A share (%) of the purchased price from tourist package goes to the private forest owner - alternative income source



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## Opportunities for Further Development

- PES expansion to new areas in HFR Kočevsko and other regions with interest of alternative income sources
- Inclusion of more private forest owners
- Use of existing trails - minimal impact on forest ecosystem

### Objectives:

1. Provision of meaningful experience for buyers of the tourist packages,
2. Developing communication and marketing strategies for future development of HFR Kočevje and PES schemes

## Marketing and Promotion

### Goal:

1. Connecting tourist products with forest preservation

- Key role of public communication
- Emphasis on design and storytelling

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## CHALLENGES

- Complex technical requirements
- Demand for communication skills, marketing support and stakeholder cooperation
- Ensuring coordinated governance, fair compensation, and continuous, targeted communication



## LESSONS LEARNED

- Forests in the Kočevsko region provide high-value ecosystem services, going beyond timber production, particularly in biodiversity conservation, tourism, and recreation
- Tourism-based PES schemes present the most promising entry point for PES development in HFR Kočevsko due to strong destination branding and increase of visitor numbers.





## FUTURE RECOMMENDATION

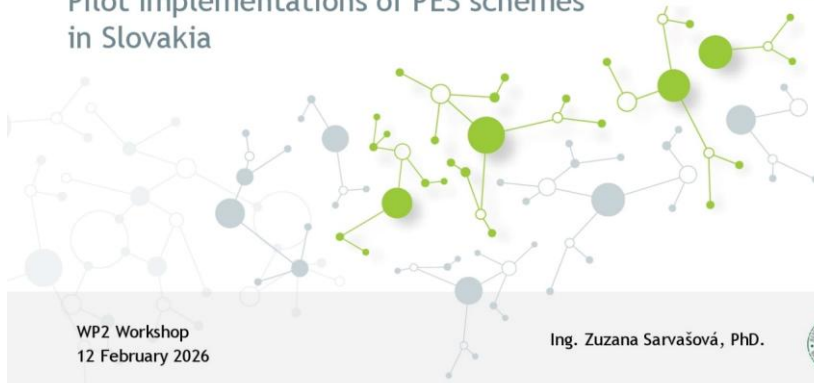
- Develop more structured and recognizable PES mechanisms = clearly communicated to forest owners, local communities, tourism providers, and other stakeholders.
- Strengthen the promotion of ES and education on the values of forests.
- Establish coordinated governance for PES schemes that includes fair compensation and transparent decision-making processes.
- Continue targeted, ongoing communication and build partnerships between forest owners, local communities, tourism organizations and experts.

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## Pilot implementations of PES schemes in Slovakia



WP2 Workshop  
12 February 2026

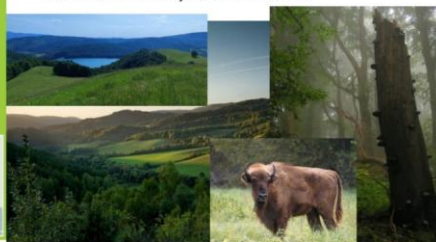
Ing. Zuzana Sarvašová, PhD.



## HFR POLONINY - WHY PES HERE?



- Forests cover >70% of the region
- Poloniny National Park hosts exceptional biodiversity and natural and cultural values
- Priority ES: Wood production and carbon sequestration, Biodiversity conservation, Recreation





## EXISTING PES SCHEMES IN SLOVAKIA

Type of PES	Supported ES	Advantages	Disadvantages	Difficulty (financial, time)
Forest tax relief	All FES, especially biodiversity	Flat rate, simplicity	Poor motivation of provider	Indirect financial burden on public budget
Refunds on ownership rights restrictions due to nature protection	All FES, especially biodiversity	Targeted support	Administrative process	Financial burden on public budget
Forestry support for non-productive forest functions	All FES	Targeted support	Administrative burden	Financial burden on public budget
Financial support from CAP SP	Biodiversity	Clear conditions and criteria of support	Administrative burden	Time-consuming
OP Quality of Environment	Biodiversity	Possibility of higher support	Administrative burden, short-term projects	Time consuming (in terms of project preparation)

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## ADDITIONAL PES SCHEMES THAT CAN BE USED IN HFR POLONINY

Type of financial mechanism	Supported ES	Advantages	Disadvantages	Difficulty (financial, time)
Contractual relations	Individual ES	Clear rules Strong motivation	Exact methodology and monitoring are needed	Need of intermediary
Project support for ES	All ES	Developed project, verified by a third party	Monitoring and control is important	Time-consuming, funds are needed
Purchase or lease of land	All ES	One-time costs	Subsequent management, loss of market value of land	Financial and time demanding
Credits	Carbon, all ES	Market mechanism	Methodological problems	Time-consuming
Certification	All ES, especially wood	Credibility, standardization	Incurred costs	Financial support
Sponsorship	Biodiversity, recreation, carbon, all ES	Increasing awareness, diverse activities	Non-market measure	Need of intermediary

