Innovative Mechanisms
IN PAYMENTS FOR ECOSYSTEM SERVICES

SCALABILITY AND LESSONS LEARNED FROM SINCERE
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Summary

The SINCERE project looks at innovative ways to value and implement forest ecosystem services (FES) through the development of novel policies and new business models, connecting knowledge and expertise from practice, science, and policy, across Europe and beyond.

Throughout this publication, we briefly present profiles of SINCERE Innovative Action case studies and the Innovative Mechanisms they experimented with, from which we will highlight the scalability potential and key learnings, according to the analysis developments during the SINCERE project.

Among the learning points identified, many are related to the introduction of a FES approach in forest governance, management, or policy, especially in countries or regions where this approach had not yet been integrated.

Introducing these ideas and convincing stakeholders to participate had sometimes required long processes of communication and the local focus is important, as no ‘one-fits-all’ solution exists.

Compatibility with the local institutional context is of course necessary for successful implementation. However, sustainability transition implies going beyond business-as-usual, and it is crucial to find a balance between conforming to the current institutional context and challenging the institutional and policy shortcomings, gaps, or incoherence at the regional, national or EU-level.
Glossary

**Forest Ecosystem Services (FES):** the benefits humans obtain from forest ecosystems. These include provisioning services, such as timber, non-wood forest products and water; regulating services such as climate and water regulation; cultural services such as recreation, aesthetics and cultural heritage.

**Innovation Actions (IA):** activities conducted in the regional cases directly aimed at co-designing, co-testing, co-implementing and co-evaluating Innovative Mechanisms that support the provision of Forest Ecosystem Services.

**Innovative Mechanisms (IM):** novel policies, business models and other mechanisms, including Payments for Ecosystem/Environmental services, to support the provision of Forest Ecosystem Services.

**Innovation Action cases (IA cases):** the regional cases where IAs are developed and implemented.

**Payments for Ecosystem/Environmental Services (PES):** Voluntary transactions between service users and service providers that are conditional on agreed rules of natural resource management for generating off-site services.

**Stakeholders:** all types of active groups with an interest in IM and forest governance, ranging from public officials and administrations to private-sector interest groups. SINCERE distinguishes three types of stakeholders: (i) national and international (European) stakeholders, (ii) (mostly local) stakeholders linked to the IA cases; and (iii) (mostly local) stakeholders outside the IA cases with an interest in the IA.
Introduction to SINCERE

The SINCERE project looks at innovative ways to value and implement forest ecosystem services (FES) through the development of novel policies and new business models, connecting knowledge and expertise from practice, science and policy, across Europe and beyond.

Eleven (11) Innovation Actions – IAs (case studies) provide the basis for continuous collaborative learning in nine regions in Europe and two IAs in different continents and contexts, in Peru and Russia.

The SINCERE case studies, referred from now on as IAs, explore new means to enhance FES in ways that benefit forest owners and managers, as well as serving the broad needs of society. Working with key stakeholders (local and supra-local), the IAs employ different IMs that offer incentives to provide relevant FES. SINCERE includes eleven (11) IAs in nine (9) countries.

Throughout this publication, we briefly present the profiles of four (4) IAs and their IMs, which were thoroughly assessed on their performance, ecological, social, economic and institutional sustainability, from which we will highlight the scalability potential and key learnings, according to the analysis developments during the SINCERE project.

Forest Ecosystem Service?
It refers to the benefits humans obtain from forest ecosystems. These include provisioning services, such as timber, non-wood forest products and water; regulating services such as climate and water regulation; cultural services such as recreation, aesthetics, and cultural heritage.

An Innovation Action (IAs)?
It refers to activities conducted in the regional cases directly aimed at co-designing, co-testing, co-implementing and co-evaluating Innovative Mechanisms that support the provision of Forest Ecosystem Services.

An Innovative Mechanism (IMs)?
It refers to novel policies, business models and other mechanisms, including Payments for Ecosystem/Environmental services, to support the provision of Forest Ecosystem Services.
Understanding the market failures addressed by the Innovative Mechanisms

The purpose of most of the IMs pursued in the different cases across SINCERE is to correct, at least in part, a failure by conventional markets to deliver socially optimal amount of forest ecosystem. The ability of any given mechanism to do that depends for a great deal on the characteristics of the ecosystem service in question, and the regulatory framework specifying property and use rights.

In our analysis, we draw upon a framework that categorizes different goods (or services) according to two key aspects: The degree of rivalry or subtractability in consumption and the degree to which exclusion is feasible, i.e. exclusion of some from benefitting or consuming the good or service. The categories are depicted in the table below.

