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Alpine Space

Forest EcoValue

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Carbon neutral and resource sensitive Alpine region

SO 2.2: Promoting the transition to a circular and resource efficient economy

Forest EcoValue:

Supporting multiple forest ecosystem services through new circular/green/bio markets and value chains

Project ID: ASP0100005



COLLECTION OF BEST PRACTICES FOR FOREST ECOSYSTEM SERVICES

Summary

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Introduction

The intention of this collection is to provide attractive, easy understandable information about good practices which could be offered to forest owners. "Best practices" refers to a broad set of actions, including policies, economic instruments, procedures, or behaviors that are considered effective and appropriate for achieving certain goals or standards.

This collection will highlight a selection of best practices through case studies that focus on FES markets and Payments for Ecosystem Services. The list aims to gather consistent and relevant examples from various contexts within the European Union. The case studies will not only highlight successful instances of FES markets and PES but also document good practices observed within these frameworks. The information gathered will serve a dual purpose: to showcase a selection of GP cases and to identify the key facilitating conditions that enable their successful application in different sites across the EU. This work will produce valuable insights into effective strategies for ecosystem service management and payment mechanisms to be shared and applied in diverse environmental contexts. This collection will be further integrated.

1. Reverse auction pilots for forest ecosystem services in rural and peri-urban areas

FACTS IN SHORT

This is a case study within the SINCERE project. It developed two models of reverse auction to stimulate the generation of forest ecosystem services in a densely populated region, Flanders. This innovative approach should lead to a more efficient use of the limited financial resources and support initiatives that are considered important to stakeholders and society.

Key words

Reverse auction;
Payment for FES;
Habitat restoration.

DESCRIPTION, GOALS & FUNDING

Detailed description of Good Practice

Forests in Flanders are scattered and mostly small, and generally low on biodiversity supporting structures. Habitat restoration targets improvements to increase biodiversity protection and biodiversity potential in the forests. Restoration is particularly focussed on improving habitat conditions for species that can be hunted, leading to potentially bigger population of specific game species, and functioning as an umbrella (improving habitats for other, rarer endangered species). Regulations and practices already exist, notably subsidies for environmentally-friendly practices in forestry. Recent legislation introduced an option to develop and implement land use management plans covering several types of land cover and multiple objectives targeting several ES. Management plans are developed between private owner and government agencies, and the regulatory setup includes a specifically adapted subsidy scheme. Forest owners are not obliged to have site-specific management plans, except for nature reserves and public-owned sites managed for nature conservation. The link between management planning and access to subsidies is important for this case study design.

Through the land use management plans and subsidy scheme, both forest owners and regulating agencies are familiar with regulation for ES in Belgium, and the presence of existing subsidies shows demand for ES is backed by some level of finance. It was possible to access a new source of funding to develop this innovative mechanism via the Jachtfonds established coincidentally with the start of SINCERE. This can be a long-term source of funding to meet societal demands for FES, if backed by the governing board of the fund.

Targeting all of Flanders, reverse auction was implemented as a discriminative price auction, where landowners were asked to describe the actions and improvements proposed for a pre-set amount (choice between 5,000€, 10,000€ or 15,000€). A positive incentive was created and additional enabling information was provided.

Enough bids were received to make final contracts (15) with landowners/managers for improvements in habitat quality. These bids did not require too much coordination and transaction costs were quite low. The instrument was similar to an auction-based version of existing flat rate schemes.