4



- ✓ PES can complement existing public mechanisms, but needs support

## Pilot PES scheme development

step by step guidelines

3 priority PES areas:  
recreation and tourism,  
biodiversity,  
carbon sequestration

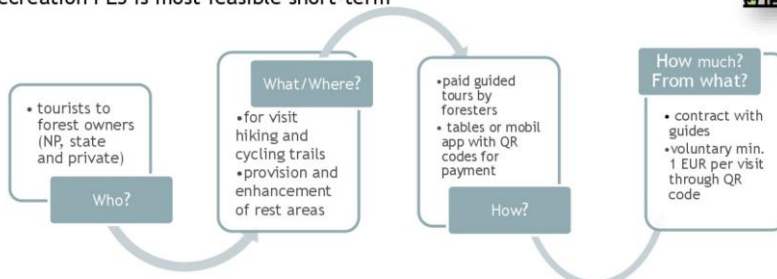
# GUIDELINES



## PILOT PES #1: RECREATION & TOURISM



- ✓ Recreation PES is most feasible short-term



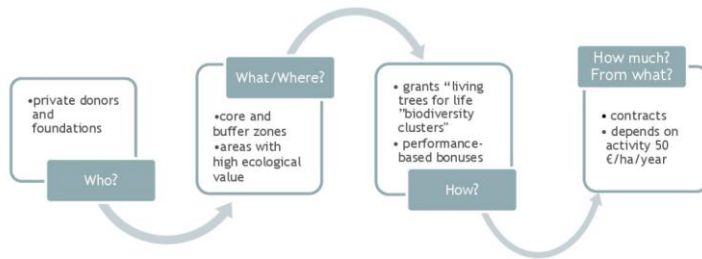
### Funding potential

- Average WTP per forest visit: €6.28 (41.9% willing to contribute)
- Estimated 15,000 visits/year → recreation value = €94,200/year
- Blended funding: visitor fees + tourism companies + municipal budgets + EU funds + recreation credits





## PILOT PES #2: BIODIVERSITY CONSERVATION



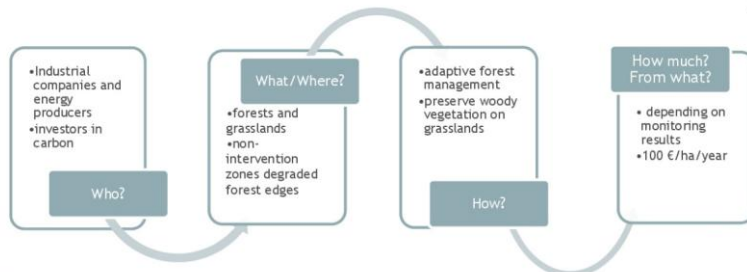
### Funding potential

#### multi-source financing model:

1. Public funding - National and EU-level conservation programs.
2. Private sector involvement - Sponsorships, biodiversity offsets.
3. R&I funding - Horizon Europe, Interreg,...
4. Tourism-based mechanisms - A small "biodiversity contribution" fee
5. Voluntary biodiversity credits - Piloting biodiversity credit schemes

7

## PILOT PES #3: CARBON SEQUESTRATION



### Funding potential

#### hybrid financing model:

1. Voluntary carbon market revenues
2. Public climate funds
3. Corporate social responsibility investments
4. R&I programs

8



## CONCLUSIONS & THE WAY FORWARD

### Key needs for a viable PES pilot:

- ✓ PES literacy and shared understanding,
- ✓ Stakeholder trust and clear incentives,
- ✓ Enabling legal and institutional framework,
- ✓ Simple and credible monitoring systems,
- ✓ **Communication & marketing...**



### ✓ We still need to learn:

What are the **minimum conditions** needed to design a viable PES that can later be scaled up?



#### Project Regions

Austria, Croatia, Czechia,  
Germany, Slovakia, Slovenia



<https://www.interreg-central.eu/projects/healthyforestregions/>



**Project coordination**  
pablo.melotta@hnee.de

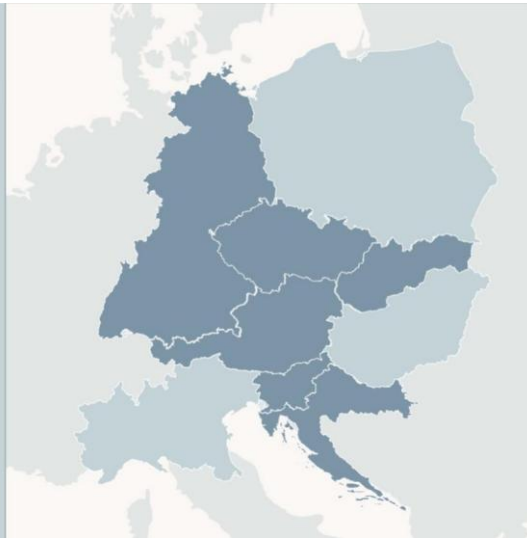
**Project communication**  
louisa.janitschke@hnee.de