<table>
<thead>
<tr>
<th>Subtractable</th>
<th>Non-subtractable</th>
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<tbody>
<tr>
<td>Exclusion feasible</td>
<td></td>
</tr>
<tr>
<td>a: Private goods</td>
<td>b: Club goods</td>
</tr>
<tr>
<td>Exclusion infeasible</td>
<td></td>
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<tr>
<td>c: Common-pool resource</td>
<td>d: Public goods</td>
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</tbody>
</table>

Table 1. Goods according to degree of substractability and exclusion
Among forest ecosystem services, marketed goods like wood and non-wood forest products are **private goods**, and hence in cell A. Both goods are subtractable (i.e. if x use the wood, it is not available for y) and provided sufficiently strong institutions, exclusion from (legal) consumption is possible.

However, regulations define property rights for landowners: for instance, goods that are in one country a **private good** may in others not be considered as such, because no exclusion rights have been assigned. That affects the potential for upscaling different IMs as discussed below, also in SINCERE. If a forest ecosystem provides goods or services that are subtractable, but in a context where exclusion is not feasible, then these goods or services have the characteristic of a **common pool resource**, cell C in Table 1. In some countries, this may be true for e.g. picking mushrooms, if the right to this is assigned to all and access to the forest floor is allowed, too. In cases with heavy non-exclusive recreational use, externalities such as congestion, noise etc. caused by recreation may render other ecosystem services, such as peace and quietness, to common pool resources.

Many forest ecosystem services are non-subtractable. If only some limited form of exclusion is feasible, we may consider them **club goods**, cell B in Table 1. Examples of such goods or services are recreational services marketed for specific user groups in countries where some regulatory limitations on recreational uses are in place, e.g. for horseback riding or different sports activities, provided these exclusion rights can be sanctioned.

Finally, if it is infeasible to exclude anyone from benefitting from an ecosystem service, and this benefitting is non-subtractable, then the forest ecosystem service is labelled a **public good** (cell D in Table 1). These include regulatory ecosystem services like biodiversity conservation, watershed regulation and climate change mitigation. Nobody can be excluded from enjoying such services, and their use does not reduce the benefits available to others. This makes it exceedingly hard to coerce user fees or other payments from beneficiaries, due to the inherent free-riding incentives. This class of goods is of particular interest for public economics and policy, and for regulation targeting forest management standards. It is also a key focus of the payment for ecosystem services literature.

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1 (Nichiforel et al. 2018)
Definition and Scope

Payments for Ecosystem Services

Conservation practitioners worldwide are searching for more cost-effective and equitable ways of using scarce funds.

Payments for Ecosystem Services (PES), also often referred to as Payments for Environmental Services, and are two terms that are treated as quasi-synonyms. ‘Ecocompensation’, ‘rewards’, and ‘conditional cash transfers’ are examples of other terms being used for the same or similar environmental incentive mechanisms.

PES generally aim to incentivize landowners and other resource stewards to adopt environmentally friendly practices of protection, sustainable use, or restoration. PES are paid voluntarily by either private service users or public entities, compensating resource stewards contingent upon their contractual compliance.

What is?

Payments for Ecosystem/ Environmental Services (PES)?
It refers to voluntary transactions between service users and service providers that are conditional on agreed rules of natural resource management for generating off-site services.

1 (Wunder, 2015)
Innovative Mechanisms in Payments for Ecosystem Services

Related Innovation Mechanisms

PES thus represent a new paradigm of voluntary, contractual conservation, where ES providers choose whether or not to join a PES scheme, but ES users or funders allegedly only pay for what they get\(^1\). However, PES are not the only innovative incentive mechanisms using conditionality, and here are other examples of PES:

Forest-based climate change mitigation known as REDD+ (Reducing emissions from deforestation and forest degradation, fostering conservation, sustainable management of forests, and enhancement of forest carbon stocks) can be seen as a PES-like arrangement between industrial greenhouse gas (GHG) high emitting countries and forest-rich countries\(^2\). The idea of compensated reductions in forest-based emissions that is behind REDD+ entered the international climate change negotiation at the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties in Bali in 2007. Since then, hundreds of REDD+ subnational pilot projects have been carried out.

Green certification has also emerged as a relevant conditional mechanism, using the labelling of commercial products as a point of leverage from the consumer side. It is also a voluntary process through which a certifier defines a set of standards to assess the quality of natural resource management and production\(^3\).

Although certification schemes may be reinforced or incentivized, producers decide whether they will join the certification scheme, often based on financial benefits, moral priorities, and the ease of implementing the imposed requirements. Among these financial benefits is the idea that consumers will pay a premium for socially and environmentally sound production practices.

\(^1\) (Angelsen, 2017)
\(^2\) (Wertz-Kanounnikoff and Angelsen, 2009)
\(^3\) (Pokorny et al. 2011)
Related Innovation Mechanisms

Ecological fiscal transfers (EFT), such as Brazil’s ecological value-added tax\(^1\) or India’s annual 7-12 billion US$ intergovernmental pro-environmental transfers\(^2\), represent fiscal revenues transferred conditionally from higher (e.g., national) to lower-level government (e.g., municipalities).