	15 contracts were signed to make land management changes. While there is no counterfactual information available to provide evidence of future additionality, restrictions imposed by the contracts suggest that additional gains and habitat quality to the benefit of biodiversity will result from the action		
Goals of the Good Practice	<ul style="list-style-type: none"> - Provide financial support to initiatives for habitat restoration that currently are not covered by existing subsidy system - Stimulate the creation of wild boar buffers in order to limit the negative impact of the species on forest biodiversity and on crop production 		
Financing / Funding description	Targeting all of Flanders, reverse auction was implemented as a discriminative price auction, where landowners were asked to describe the actions and improvements proposed for a pre-set amount (choice between 5,000€, 10,000€ or 15,000€). A positive incentive was created and additional enabling information was provided.		
TOPIC, ECOSYSTEM SERVICE & TYPE OF SOLUTION			
Key topic	ESS and natural capital based economy		
Forest Ecosystem Service mainly affected	Provisioning Services <input type="checkbox"/> Raw material provision <input checked="" type="checkbox"/> Food provision <input type="checkbox"/> Other	Regulating Services <input type="checkbox"/> Air quality <input type="checkbox"/> Groundwater quality <input type="checkbox"/> Surface Water quality <input type="checkbox"/> Natural hazard <input checked="" type="checkbox"/> Biodiversity habitat <input type="checkbox"/> CO ₂ storage and sequestration <input type="checkbox"/> Other	Cultural Services <input type="checkbox"/> Recreation <input type="checkbox"/> Health maintenance <input type="checkbox"/> Spirituality <input type="checkbox"/> Contemplation <input type="checkbox"/> Inspiration for Art <input type="checkbox"/> Other
Economic sector (NACE category)	Agriculture, forestry and fishing		
Type of solution	<input checked="" type="checkbox"/> Business model <input type="checkbox"/> Technical solution <input type="checkbox"/> Organisational solution <input type="checkbox"/> Management solution (farming, regional development) <input type="checkbox"/> Labeling solution (e.g. certificates) <input type="checkbox"/> Motivating solution (e.g. awards) <input type="checkbox"/> Other (please describe it here):		
TARGET GROUPS, POLICY & GOVERNANCE			
Target groups	<input type="checkbox"/> National public authority (TG 1 and 2) <input type="checkbox"/> Regional public authority (TG 3 and 4) <input checked="" type="checkbox"/> Local public authority (TG 5) <input type="checkbox"/> Enterprise, except SME (TG 6 and 7) <input type="checkbox"/> SMEs (TG 8 and 9) <input type="checkbox"/> Business support organization (TG 10) <input type="checkbox"/> Sectoral agency (TG 11)	<input type="checkbox"/> Interest groups including NGOs (TG 12-14) <input type="checkbox"/> General public (TG 13) <input type="checkbox"/> Financial/banking players (TG15) <input checked="" type="checkbox"/> Public and private forest owners (TG16) <input type="checkbox"/> Higher education and research organisations (TG 17) <input type="checkbox"/> International organisation, EEIG (TG 18 – 19)	

Policy fields mainly affected	<input checked="" type="checkbox"/> Forestry <input type="checkbox"/> Timber production <input checked="" type="checkbox"/> Nature Conservation <input type="checkbox"/> Bio-economy <input type="checkbox"/> Energy	<input type="checkbox"/> Climate protection / -mitigation <input type="checkbox"/> Water management <input type="checkbox"/> Tourism <input type="checkbox"/> Other
Governance actions	Public policy and strategies	
BENEFITS, TRANSFERABILITY & SCALABILITY		
Economic and/or social benefits	Economic/ecological benefits <ul style="list-style-type: none"> • compensation for land owners • nature conservation/habitat restoration 	Social benefits <ul style="list-style-type: none"> • More actors willing to engage in activities that contribute to forest protection management
Scalability	<p>The upscaling of a habitat reverse auction in Flanders shows potential for national expansion in Belgium, contingent on financing. Cost-effectiveness assessments compared to existing subsidies could be beneficial. For other schemes, if ecosystem services are homogeneous, the current pricing method is suitable; otherwise, a discriminatory pricing model may be needed. The auction's straightforward coordination could extend to related environmental schemes in Belgium and beyond, though variations may be necessary. Across the EU, upscaling depends on national regulations and ecological contexts. Optimal conditions are where forest management is flexible and private ownership of valuable forestland is significant</p>	
SUCCESS FACTORS AND BARRIERS		
Success factors	<ul style="list-style-type: none"> • Strong partnership • Community engagement 	
Obstacles	<ul style="list-style-type: none"> • no legal framework that takes into account the format of reverse auction as a subsidy scheme • Different points of view between relevant actors regarding land-use and priorities • Constant need to mitigate the risk of interfering with other existing subsidy systems 	
CONTACT DATA		
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Address		
Name of the institution	Natuurinvest	
Type of institution	<input type="checkbox"/> Private enterprise	