<https://www.linkedin.com/company/healthy-forest-regions/>



<https://www.facebook.com/HealthyForestRegions>





## Successful Project of Implementation PES schemes



Online | 12 February 2026



FESTIVAL LESA



Petra Muhič Šmuc, Svit Brudar  
Slovenia Forest Service  
mag. Meta Kamšek, Festival lesa



FESTIVAL LESA

## WOOD FESTIVAL

### WOOD TECH TALK

Annually organized  
expert workshop  
Different themes

### PRIMAL CHAIR

Worldwide  
competition

### WOODEN WORKSHOPS

For children  
For adults

### RESTORING WORKSHOPS

Reuse of massive  
wood products

### DISTRICT FORESTER FOR A DAY

Fresh perspective on  
forest management

### WOODEN PRODUCTS

Online shop





“Until a human approached a tree with thought, even a stump was not a chair – even if someone had already sat on it. Only when a person began to reflect on the essence of the tree, when the word ‘wood’ came into use, could a stump also be thought of as a chair.”

*Lela B. Njatin, 2015*

The **Festival of Wood**, founded in 2013, promotes the value of forests and wood, connects the local community with experts and businesses, and supports new knowledge, skills, and innovative uses of wood.



#### WOOD FESTIVAL AND ITS ACTIVITIES

- Anually orginized discussions **WOOD TECH TALK**= different debates about the **value of local wood** and its use
- Supporting carpentry
- Worlwide competition = Inovative design of massive wooden chair
- Anually workshops = inovative steps toward adding value to wood products (diverse workshops)





IT'S NICE TO BE WOODEN

Festival lesa v letu 2025

Dogodki v 2025

- Predstavitev zaposlitvenih priložnosti družbe SIDG
- Gozdar za en dan
- Vaje v lesu
- Otvoritev
- WOOD TECH TALK

WOODEN WORKSHOPS

Primal chair competition

GOZDAR ZA EN DAN  
Sprehod v gozdarjevih čevljih

LESENI ABONMA ZA ODRASLE  
Sklop lesarskih delavnic

LESENI ABONMA ZA OTROKE  
Sklop lesarskih delavnic

VAJE V LESU





Wood tech talk 2025:  
*Za vitalnost gozdov,  
skupnosti in posameznika*



## WOOD FESTIVAL AS PES

- Exploring PES schemes at a broader scale by connecting experts from different fields = Wood Festival itself could act as a PES-like example, connecting people and experts while providing a local platform to explore potential PES schemes.
- Exploring PES schemes at a broader scale by connecting experts from different fields
- First attempt to analyse the potential of PES schemes together with relevant stakeholders, with a focus on ecosystem services related to wood production



## WOOD TECH TALK 2025

*For the vitality of forests, communities, and individuals*

- Project workshop had a focus on carbon-related ES and PES opportunities.
- Connecting forestry, wood-processing, research, and policy stakeholders = the important step forward in cross-sectoral cooperation and the future development of PES schemes on regional level.
- First joint analysis of PES potential related to wood production and carbon storage.
- Strengthening the forest-wood value chain to enhance long-term carbon storage.
- Supporting sustainable regional development = climate mitigation through wood use.





#### CHALLENGES

- **Legislative restrictions** limit forest management and hold back fair compensation for private owners.
- **PES schemes remain complex and underdeveloped**, requiring research, valuation and coordination among many stakeholders.
- **Weak coordination between key actors** slows down progress

#### LESSONS LEARNED

- **Cooperation is crucial** – PES schemes can only work with strong collaboration among sectors, institutions, owners and industry
- **Clear information and awareness** (education etc.) are essential for understanding ES and compensation mechanisms

#### FUTURE RECOMMENDATION

- **Forest regions should serve as the foundation for ES provision**, reflecting local characteristics and multifunctionality
- **Create conditions for sustainable economic development**, including stable wood supply, regional development centres and strategic investments
- **Develop locally adapted PES schemes** that include forest owners and ensure fair compensation





Thank you  
for your  
Attention

festival.lesa@gmail.com

Festival lesa z.o.o, so.p.  
Novomeška cesta 16  
1330 Kočevje



## Guidance on developing successful PES projects in Slovak conditions

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ResearcherID: ABW-4719-2022



## The PES schemes – the process of developing schemes in Slovakia

- Q1: What information is needed for the successful PES development? (Information)
- Q2: How should payment schemes be implemented in relation to stakeholders' coordination and contract agreements? (Coordination)
- Q3: What stimuli should an new/existing system provide to forest owners/managers who adopt practices that increase chosen ecosystem services? (Incentives)



### The process of developing PES schemes in Slovakia – identifying the key stakeholders on the regional level with the aim to map their opinions and experiences

Stakeholder group	No. organization/regional units
<b>"Buyers"</b>	
Associations of Municipalities of Slovakia	60
Water management utilities	16
State Nature Conservancy	24
State environment administration	72
Slovak Water Management Enterprise	4
NGOs concerning water management/water protection	7
<b>N</b>	183
<b>Sample size (n)*</b>	96
<b>"Sellers"</b>	
LESY SR, state forest enterprise	12
Military Forests and Estates of the SR, SOE	3
TANAP, state forest enterprise	1
Forestry property UiiG, state enterprise	1
Non-state forest owners' associations	15
<b>N</b>	32
<b>Sample size (n)*</b>	28