This is a policy instrument designed to provide “incentives to local governments to maintain or increase biodiversity conservation activities which provide ecological benefits to society in general”\(^3\).

EFTs function primarily as a funding mechanism and can be evaluated based on clear environmental actions or expanded conservation space, rather than being measurable only in relation to the amount of pre-existing conserved area\(^4\).

Finally, the PES principle of conditionality is also being used in other mechanisms like biodiversity offsets but, unlike for PES, here an upfront biodiversity loss from development activities is being permitted\(^5\), thus having closer ties with the environmentally regulated ‘polluter pays’ principle. Conversely, PES follow the ‘provider gets’ principle, building on different entitlements in natural resource management\(^6\).

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1 (Grieg-Gran, 2000)  
2 (Bush and Mukherjee, 2018)  
3 (Schröter-Schlaack et al. 2014)  
4 (Schröter-Schlaack et al. 2014; Droste et al. 2018)  
5 (Vaissiere et al. 2020)  
6 (Mauerhofer et al. 2013)
The landscape of Financing for FES

Regulation varies across the EU which can have significant consequences for the legal basis for policy instruments as well as their political popularity. This has been demonstrated to influence who is perceived as responsible for financing ecosystem services.

An uptake in social responsibility from the private sector, driven by tax breaks and consumer demands are emerging, giving rise to an increased demand for financing opportunities for forest owners and public-private sector cooperation.

There is the example of the Danish Nature fund, which collaborates public-private funding to manage forests and improve FES. The funding comes from two conservation organisations, the Villum Foundation and Aage V. Jensen Nature Foundation alongside public funding. Flemming’s presentation highlights further opportunities for public-private funding with the use of tax breaks. Tax breaks can be given to businesses in exchange for the financing of biodiversity and environmental conservation, therefore this also offers an opportunity for income streams for funding FES.
In Europe, **Payment for Ecosystem Services** could have an increased role through an increased realization on behalf of private actors that the European state regulation alone is unable to deliver the full suite of ecosystem services that service users and societies need (user-financed PES).

**In principle, public regulation could continue to safeguard a minimum threshold** of ES delivery to society, while PES could be responsible for a ‘premium ES delivery’, i.e. over and above the minimum mandated by regulation.

Such a sticks-and-carrot strategy could also be in the interest of landowners, who would not only have to carry the costs of basic environmental compliance, but would receive compensatory economic incentives on top, so as to make environmental protection efforts worth their while.

**However, a higher private willingness to pay would need to be triggered, so that the economics of PES could come to take off in Europe.**

For example, if climate change continues to increase the frequency of weather anomalies and catastrophic events, such as droughts, wildfires, stormflows and flooding, these will increase our societies’ demand for environmental adaptation and mitigation – perhaps to an extent that sometimes financially pressurized public environmental agencies might not always be able to deliver.

**In other words, while there are good structural explanations of the current scarcity of PES initiatives in Europe, it is also possible to imagine a series of game changers to this picture – with climate change arguably lining up as a root trigger.** For forests in particular, unlike the tropical/developing country PES focus on unanimously increasing forest cover, European forest-based, broad-scaled PES would likely be more complex. It would imply to some extent the conservation of open landscapes and mosaics, which sometimes will also imply to pay for keeping forest regrowth and biomass accumulation back from their business-as-usual expansionary forest transition path, i.e. spontaneous natural forest regeneration.
A map of innovative ways in which forests are being employed and managed to provide benefits to people has been launched by the Spurring INnovations for forest eCosystem sERvices in Europe (SINCERE) project.

The map is based on an Inventory of Innovative Mechanisms (IM) produced by partners in the project, which highlights good practices at a European scale that could be replicable elsewhere. Innovative Mechanisms are novel policies, business models and other projects or initiatives to support forest management that provides benefits to people, known as forest ecosystem services (FES). Openly available on the SINCERE website, the map allows the user to view a multiplicity of cases obtained by consulting publicly available information which is subsequently integrated and confirmed by experts (validated) in many cases.

Interactive map available at https://sincereforests.eu/innovation/innovation-inventory-map/
In this chapter we will look into different innovative mechanisms, according to four categories of income streams and provide analysis of one SINCERE IM case-study for each category:

> **Reverse auctions**: Denmark, Reverse auctions pilot for biodiversity protection;
> **Payments, Market orientation**: Italy, The Mushrooms of Borgotaro IGP;
> **Market-based orientation**: Finland, Landscape and Recreation Value Trade;
> **Payment/Benefits with “Administrative Pricing”**: Spain, Catalonia, Forests for water.

For each income stream category, we will summarise the IM case-study and its’ potential for upscaling.