	<input type="checkbox"/> Public administration <input type="checkbox"/> Non Governmental Organisation <input type="checkbox"/> Association <input checked="" type="checkbox"/> Other
Brief description of institution (optional)	<p>On behalf of the Agency for Nature and Forests, Natuurinvest invests in projects that enhance the experience of nature. In this way, Natuurinvest ensures that people can fully enjoy our nature. It does so together with private entrepreneurs and government partners.</p> <p>For the optimal management of forests, nature and green spaces in Flanders, Natuurinvest also invests in programs that increase people's knowledge.</p>
Street	Herman Teirlinckgebouw Havenlaan 88 bus 75
ZIP-code	B-1000
City	Brussel
Country	Belgium
Website of the project	https://sincereforests.eu/ https://sincereforests.eu/wp-content/uploads/2019/12/Flanders_factsheet_SINCERE.pdf

2. METSO - forest biodiversity programme for southern Finland

FACTS IN SHORT

The METSO project is a Finnish government project for the protection and conservation of forests based on the voluntary participation of forest owners in exchange for financial compensation based on opportunity cost (lost timber income).

Key words

Voluntary-based conservation;
 Financial compensation;
 Nature management;

DESCRIPTION, GOALS & FUNDING

Detailed description of Good Practice

Forest owners can voluntarily offer their forest sites for protection in the METSO Programme. The programme can be implemented using three methods:

- 1. Permanent protection** (Private nature reserves or Selling the land to the State for conservation purposes).
- 2. Temporary conservation** (Environmental forestry subsidy agreement - 10 years - or temporary nature reserve - 20 years).
- 3. Nature management projects** (focused on restoring and preserving valuable habitats in private forests).

The site selection criteria define which habitats are accepted for conservation. The criteria are based on scientific knowledge of forest habitat types and the structural features of forests that are important for biodiversity. In addition, each main forest habitat type has its own criteria. Especially favoured are the sites where habitats are in their natural state or close to it, can easily be restored, host rare or endangered species, or sites that are important for ecological connectivity. Decaying wood, burnt or charred wood, mature broad-leaved trees, large aspen trees, nutrient-rich soils, springs, brooks, or other natural water features are the structural elements that increase the ecological value of the site. Recreation, tourism, and cultural and landscape values may also increase the site's significance if they support biodiversity conservation.

Forest and environmental authorities assess the suitability of the offered sites based on ecological criteria.

Goals of the Good Practice

Main goal: prevent the decline of woodland habitats and forest species. It specifically refers to halting the ongoing decline in the biodiversity of forest habitats and species and ensuring that a favorable trend in forest biodiversity is established by 2025.

Financing / Funding description

Forest owners get full financial compensation equivalent to the value of timber at the protected site (opportunity cost). If the forest owner chooses to sell the property to the state for permanent protection, the value of the land will also be compensated. With permanent protection the private forest owner's compensation is tax-free. The nature management projects come at no cost to the forest owner. Additionally, protected and managed sites can be used for nature-based tourism and recreation.