\* Sample size calculated with Confidence Level z=95%, acceptable margin of error e=7% and Population Proportion 50%



## What are the preferences of Slovak stakeholders?

A) Financing of the schemes

Answer choice	Resp.
<b>Public payments</b> for forest management practices that will increase the quality and/or quantity of water resources in a specific forest land (e.g., Payment for Non-productive Forest functions, payments from Rural Development Programs).	56 %
<b>Private payments</b> , where the one who achieves the highest benefit ("buyer") pays for increased quantity and quality of water resources in a specific forest land (e.g., water cent for citizens and businesses, according to water consumption	6 %
<b>Public-private</b> - Mixed payment mechanism, when increasing the quality and/or quantity of water resources is based on integrated funding from governments and private entities (e.g. public-private contracts, where individuals, businesses and the state/municipality are on the buyer side and based on the contract, the one who pays for the increase in quality and/or quantity of water who benefits from it in the given territory)	38 %



## What are the preferences of Slovak stakeholders?

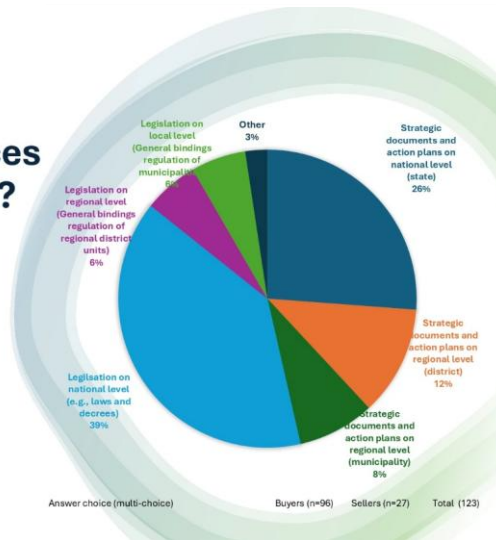
B) Incentives towards ecosystem services

Category	Examples from Buyers (n=103)	Examples from Sellers (n=28)	Total (n=131)
Material help (e.g. seeds, building materials)	3 (11%)	4 (4%)	7 (5%)
Financial incentives	7 (25%)	17 (17%)	24 (18%)
No answer	3 (11%)	6 (6%)	9 (7%)
Preferential tax programmes	5 (18%)	30 (29%)	35 (27%)
Do not know	3 (11%)	19 (18%)	22 (17%)
Community helps with forest cleaning	1 (4%)	0 (0%)	1 (1%)
Positive promotion/goodwill	1 (4%)	11 (11%)	12 (9%)
Advisory workshops and seminars/education programmes	3 (11%)	4 (4%)	7 (5%)
New technologies	1 (4%)	2 (2%)	3 (2%)
The advantage when applying for national/EU projects	1 (4%)	4 (4%)	5 (4%)
Earlier access to modern technologies	0 (0%)	1 (1%)	1 (1%)
Land exchange	0 (0%)	2 (2%)	2 (2%)
No incentives/voluntary support	0 (0%)	3 (3%)	3 (2%)



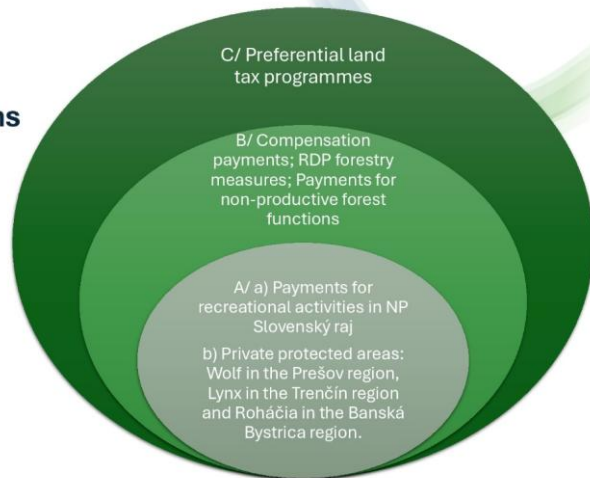
## What are the preferences of Slovak stakeholders?