### Reverse Auctions

Under the Reverse Auction mechanism, the forest owners will put forward offers/bids to the contractor, and these bids represent the prices at which the landowners are willing to sell goods and services, i.e. in the case of forest protection the prices at which they would give up harvesting rights. The best fitting offers will be awarded the contract.
The Danish case

A reverse auction for biodiversity protection measures

This IA aims to inspire changes to existing public grant schemes for biodiversity protection on privately owned land by demonstrating in practice how a competitive bidding process can improve the coordination of nature conservation efforts, cost-effectiveness, and ownership among landowners.

In this IA, the intention is to test the use of reverse auctions as an innovative mechanism for allocating incentive payments through a bidding process, thus engaging forest owners in cost-effective provision of biodiversity protection on their lands. The reverse auction was implemented as a discriminatory price auction where the landowners were asked to both design the action to be taken and to set the price, i.e. the payment wanted for implementing the action. Thus, a positive incentive was created.

All landowners expressed satisfaction with the agreements, as would be expected given the positive and flexible incentive design. Most landowners whose bid was rejected also accepted the decision and asked if future competitions would be opened. The broader public may of course mainly enjoy the existence values of these actions - and will only do so if/when they obtain public information about the experiment. However, the public may experience the impacts from several of the contracted areas as they are open to the public for recreational purposes.
The Danish case

Is there a potential for upscaling the case?

**National geographical upscaling**

Yes, there is potential for upscaling such an instrument to the entire country. The only, but critical limitation is the amount of available funding.

**Upscaling to other schemes**

There is a potential for extrapolating the lessons learned to other similar biodiversity protection schemes, for instance a scheme of setting forest aside for biodiversity.

**Upscaling in scope**

Yes, the specific reverse auction design may be suitable for upscaling to other ecosystem services. In modified forms, the instrument may also be worthwhile in e.g. land use change actions related to reduced nitrogen loads and the Water Framework Directive.

**Upscaling to other countries**

In many EU countries, the regulatory framework allows paying conditional environmental protection subsidies to landowners. The largest potential for upscaling for impact may be in countries where two conditions are fulfilled: i) current regulations leave forest owners considerable decision space for management, and ii) private forest owners own a non-trivial part of biologically valuable forestland.
The Danish case

Is there a potential for upscaling the case?

The IMs implemented in SINCERE’s Danish case target improved biodiversity conservation measures, i.e. pure public, non-subtractable goods where exclusion is neither feasible nor desirable. They are designing instruments to encourage forest owners’ participation, yet also aiming for more cost-effectiveness induced through competition in the reverse auctions.

Notably, they obtain access, in different ways, to experimental implementation funds, and thus to some extent remain unchallenged on financing sources availability. For public goods, this funding cannot be coerced reliably through markets, as the lack of exclusion options will induce incentives to free-ride for us all.

Indeed, across the EU several funding schemes are in place targeting similar public goods, but using much simpler instruments, e.g. flat-rate schemes with little outcome attention and prioritization.

The design and ideas of this IM can clearly be upscaled provided funding is available for the forest ecosystem services in focus of future upscaling activities, and potentially increase cost effectiveness and targeting relative to current flat-rate schemes used in many countries for similar FES.
Market Orientation
Payments

Three SINCERE innovation actions have designed IMs that aim to extract payments from on-site users to transfer income to providers of forest ecosystem services, incentivizing them to enhance the provision of these services. These transactions can be fairly direct access fees (if you don’t pay, you cannot come in and use the service), but they may also involve usage and management provisions over time, in which case they will be contractually phrased. In this case, there is a payment for a clearly defined service with a close market connection, such as mushroom picking licences or funeral forests.

The Italian Borgotaro case

Improving commercialisation of mushroom picking

The ‘Mushrooms of Borgotaro IGP’ are produced in the woods of the Tuscan-Emilian Apennines. The IA was implemented firstly in 1964 with the creation of the Consorzio Comunalie Parmensi (CCP) to organize the commercialisation of recreational permits for wild mushroom collection. In the framework of SINCERE the IA is renewed through the development of an IM which consists of a new online platform or application to improve the commercialisation of the permits and the pickers’ experience.

The main goal of this IM is to change the typology of users and demands (to reach younger customers, to orient pickers to areas specific to their permit category, and to improve the security of visitors). The IM does not seem to secure compliance, i.e. avoidance of people picking without a permit, to a different degree than the already existing permit system.

Specifically, the online system is developed so that users can access and buy permits through a mobile phone application which at the same time offers maps of the forest and works as a way-finding tool.
Innovative Mechanisms in Payments for Ecosystem Services

The forests primarily consist of the species chestnut and beech and have been managed as coppice forests for centuries with a 40-year coppice cycle. The legal framework and arrangements on which the IM builds were established in 1964 with the creation of the Consorzio Comunalie Parmensi (CCP) to organize the commercialization of permits for recreational wild mushroom picking. National laws have formally privatized the wild mushroom grown in managed forests, thus making it possible to sell harvesting rights within specific local regulation. The existing permits are paper-based and have to be bought in-person at designated sales points, with almost 100,000 paying mushroom pickers per year.