TOPIC, ECOSYSTEM SERVICE & TYPE OF SOLUTION

Key topic	ESS and natural capital-based economy		
Forest Ecosystem Service mainly affected	Provisioning Services <input type="checkbox"/> Raw material provision <input type="checkbox"/> Food provision <input type="checkbox"/> Other	Regulating Services <input type="checkbox"/> Air quality <input type="checkbox"/> Groundwater quality <input type="checkbox"/> Surface Water quality <input type="checkbox"/> Natural hazard <input checked="" type="checkbox"/> Biodiversity habitat <input type="checkbox"/> CO ₂ storage and sequestration <input type="checkbox"/> Other	Cultural Services <input checked="" type="checkbox"/> Recreation <input type="checkbox"/> Health maintenance <input type="checkbox"/> Spirituality <input type="checkbox"/> Contemplation <input type="checkbox"/> Inspiration for Art <input type="checkbox"/> Other
Economic sector (NACE category)	Agriculture, forestry and fishing		
Type of solution	<input checked="" type="checkbox"/> Business model <input type="checkbox"/> Technical solution <input type="checkbox"/> Organisational solution <input checked="" type="checkbox"/> Management solution (farming, regional development) <input type="checkbox"/> Labeling solution (e.g. certificates) <input type="checkbox"/> Motivating solution (e.g. awards) <input type="checkbox"/> Other (please describe it here):		
TARGET GROUPS, POLICY & GOVERNANCE			
Target groups	<input checked="" type="checkbox"/> National public authority (TG 1 and 2) <input type="checkbox"/> Regional public authority (TG 3 and 4) <input type="checkbox"/> Local public authority (TG 5) <input type="checkbox"/> Enterprise, except SME (TG 6 and 7) <input type="checkbox"/> SMEs (TG 8 and 9) <input type="checkbox"/> Business support organization (TG 10) <input type="checkbox"/> Sectoral agency (TG 11)	<input checked="" type="checkbox"/> Interest groups including NGOs (TG 12-14) <input type="checkbox"/> General public (TG 13) <input type="checkbox"/> Financial/banking players (TG15) <input checked="" type="checkbox"/> Public and private forest owners (TG16) <input type="checkbox"/> Higher education and research organisations (TG 17) <input type="checkbox"/> International organisation, EEIG (TG 18 – 19)	
Policy fields mainly affected	<input checked="" type="checkbox"/> Forestry <input checked="" type="checkbox"/> Timber production <input checked="" type="checkbox"/> Nature Conservation <input type="checkbox"/> Bio-economy <input type="checkbox"/> Energy	<input type="checkbox"/> Climate protection / -mitigation <input type="checkbox"/> Water management <input type="checkbox"/> Tourism <input type="checkbox"/> Other	
Governance actions	Public policy and strategies		
BENEFITS, TRANSFERABILITY & SCALABILITY			
Economic and/or social benefits	Economic and ecological benefits <ul style="list-style-type: none"> forest conservation, species and nature protection 	Social benefits <ul style="list-style-type: none"> new income for local communities; 	

		<ul style="list-style-type: none"> new job opportunities (tourism and recreation)
Scalability	The project is on a regional scale, but the same scheme is applicable to the entire state with due consideration.	
SUCCESSFACTORS AND BARRIERS		
Success factors	<ul style="list-style-type: none"> Voluntary based approach Independence in decision making Retention of property rights Tax free Established network and collaboration 	
Obstacles	<ul style="list-style-type: none"> High costs 	
CONTACT DATA		
Name	Esa Pynnönen	
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Address		
Name of the institution	Ministry of the Environment	
Type of institution	<input type="checkbox"/> Private enterprise <input checked="" type="checkbox"/> Public administration <input type="checkbox"/> Non Governmental Organisation <input type="checkbox"/> Association <input type="checkbox"/> Other	
Brief description of institution (optional)	<p>The Ministry of environment comprises four departments and one support function of the Ministry of the Environment (Natural Environment Department, Built Environment Department, Climate and Environmental Protection Department and Ministerial Governance and International Affairs Department, and Communications) that are responsible for legislative and policy preparation for the Government and Parliament concerning communities, climate issues, built environment, housing, biodiversity and sustainable use of natural resources, and environmental protection.</p>	
Street	Aleksanterinkatu 7,	
ZIP-code	FI-00023	
City	Helsinki	
Country	Finland	
Website of the project	https://metsonpolku.fi/en/frontpage	