### C) The institutional framework



## Currently used financing mechanisms in Slovakia

- a) PES core schemes
- b) Other PES
- c) Other incentives





## PES-like and Other incentives in numbers

Schemes	Period	Forest area in ha	Payments total	Payments €/ha (mean)
Preferential land tax programmes	2016	539739.00	4273586.99	7.92
Payments for non-productive forest functions	2017-2023	495001.98	27812253.51	56.19
Compensation payments	2017/2022	9312.11	3208567.62	344.56
RDP measure 8.1 The first afforestation of agricultural land.	2014-2022	255	241855.00	948.45
RDP measure 15.1 Forestry payments -environmental and climate obligations	2014-2022	22000	7713700.00	350.62
RDP measure NATURA 2000 payments (forestland)	2014-2022	28450	7440000.00	261.51



## Ecosystem services delivery in Slovakia

„umbrella effect“  
 „bundling“  
 „side effect“



Preferential land tax programmes  
 Silvicultural payments for non-productive forest functions and their **services**  
 Compensation payments in protected areas  
 RDP payments

*Problem with monitoring – based on Forest Management Plan not on specific ecosystem services indicators*



## Conclusion and recommendations

- The term „ecosystem services“ is not settled in the law – the forest functions and their benefits...
- The possible PES schemes agreements should follow the Business Act
- Ecosystem delivery is based on bundling of FES through preferential forest management activities, except for the recreation
- The Slovak stakeholders on the national and regional levels prefer Public schemes based on forest policy instruments
- The missing promotion of private PES schemes.



## Thank you for attention

More info on PES in Slovak context could be find in studies:

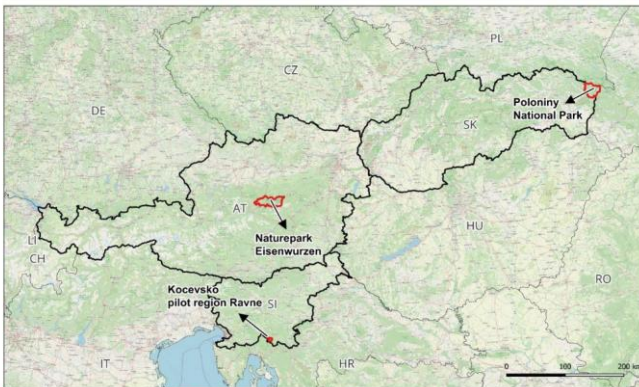
1. Dobšínská, Z., Bálíková, K., Jarský, V., Hrib, M., Štífil, R., & Šálka, J. (2024). Evaluation analysis of the compensation payments schemes for ecosystem services: The case of Czech and Slovak Republic. *Forest Policy and Economics*, 163, 103202.
2. Bálíková, K., Dobšínská, Z., Paletto, A., Sarvašová, Z., Korená Hillayová, M., Štěrbová, M., ... & Šálka, J. (2020). The design of the payments for water-related ecosystem services: what should the ideal payment in Slovakia look like?. *Water*, 12(6), 1563.
3. Bálíková, K., & Šálka, J. (2022). Are silvicultural subsidies an effective payment for ecosystem services in Slovakia?. *Land Use Policy*, 116, 106056.
4. Bálíková, K., Dobšínská, Z., Balázová, E., Valent, P., & Šálka, J. (2021). Forest land tax reductions—an effective payment for forest ecosystem services in Slovakia?. *Central European Forestry Journal*, 67(4), 167-176.
5. Sarvašová, Z., Bálíková, K., Dobšínská, Z., Štěrbová, M., & Šálka, J. (2019). Payments for forest ecosystem services across europe—main approaches and examples from Slovakia. *Ekológia*, 38(2), 154-165.
6. Bálíková, K., Červená, T., De Meo, I., De Vreese, R., Deniz, T., El Mokaddem, A., ... & Paletto, A. (2019). How do stakeholders working on the forest-water nexus perceive payments for ecosystem services?. *Forests*, 11(1), 12.
7. Bálíková, K., Hillayová, M. K., Dúbravská, B., Bartalský, B., Halaj, D., & Dobšínská, Z. (2024). Understanding the role of innovation systems in PES development: A survey of stakeholder perspectives. *Trees, Forests and People*, 15, 100498.



### WP2, Healthy Forest Regions: D.2.3.4: „Development of best practice guidelines for the operationalization of payment for Ecosystem Services“

Pilot implementation in the Nature and Geo Park Eisenwurzen  
(Austria)

Online workshop | 12.02.2026



WORK PACKAGE 2  
TARGET AREAS

target areas  
national borders

Basemap: OpenStreetMap

Scale: 1:4 000 000

Date: March 04, 2024

Map data copyright: OpenStreetMap contributors and available from: Mapbox, OpenStreetMap contributors, Administration Österreich, © EuroGeographics, © Turck&Bauer, Source: Swisstopo, Copernicus, Eurostat/ECDC



E.C.O.