Mushroom picking revenues from forest land owned by municipalities are distributed according to written rules. Revenues are either reinvested in the forest management that will allow for specific silvicultural treatments or invested in community projects such as the renovation of forest infrastructure.

The recreational services delivered by the forest might be enhanced for the mushroom pickers, as ease of access and experience are improved for existing as well as new pickers. As a result of the enhanced value for end users and their willingness to pay for this, the forest owners’ income and welfare would be improved too.

The Italian Borgotaro case

Improving commercialisation of mushroom picking
The Italian Borgotaro case

Is there a potential for upscaling the case?

National geographical upscaling

The IM has potential to be upscaled to other forests and regions in Italy, if similar structures of selling paper permits for mushroom picking exist in other regions. Such a platform has a number of generic features and would need little adjustment.

Upscaling to other schemes

Yes, if there are similar regulation and instruments in place addressing such service.

Upscaling in scope

The online application appears to be potentially expandable to activities of e.g. mountain biking, horseback riding, specific walking trails, shelter camping etc. Depending only on the existing legal framework allowing permit selling for these different forest services.

Upscaling to other countries

The conversion to an online platform offers potential for reducing transaction costs for forest owners. These services are traditionally free for the public to enjoy, and in order to be successful, it must offer something that is up and above what is currently the right enjoyed by forest users.
Innovative Mechanisms in Payments for Ecosystem Services

The Italian Borgotaro case

Is there a potential for upscaling the case?

Personal values of forest owners can play a key role in increasing forest benefits. Combining different forest ecosystem services such as carbon credits, funerals etc. provides opportunities, however, this may lead to an increase in the value of some services provided by the forests while reducing the effectiveness of conservation measures. Carefully weighing health and cultural ecosystem services in comparison to the use of forest for nature conservation is highly important.

It should be noted that this case is designed to enhance marketability of an already marketed good: licenses to pick mushrooms in specific forest areas. This is essentially already a private good, and the market thus should be able to secure adequate payment for the socially optimal provision of mushroom picking. However, the reason this is a marketed good in some countries and not others is not only adequate supply and demand, but also whether forest owners can legally exclude users from the resource. If that is not possible, mushrooms would be a common pool resource instead. Thus, the assignment of exclusion rights1 is part of what enables straightforward market solutions here.

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1 Ostrom, 2003
Compensation

Market-based

For this type of income stream, there is compensation for the lost revenue due to change in forest management. In this case, funding was collected through donations from tourists and visitors.

The Finnish case

Paying for landscape FES in Ruka-Kuusamo

This IA proposes a PES system, the Landscape and Recreation Value Trade, in which forest owners are compensated for voluntarily enhancing the provision of landscape and recreational values in their forests, e.g., landscape amenities and biodiversity protection. A model for piloting this IM was developed in the Ruka-Kuusamo tourism area in Finland.

It consists of a planning process to select valuable forest areas in terms of biodiversity, landscape and carbon stock and a pilot project to collect and distribute funds to implement forest management changes to support the provision of ES in these valuable areas and compensate the opportunity cost related to avoiding clear felling and the following heavy soil preparation. The funds for the IM are collected through a media campaign targeted at recreational users, such as tourists, tourism entrepreneurs and local citizens.

Ruka-Kuusamo is a forested area of semi-natural indigenous species. It is one of the major nature-based tourism areas in Finland visited by about one million visitors per year. More than 80% of the area is privately owned by small, non-industrial owners, whose income depends on timber sales.
The Finnish case

Is there a potential for upscaling the case?

National geographical upscaling

Yes, forests cover more than 80% of the land in Finland and about 60% of all forests are privately owned and a national upscaling of the IM. The present IM presents valuable lessons for integrating tourism and commercial forestry needs and interests. However, the limited fundraising success also highlights the inherent weakness in the voluntary donation instrument, which of course threatens a sustainable upscaling.

Upscaling to other schemes

Given the format and focus of the IA, it is not obvious that there are other related existing regulation and instruments in place that may adopt aspects of this IM.

Upscaling in scope

Yes, similar approaches could be used for FES of a more public good nature like biodiversity conservation and carbon sequestration. However, the link between donations and provision might be hard to document and might cause disincentives when not related to services holding direct or indirect use values such as recreation.

Upscaling to other countries

Yes, but in order to succeed there is a need for top-level administration and strategic policy support to make voluntary payments a viable instrument - with at best indirect use value rewards. For upscaling within the EU requires support from EU or national legislation and institutions, including support in terms of reliable organizations being allowed to run this kind of FES schemes.
There are often many beneficiaries of the public good type FES and their benefits may be significant. For that reason, one could consider voluntary payments from such beneficiaries to be a viable funding model to enhance FES provision. However, there is only a limited incentive for beneficiaries to pay, and a strong incentive to free ride. This was also the experience in SINCERE donation experiments. Thus, donation schemes for FES provision are in general not viable as a main strategy, but can only be a supplement.