3. Creation of value from waste: trash to cash – VAIA Wood case study

FACTS IN SHORT			
Through activities aimed at reusing, repurposing and upcycling, Vaia Wood transforms waste and unused items (like production scraps) into valuable commodities that can generate revenue, contributing to more sustainable production system.			
Key words	Circular economy; upcycling		
DESCRIPTION, GOALS & FUNDING			
Detailed description of Good Practice	<p>This case study is based on the so called “trash to cash” business model: a company uses waste and scraps left in the forest or coming from timber production to produce artisanal furniture and small wooden objects of different kinds, employing local artisans. The material used for the production might present flows and a lower quality, but it is also cheaper than the virgin wood - which helps lowering production costs. The same model can be applied also in case of a forest hit by a storm, a pest or a natural disaster that fell a considerable number of trees.</p> <p>Products are sold in shops or online, also in cooperation with natural parks and forest owners. Access to public funding for small enterprises with circular and sustainable productions can constitute a relevant funding source. Revenues can be re-invested in forest management, reforestation, and fire, pest or hydro-geological risk mitigation activities.</p> <p>Vaia Wood produces wooden objects from timber scraps, from the trees that fell during the devastating "Vaia" storm, which caused the fall of 42 million trees in Prealpi Venete and Dolomiti (Italy), reinvesting their profits in local reforestation activities (>30.000 trees planted) and dissemination communication on environmental and social issues.</p>		
Goals of the Good Practice	Sustainable forest management enhancing the local economy		
Financing / Funding description	Sale of the upcycled products Public funding		
TOPIC, ECOSYSTEM SERVICE & TYPE OF SOLUTION			
Key topic	Resource efficient economy		
Forest Ecosystem Service mainly affected	Provisioning Services <input checked="" type="checkbox"/> Raw material provision <input type="checkbox"/> Food provision <input type="checkbox"/> Other	Regulating Services <input type="checkbox"/> Air quality <input type="checkbox"/> Groundwater quality <input type="checkbox"/> Surface Water quality <input type="checkbox"/> Natural hazard	Cultural Services <input type="checkbox"/> Recreation <input type="checkbox"/> Health maintenance <input type="checkbox"/> Spirituality <input type="checkbox"/> Contemplation

	<input type="checkbox"/> Biodiversity habitat <input type="checkbox"/> CO ₂ storage and sequestration <input type="checkbox"/> Other	<input type="checkbox"/> Inspiration for Art <input type="checkbox"/> Other
Economic sector (NACE category)	Agriculture, forestry and fishing	
Type of solution	<input checked="" type="checkbox"/> Business model <input type="checkbox"/> Technical solution <input type="checkbox"/> Organisational solution <input type="checkbox"/> Management solution (farming, regional development) <input type="checkbox"/> Labeling solution (e.g. certificates) <input type="checkbox"/> Motivating solution (e.g. awards) <input type="checkbox"/> Other (please describe it here):	
TARGET GROUPS, POLICY & GOVERNANCE		
Target groups	<input type="checkbox"/> National public authority (TG 1 and 2) <input type="checkbox"/> Regional public authority (TG 3 and 4) <input type="checkbox"/> Local public authority (TG 5) <input type="checkbox"/> Enterprise, except SME (TG 6 and 7) <input checked="" type="checkbox"/> SMEs (TG 8 and 9) <input type="checkbox"/> Business support organization (TG 10) <input type="checkbox"/> Sectoral agency (TG 11)	<input type="checkbox"/> Interest groups including NGOs (TG 12-14) <input type="checkbox"/> General public (TG 13) <input type="checkbox"/> Financial/banking players (TG15) <input checked="" type="checkbox"/> Public and private forest owners (TG16) <input type="checkbox"/> Higher education and research organisations (TG 17) <input type="checkbox"/> International organisation, EEIG (TG 18 – 19)
Policy fields mainly affected	<input type="checkbox"/> Forestry <input checked="" type="checkbox"/> Timber production <input type="checkbox"/> Nature Conservation <input type="checkbox"/> Bio-economy <input type="checkbox"/> Energy	<input type="checkbox"/> Climate protection / -mitigation <input type="checkbox"/> Water management <input type="checkbox"/> Tourism <input type="checkbox"/> Other
Governance actions	Public policy and strategies	
BENEFITS, TRANSFERABILITY & SCALABILITY		
Economic and/or social benefits	Economic/ecological benefits <ul style="list-style-type: none"> • lower production costs • Decrease resource (timber) consumption, lowering waste and emissions. Benefits for the forest itself if revenues are re-invested in forest management. • Reforestation activities produce a general increase in the ecosystem quality and quantity of FES. 	Social benefits <ul style="list-style-type: none"> • Job creation for local artisans • Community engagement
Scalability	This scheme applies to regional/local contexts. On a larger scale, benefits for local workers may be lost.	