PROJECT PILOT  
REGIONS

2



**Problem statement:** Timber as only income source for forest owners does not support multifunctional forest ecosystems in HFR

**WP2 objective:**

- Assessment of ES increases awareness of multifunctional ecosystems.
- Alternative income schemes- establishing reimbursement system for forest related ecosystem services

3

## OVERVIEW ON WP2

Mapping and quantification of ES (2.1)

Development of potential management strategies (2.2)

Comparison of potential management strategies regarding ES provision (2.2)

Selection of the favourable management scenario for each region (2.2)

Exploration of PES-Schemata (2.3)

Pilot implementation (2.3)

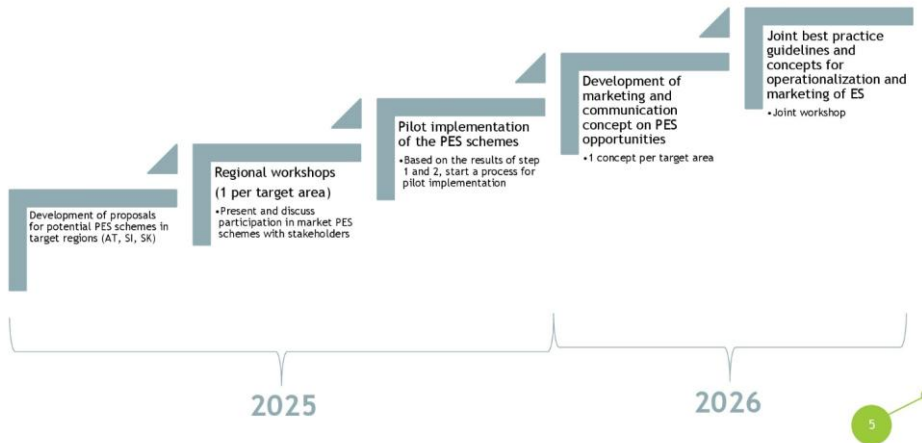
PES Marketing activities (2.3)

PES Best Practise (2.3)

4



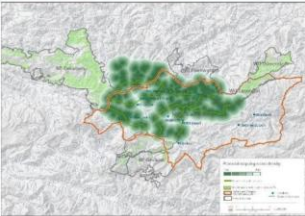
### 2.3 Exploration of potential markets for forest-based ES; development and test implementation of PES schemes





## Biodiversity

Existing example model -  
Stepping Stone Biotopes



## Stepping Stone Biotop

- Goal
  - > Improve biodiversity by enhancing habitat connectivity in forest landscapes
  - > Achieved through management of small forest plots (habitats steppingstones)
- Characteristics
  - > Run by Federal Research Center for Forests (BFW)
  - > Financed by regional, national and EU funds
  - > Targets forest owners willing to adapt management for biodiversity
- Sellers
  - > Private forest owners
  - > Federal forest enterprise
- Buyers
  - > Federal government
  - > EU funding instruments





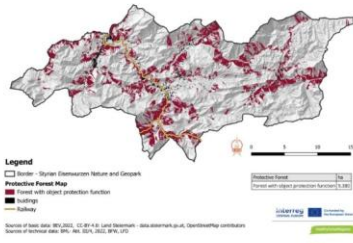
## NATURAL HAZARDS

Establishing new pilot PES model



- Protection against natural hazards as land slides, erosion, avalanches
  - Allocating protective forests in the region
    - > Roads
    - > Settlements
    - > Railroad
  - Identified potential buyers
    - > Interviews with
    - > Railway company, Avalanche protection service, road service
  - Results

Protective Forest - Styrian Eisenwurzen Nature and Geopark

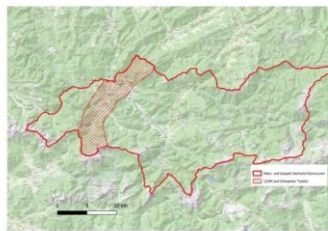


## Carbon

Development of carbon project



- Pilot area on 7000 ha
  - > Ownership structure - small forest owners
- Method
  - > Forest inventory data collection using drone and TLS
- Calculation of stored above ground biomass - calculation of base line
  - > Current carbon stock
  - > Current biodiversity index





## Challenges and lessons learned

### Challenges

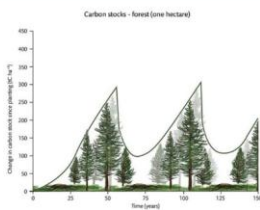
Carbon related

- General
  - Financing
    - > Secure funding comes from regional/national governments and EU
    - > How to engage the private sector on regional level?
  - Defining roles in a PES project - who is responsible for what? Nature and Geo-Park plays significant role as coordinating partner
  - How to deal with disturbances (forest fires, calamities)?

- Carbon related
  - Data gather - permissions for access
  - Baseline set up - additional carbon stored compared to the baseline
    - > **challenging with high number of forest owners**
    - > **different silvicultural activities (clear cut vs. continuous cover management)**

Credits = carbon in project - carbon in baseline scenario

Carbon credits reward change from the baseline, not absolute carbon levels.