Also, the payments are voluntary, and the temporal distance between the donation and the conservation action might be a disincentive as ensuring compliance/monitoring is difficult for the individual donor. However, it is expected that the potential donors will object if the implementation, i.e. the landscape features they have paid for, is not materializing over time.

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Payments/Benefits with ‘Administrative Pricing’

This income stream entails a payment coming from those who benefit from FES such as city water utilities or park users, who need to apply for permits.

The Catalonian case

Forests for water

This IA has two main objectives:

i) The inclusion of forest and forestry in a joint planning instrument for the Water reservoir of Rialb, and

ii) The creation of a Forest and Water Fund that relies on a PES mechanism.

The fund involves the creation of a local forest owner association that produces a forest adaptation and mitigation plan, where forest management that is beneficial for water, biodiversity and carbon is pursued. This IM works on strengthening governance for joint forest-water strategic planning and on finding new resources to support forest owners to provide water-related services.

The IA takes place in the Catalonian province of Lleida, in the area surrounding the water reservoir of the Rialb valley. The reservoir is placed in the watershed of the Segre River and surrounded by six municipalities with a forest area share of 88%. The region’s forests are primarily owned by private owners (about 80%). In the case area around the Rialb reservoir there are approximately 1,000 forest owners who on average own a forest of 8.2 ha in size.
The Catalonian case

**Forests for water**

Forest management is rather low and only 36% of private forest land is under a forest management plan. The forests have in general low profitability due to low productivity, complex topography and inaccessibility. This, combined with a general rural population exodus, has led to land abandonment, where former fields naturally are evolving to new forests. The unmanaged forest growth increases the risks of large forest fires, diseases or mortality during drought episodes that negatively affect FES provision, particularly the quantity and quality of water but also biodiversity and climate regulation.

This is the most complex externality situation from cell D, Table 1 (Goods according to degree of subtractability and exclusion, in the chapter). Understanding the market failures addressed by the Innovative Mechanisms where exclusion rights are fundamentally inhibited by a spatial divide between provision and use of a service.

The creation of a forest owner association eases the participation of small forest owners by reducing individual transaction costs. The association is also responsible for creating the adaption and mitigation forestry plan that describes the management that will increase resistance and resilience. The IA has scheduled forest management action to be implemented within the next three years on 20 hectares of forestland.

The targeted buyers of the FES are mainly water utility providers (hydroelectric companies, water provision utilities), but also companies interested in corporate social responsibility.
The Catalanian case

Is there a potential for upscaling the case?

**National geographical upscaling**

The demand for better water quality and higher water quantity yields and the lack of forest management is not a problem unique to the case area, so there is upscaling potential in similar cases in Spain or at a federal or national level, which is also evident from the Basque case.

**Upscaling to other schemes**

The instrument can be applied in other schemes where similar clearly defined relations between ‘upstream suppliers of actions’ and ‘downstream’ beneficiaries exist. It is dependent on documenting a relationship between management and provision.

**Upscaling in scope**

The IM has already demonstrated its upscaling potential, since it already expanded the scope from not just water provision but also potential use for carbon credits and biodiversity conservation.

**Upscaling to other countries**

The IM has demonstrated its upscaling potential, especially in developing countries where it presents an effective way to obtain sustainable financing for ecosystem services provision.
Innovative Mechanisms in Payments for Ecosystem Services

Unlike the case of on-site user fees, there may also be viable models for enhanced FES-provision against payments from beneficiaries using the service potentially far away from the forest. This may be downstream water users or residents benefitting from reduced flooding or avalanche risks. In such cases, the forest owner cannot deny these users their benefits entirely, but the forest owner may, through forest management, affect e.g. water quality or risk of flooding. If the provision of these FES is not taken into account in forest management, society overall loose out. In such cases, SINCERE experience and other examples show that viable models for enhanced FES provision against a payment from beneficiaries can work in practice. To reduce transactions costs and coerce payments among downstream users, suitable institutions may collect payments from beneficiaries.

The lessons learned in relation to the carefully designed instruments and implementation of the stakeholder involvements might be a key element for successful upscaling of similar PES schemes to other case areas and wider federal or national level.

The Catalanian case

Is there a potential for upscaling the case?

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The lessons learned in relation to the carefully designed instruments and implementation of the stakeholder involvements might be a key element for successful upscaling of similar PES schemes to other case areas and wider federal or national level.
Remark on regulatory change

All the above examples of viable models for improving societal gains from FES provision took as basis the existing regulation in any given context. However, it may be that for some FES the current regulations, e.g. property or use right distribution, is a barrier for the most valuable provision of FES to society. In such cases, changes to regulation may be the easiest and most transparent way of improving FES provision – whether by redistributing property and use rights or by allowing more room for market-based solutions.