SUCCESSFACTORS AND BARRIERS	
Success factors	<ul style="list-style-type: none"> • Low-cost raw material from production scraps, waste and fallen trees
Obstacles	<ul style="list-style-type: none"> • Alternative activities that already have a supply chain based on scrap and waste.
CONTACT DATA	
Name	Federico Stefani
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Address	
Name of the institution	Vaia Wood Srl
Type of institution	<input checked="" type="checkbox"/> Private enterprise <input type="checkbox"/> Public administration <input type="checkbox"/> Non Governmental Organisation <input type="checkbox"/> Association <input type="checkbox"/> Other
Brief description of institution (optional)	Young start-up that was born in the aftermath of Storm Vaia from the idea of three friends.
Street	Via Puisle, 23
ZIP-code	38051
City	Borgo Valsugana (Trento)
Country	Italy
Website of the project	https://www.vaiawood.eu

4. Oasi Zegna

FACTS IN SHORT			
<p>Oasi Zegna is a private protected area created by an Italian entrepreneur. It works to preserve the forest for the whole community through sustainable management and reforestation activities. It offers free and fee-based services to finance costs.</p>			
Key words	Recreation, tourism Sustainable forest management		
DESCRIPTION, GOALS & FUNDING			
Detailed description of Good Practice	<p>Oasi Zegna born in the '30s when Ermenegildo Zegna, the textile industrialist, launched a big patronage program of environmental reclamation around Trivero (Biella, Italy), where the Ermenegildo Zegna wool mill is still operating. The current Oasi Zegna, a freely accessible nature park covering around 100 km² between Trivero and Valle Cervo in the Biella Alps, in Piemonte, was created in 1993 as a natural development of Ermenegildo Zegna's "green thought".</p> <p>The oasis is part of the FAI (Italian National Fund for Environment) and makes it possible to preserve and widen a large area of forest through various tourist, cultural and recreational activities that contribute to the funding of the Project. In the oasis it is possible to do forest bathing, horseback riding, Nordic walking, biking, and trekking. It is possible to visit the forest for free, or book guided tours for a fee. The Zegna oasis also organizes services for companies, for a fee, thanks to a team that provides corporate team building sessions in the forest (outdoor sports, mindfulness) and can host conferences and workshops</p>		
Goals of the Good Practice	Sustainable forest management enhancing the local economy Preserving the biodiversity		
Financing / Funding description	Guided tours for a fee Team building and corporate welfare services		
TOPIC, ECOSYSTEM SERVICE & TYPE OF SOLUTION			
Key topic	ESS and natural capital based economy		
Forest Ecosystem Service mainly affected	Provisioning Services <input type="checkbox"/> Raw material provision <input type="checkbox"/> Food provision <input type="checkbox"/> Other	Regulating Services <input type="checkbox"/> Air quality <input type="checkbox"/> Groundwater quality <input type="checkbox"/> Surface Water quality <input type="checkbox"/> Natural hazard <input checked="" type="checkbox"/> Biodiversity habitat <input type="checkbox"/> CO ₂ storage and sequestration <input type="checkbox"/> Other	Cultural Services <input checked="" type="checkbox"/> Recreation <input type="checkbox"/> Health maintenance <input checked="" type="checkbox"/> Spirituality <input type="checkbox"/> Contemplation <input type="checkbox"/> Inspiration for Art <input checked="" type="checkbox"/> Other