<https://www.forestryresearch.gov.uk/climate-change/carbon/carbon-sequestration/>

Forest management	Baseline carbon	With credits projects
Clear cut rotation (60-80 years)	Low (after cut)	High (extended rotation period)
Continuous cover	High (selected cut)	Low (leaves more trees standing)



## Roadmap ahead

- Regulatory - to follow the development of the CRCF regulation for standards
- Feasibility study
  - Which carbon standard is eligible?
  - Which methodologies are most suitable?
  - What resources are required to go through each step of the process (financial, human, time)?
  - What potential revenues are likely to be generated from carbon credits sale?
  - What are the risks and barriers related to developing carbon credit project?
  - What legal aspect can impact the implementation of the project?
- Continuous work with forest owners and potential buyers - building trust
- Upscaling PES pilot projects

## Thank you





## The importance of communication and the intermediary role in Payment for Ecosystem Services (PES)

Mona Nazari

Department of Ecosystem Management Climate and Biodiversity  
Institute of Silviculture  
BOKU University

ECO Workshop

12/02/2026



## Preventing Sisyphus Task

- High effort without coordination
- Actors working in parallel, not together
- Repetition instead of learning
- Progress depends on communication





## The Importance of Communication in PES



PES is a multi-actor governance arrangement  
Buyers, providers, intermediaries, and public authorities interact across scales.



Institutional design ≠ implementation reality  
Formal rules and contracts depend on how actors interpret, negotiate, and enact them.



Communication capacity shapes outcomes  
Trust, coordination, and participation emerge from how actors interact.



## Project Analysis Overview

### Projects behind the evidence

- ProForPES (LIFE)
- NOBEL (H2020)
- SINCERE
- InnoForEst
- PESFOR-W

### The database

- 116 PES and PES-like cases across Europe
- Mixed methods: database + survey + interviews





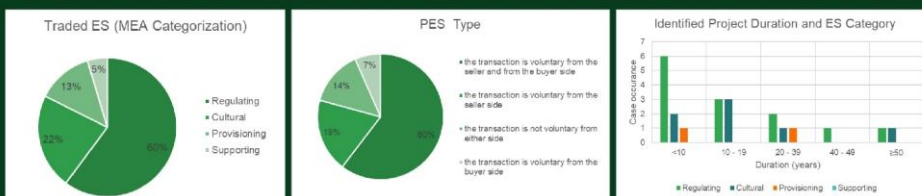
## European case studies in practice-Factors

Result of the structured analytical framework based on 116 case studies

Strong focus on  
regulating services  
(water, climate)

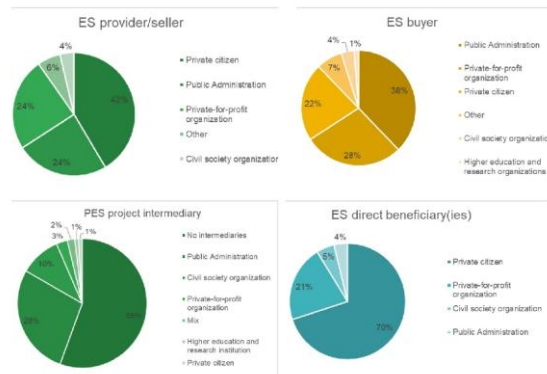
Mostly voluntary  
participation

Many pilots, but some  
long-term schemes



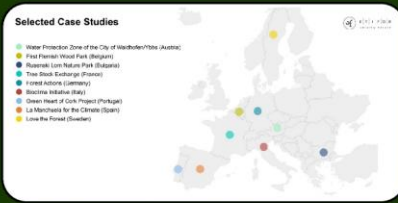
## European PES case studies in practice-Actors

- Public administrations (buyers & coordinators)
- Forest managers as providers
- NGOs & regional bodies as intermediaries
- Citizens & users as beneficiaries

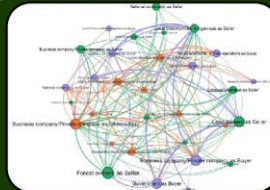




## Insights on in-depth case studies



**Interviews**  
9 European PES experts participated in an online questionnaire



**Actor mapping**  
Visualizing PES actors' role relationships using Gephi analysis



**SWOT analysis**  
A Comparative qualitative interpretation across cases based on expert perceptions



### SWOT analysis of selected case studies



Communication is not just a supporting factor it is a structural element of PES design and implementation.



## Building Trust

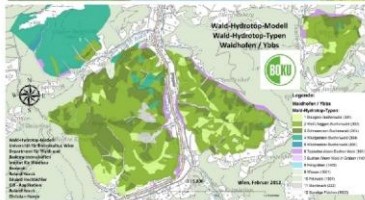
**Case: Waidhofen/Ybbs – Austria**  
Water Protection Zone (Drinking Water PES)

### Basic Characteristics

- **Country:** Austria
- **Location:** Lower Austria
- **Context:** Urban municipality with forested watershed
- **Area:** approx. 500 ha
- **Duration:** 2018 – present
- **Type of PES:** Private–Public arrangement

### Actors design

**Buyer:** Municipal water works  
**Providers:** Private forest owners, Public forest owners  
**Intermediary / Facilitator:** Local municipal authority, Water works administration. Locally embedded governance structure



### Why Is Relevant?

- Forest owners required to adjust management practices
- Compliance monitored by municipal authority
- Buyer and regulator are the same public institution
- Urban–rural dependency structure
- Collaborative governance and regular consultations
- Transparency emphasized in implementation