Conclusion on IA’s implementation

Among the learning points identified, many are related to the introduction of a FES approach in forest governance, management or policy, especially in countries or regions where this approach had not yet been integrated. This approach seems to be timely relevant, in contexts that require a change, and a collaboration between policy and science is needed to make it most beneficial.

The novelty of the FES approach and the principle of ‘paying for the provision of FES’ has also proven to be a challenge. Introducing these ideas and convincing stakeholders to participate had sometimes required long processes of communication.

No ‘one-fits-all’ solution exists. A local focus is important. Successful schemes have to come from an adaptation to the diversity of local perspectives, a consideration of stakeholders’ interests and needs, and a participative assessment of the institutional constraints and possibilities. Some IA’s faced difficulties to collect payments/funding, and difficulties in securing funding in the mid- to long-term. The focus on and success of local participative processes has been confirmed as a key aspect in these IA’s development.

Compatibility with the local institutional context is of course necessary for successful implementation. However, sustainability transition implies going beyond business-as-usual, and it is crucial to find a balance between conforming to the current institutional context and challenging the institutional and policy shortcomings, gaps or incoherence at the regional, national or EU-level.
Further information sources and tools

**SINCERE Resources and Toolkit**

**SINCERE resources: Engaging business**

**Forest Products Sector Guide**

This guide assists businesses in the forest products sector to assess how they depend on, and impact, ecosystem services and natural capital so that they can identify business benefits and risks.

*Organisation: Natural Capital Coalition*

**The business case for natural infrastructure**

This report describes the business case for companies to invest in natural infrastructure, including forest management and restoration. It outlines drivers for businesses to invest in natural infrastructure, as well as its potential applications for business.

*Organisation: WBCSD*

**Integrating business skills into ecotourism operations**

This report provides guidance and recommendations for running successful ecotourism businesses. It addresses topics such as understanding the market, developing a sustainable business plan, running sustainable operations, and carrying out successful marketing.

*Organisation: IUCN and Kuoni*
Sustainable tourism and natural World Heritage: priorities for action

Recommendations on effective tourism planning around protected areas, governance of tourism, participation and collaboration, and communication.

Organisation: IUCN

Wood-based entrepreneurs’ toolkit: Communicating effectively with your customers

A toolkit with guidance on communications and marketing for wood-based small companies. It includes advice on messaging, communication channels and communication planning.

Organisation: Oregon State University

Measured development: Options to distinguish and measure the impacts of business models of forest and farm producers

A framework to assess the contribution of different business models in forestry to sustainable development. It proposes metrics for businesses to manage performance and define their impacts for communication to consumers, creditors and state authorities.

Organisation: FAO
Innovative Mechanisms in Payments for Ecosystem Services

Forest Logbook

This website provides an overview of legal information for the forestry sector, including links to legislation, contact details for government authorities and legal briefings. It provides information on issues related to forest governance and trade issues.

Organisation: Client Earth
The identified common challenges can be organized into eight challenge categories. Below we go through each of the challenge categories presenting their relevance and key questions they connect to, propositions on ways to overcome them and examples from IAs illustrating the challenges – the way these were presented as feedback to the IAs’ partners during the Co-Design Event.

**Challenge 1** Finding the optimal socio-ecological scale of analysis, planning and action

**Key question:** ‘How to integrate the IM in a broader territorial vision and sustainability goal?’ Reflecting on the socio-ecological scale of analysis, planning and action is important for addressing this question and for effectively anticipating and monitoring the IA’s impact in terms of social equity, ecology and geography.

**Suggestions**

- Take into account both direct and indirect impacts of the IM on diverse actors (e.g., locals versus tourists, individual users versus companies with profitable business, small versus large forest owners, etc.) in order to anticipate unequal or unfair balance of impact/ costs - benefits and potential tensions or conflicts.

- Investigate and think in terms of bundles of ES and trade-offs with ES other than the focal ES.

- Take into account the impact of the IM on broader societal controversies, and vice versa, impacts of other land planning initiatives on the IM, in order to anticipate challenges and tensions on a larger scale than the local context of the pilot project.

**Examples:** In the Danish case, there could be an indirect impact on local wood industry actors if the IM provokes a radical decrease in wood harvesting that should be considered. The Finland IA should engage with the controversies related to fauna disturbance and negative impact of public access on biodiversity.
Challenge 2: Identifying the relationship between management and ecosystem services

**Key question:** ‘What is the real change of the management and the resulting change in ecosystem services? What is the relation between the suggested management and ecosystem service? Is the relationship documented? Can it be quantified?’