## Coordinating Interests

**Case: Rusenski Lom Nature Park – Bulgaria**  
Biodiversity conservation

### Basic Characteristics

- **Country:** Bulgaria
- **Location:** Rusenski Lom Nature Park
- **Context:** Protected area with biodiversity and tourism activities
- **Area:** approx. 3,408 ha (Nature Park territory)
- **Duration:** Established 1970 (PES-like coordination mechanisms ongoing)
- **Type of arrangement:** Public–Private / PES-like governance structure

### Actors design

**Buyer:** Public authorities, Tourism-related stakeholders (indirect beneficiaries)  
**Providers:** Local land users, Forest managers, Tourism operators  
**Intermediary / Facilitator:** Nature Park authority, Coordinates conservation and tourism interests, Locally embedded governance structure



### Why Is Relevant?

- Multiple stakeholder groups with different objectives
- Conservation goals vs. tourism and economic activities
- Fragmented land-use and management interests
- Park authority responsible for biodiversity protection
- Need for structured communication across sectors
- Risk of conflict without coordination



## Making Carbon Understandable

**Case: Waldaktie – Germany**  
Climate regulation (carbon sequestration)

### Basic Characteristics

- **Country:** Germany
- **Location:** Mecklenburg–Western Pomerania
- **Context:** State-level forest climate initiative
- **Area:** State forest areas participating in the scheme
- **Duration:** Since 2007 (ongoing)
- **Type of arrangement:** Public initiative with voluntary participation

### Actors design

**Buyer:** Citizens, Companies, Visitors  
**Providers:** State forest administration  
**Intermediary / Facilitator:** State forest authority / Environmental ministry, Initiative "Waldaktie" as a communication platform, Publicly embedded governance structure

### Why Is Relevant?

- Carbon sequestration is invisible and abstract
- Climate benefits are long-term and difficult to measure locally
- Citizens are geographically and emotionally distant from forest management
- Payment is symbolic (purchase of "forest share")
- Communication translates carbon storage into a tangible contribution
- Public trust depends on clarity and transparency of climate claims



## Scaling Beyond Pilots

**Case: BioClima – Italy**  
Climate regulation and Biodiversity conservation

### Basic Characteristics

- **Country:** Italy
- **Location:** Lombardy region
- **Context:** Regional climate and biodiversity initiative
- **Area:** Regional forest and natural areas (multi-site)
- **Duration:** Project-based (LIFE framework, multi-year)
- **Type of arrangement:** Public–Private collaboration

### Actors design

**Buyer:** Regional authority, Private companies  
**Providers:** Land managers, Forest owners  
**Intermediary / Facilitator:** Regional public authority, Project partners (technical & coordination role), Institutionalized coordination structure

### Why Is Relevant?

- Moving from pilot actions to broader regional implementation
- Integrating biodiversity and carbon into regional strategy
- Combining public and private funding streams
- Administrative complexity across governance levels
- Need for long-term institutional embedding
- Coordination across multiple actors and funding sources





## Technology and Facilitation

### Case: Bourse des Arbres – France Carbon sequestration

#### Basic Characteristics

- **Country:** France
- **Location:** Regional / multi-site
- **Context:** Digital marketplace for forest ecosystem services
- **Area:** Participating forest areas (multi-owner)
- **Duration:** Project-based (NOBEL-related initiative)
- **Type of arrangement:** Platform-based PES mechanism

#### Actors design

- Buyer:** Companies, Private investors
- Providers:** Forest owners
- Intermediary / Facilitator:** Digital platform administrators, Supporting NGOs / project partners, Technical coordination structure

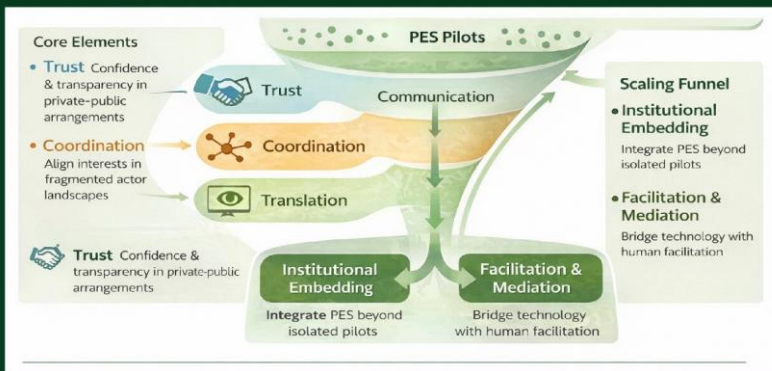


#### Why Is Relevant?

- Platform-based matching of buyers and providers
- Carbon and biodiversity services are data-driven
- Digital transparency required
- Risk of complexity without guidance
- Forest owners require support to navigate technical requirements
- Trust depends on both technology and human facilitation



## Institutional Context: from Pilots to Impact





## Key Insights for effective PES Implementation



Transparent communication and stakeholder dialogue are critical enabling factors in PES implementation



Intermediaries play a central role in coordinating actors and reducing transaction costs



Digital tools and media platforms enhance monitoring, transparency, and public awareness, but require institutional support



## Thank You!

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