**Suggestions**

- Clearly describe the change in management and the expected changes in ecosystem services
- Address the needs for broad ecosystem services valuation integrating biophysical, economic and socio-cultural values, and for an ecological diagnostic of the identified main issues that the IA will address

- Strengthen the collaboration with the scientific partner, ask for support from thematic expert in the IA organization or institutional environment, look for rich ES data environment, other similar initiatives

**Examples:** IAs have been encouraged to study the specific links between management measures and their impact on ecosystem services (Spain/Catalonia), or between biodiversity (Denmark) or landscapes (Finland) and ES at the local scale. Others received suggestions about studying the legal implications and obstacles, induced change of rights and property status (especially for reverse auction cases, Denmark), or social aspects such as social preferences in order to democratically set priorities and assess demand for ecosystem services.
Challenge 3  
Meeting the goal of participation and reach out across societal sectors when time and motivation are limited

**Key question:** ‘How to secure continued participation and inclusion of all relevant stakeholders, ensure their necessary support and keep motivation high?’

**Suggestions**

- Plan in advance and set dates in a consensual manner (i.e., MAG meetings)
- Keep the participatory processes democratic, consider all voices’ needs and by doing so avoid disengagement
- Put specific emphasis on engaging those stakeholders that are critical for the success of the IM (in many cases from a different policy sector)
- Anticipate diverging stakeholder interests and ways of thinking, and work bridges between potential conflicts between objectives or interests between different key stakeholders (i.e., frictions between research and action objectives).

**Examples:** These suggestions should be relevant for many IAs as many of them expressed dealing with this challenge. For instance, in the words of the IA partners from Finland: “some stakeholders cannot attend full days meeting'. However, for the context of a case-study in SINCERE, it would be good to invite them, as this is what is in accordance to the procedures of SINCERE project'
Challenge 4: Consider economic transactions and economic potential

**Key question:** ‘Ensuring the potential economic aspects of the IM with regard to transactions, donations, costs of changed management, etc.’

**Suggestions**

- Consider cost of management change and who will pay for implementation
- Public good effects – who benefits from management change
- Describe any generated flows of money (cash).
- Consider and describe Upscaling potentials
- Work with science partners – Donations/voluntary payments, see e.g., List & Lucking-Reily (2002), or Karlan et al (2007), CSR

**Examples:** The IAs have been encouraged to further reflect on the economic aspects involved and to identify clearly the stakeholders and the parties in the foreseen transactions.
**Challenge 5**  
Coping with time and resources constraints

**Key question:** ‘How to design and successfully implement the desired IM in a context of limited time and resources?’

**Suggestions**

- Lean on existing initiatives and try to match them with the goals and resources for your IM
- Seize opportunities to work in local contexts where there are already local governance schemes well-functioning. This might enhance the success potential and sustainability over time if properly integrated.
- Design a roadmap to implementation

**Examples:** The Spanish/Catalonia IA would profit from strategic planning through the ongoing process for the development of the urbanistic director plan. For Finland, it is suggested to find inspiration or lean on existing initiatives in the area: very local land use agreements already done between private owners and nature tourism enterprises.
Challenge 6  Securing additionality aspects

**Key question:** ‘Ensuring the additionality aspects of the IM: the IM has to ensure an improvement beyond current practices and context and cannot enable continuation of “business-as-usual”’

**Suggestions**

- Consider if there are any additionality by looking at whether the IM will impact scale or security for provision, etc.
- If not, consider how focus can be changed to ensure additionality.

Challenge 7  Facing frictions and mismatches with existing legislation, policies and subsidy systems

**Key question:** ‘How to design, develop and implement a new IM considering potential frictions with existing legislation, policies and other contextual issues?’

**Suggestions**

- Mapping of existing relevant legislation and how it influences the way the IM will operate (legislation defines scope for action)
- Identify further policies (e.g., subsidies) that impact the scope of the IM
- In the short term, think on innovative ways to bridge your IM with existing policies, projects and programs
- In the mid- and longer term, engage in improving the policy framework through respective feedback to policy makers

**Examples:** For Belgium/Flanders, it was suggested to explore how the IM could be implemented around areas with protection status. For Denmark, the potential interference with flat-rate subsidy mechanisms and other legislation was also suggested to be taken into account.
Challenge 8: Fostering societal inclusion and enhanced awareness

**Key question:** ‘How to guarantee the goal of societal inclusion and enhanced awareness as a pre-requisite and also as an expected outcome of the IM?’

**Suggestions**

- Participation, dialogue and open communication
- Sensitivity to context, local culture and plurality of values underlying ES, biodiversity and places in which IM are designed and implemented.
- Attention to and coherence with local history and culture related to the targeted ES, as a fundamental pre-requisite for sustainability and equity.

**Examples:** To address this challenge, and considering that the fact that nature is free in Finland is of high relevance, it was suggested that the Finland IA targets the actors who directly profit from the touristic use of landscapes and could be more willing to make a financial investment.