Economic sector (NACE category)	Agriculture, forestry and fishing	
Type of solution	<input checked="" type="checkbox"/> Business model <input type="checkbox"/> Technical solution <input type="checkbox"/> Organisational solution <input type="checkbox"/> Management solution (farming, regional development) <input checked="" type="checkbox"/> Labeling solution (e.g. certificates) <input type="checkbox"/> Motivating solution (e.g. awards) <input type="checkbox"/> Other (please describe it here):	
TARGET GROUPS, POLICY & GOVERNANCE		
Target groups	<input type="checkbox"/> National public authority (TG 1 and 2) <input type="checkbox"/> Regional public authority (TG 3 and 4) <input type="checkbox"/> Local public authority (TG 5) <input checked="" type="checkbox"/> Enterprise, except SME (TG 6 and 7) <input checked="" type="checkbox"/> SMEs (TG 8 and 9) <input type="checkbox"/> Business support organization (TG 10) <input type="checkbox"/> Sectoral agency (TG 11)	<input type="checkbox"/> Interest groups including NGOs (TG 12-14) <input checked="" type="checkbox"/> General public (TG 13) <input type="checkbox"/> Financial/banking players (TG15) <input type="checkbox"/> Public and private forest owners (TG16) <input type="checkbox"/> Higher education and research organisations (TG 17) <input type="checkbox"/> International organisation, EEIG (TG 18 – 19)
Policy fields mainly affected	<input checked="" type="checkbox"/> Forestry <input type="checkbox"/> Timber production <input checked="" type="checkbox"/> Nature Conservation <input checked="" type="checkbox"/> Bio-economy <input type="checkbox"/> Energy	<input type="checkbox"/> Climate protection / -mitigation <input type="checkbox"/> Water management <input checked="" type="checkbox"/> Tourism <input type="checkbox"/> Other
Governance actions	Public policy and strategies	
BENEFITS, TRANSFERABILITY & SCALABILITY		
Economic and/or social benefits	Economic/ecological benefits <ul style="list-style-type: none"> • economic sustainability of the project • sustainable forest and biodiversity management 	Social benefits <ul style="list-style-type: none"> • Community engagement • Mental well-being support
Transferability	The project is adaptable to any forest type	
Scalability	This scheme applies to regional/local contexts. It is difficult to apply to a larger scale.	
SUCCESSFACTORS AND BARRIERS		
Success factors	<ul style="list-style-type: none"> • presence of an "enlightened" entrepreneur • Cohesion of local entities 	
Obstacles		

CONTACT DATA	
Name	
Telephone Nr.	+39 340 1989593
E-mail	info@oasizegna.com
Address	
Name of the institution	Oasi Zegna
Type of institution	<input type="checkbox"/> Private enterprise <input type="checkbox"/> Public administration <input type="checkbox"/> Non Governmental Organisation <input type="checkbox"/> Association <input checked="" type="checkbox"/> Other
Brief description of institution (optional)	Oasi Zegna born in the '30s when Ermenegildo Zegna, the textile industrialist, launched a big patronage program of environmental reclamation around Trivero (Biella, Italy), where the Ermenegildo Zegna wool mill is still operating. Oasi Zegna, a freely accessible nature park covering around 100 km ² between Trivero and Valle Cervo in the Biella Alps, in Piemonte, was created in 1993 as a natural development of Ermenegildo Zegna's "green thought".
Street	https://www.google.com/maps?ll=45.669837,8.15726&z=15&t=h&hl=en-US&gl=US&mapclient=embed&cid=9866193016805827311
ZIP-code	
City	Biella
Country	Italy
Website of the project	https://www.oasizegna.com/it/

5. Grounwater protection in Copenhagen

FACTS IN SHORT

The project aims to clean up groundwaters that supply Copenhagen through afforestation measures and the designation of well-head protection zones with no pesticides.

Keywords

Groundwater quality
 Land use
 Sustainable forest management
 PES

DESCRIPTION, GOALS & FUNDING

Detailed description of Good Practice

The main environmental problem related to groundwater resources in Denmark is the threat of groundwater pollution stemming from pesticides and fertilizers used in agriculture. In the last years, this has led to a situation where two well fields used for water supply had to decrease their levels of groundwater abstraction.

One of them is the Solhøj well field where the normal abstraction of about 5 million m³ per year had to be reduced to only 3 million m³.

Forest-groundwater PES scheme has been developed to combat the further pollution of important groundwater bodies. It aims to have two main effects:

- land-use change from agriculture to forests through afforestation of mainly broadleaf species, and
- in existing forest areas, restrictions on the use of fertilizers or pesticides, and in some cases also underplanting of conifer stands with broadleaf tree species, as the latter increase groundwater recharge.

Copenhagen Energy Corporation delivers drinking water to around one million consumers in and around the municipality of Copenhagen. During the last twenty years Copenhagen Energy has lost about 14 million m³ of groundwater per year. One of the largest groundwater bodies used by Copenhagen Energy is the Vigersted well field from which also ca. 5 million m³ per year are abstracted. This is equal to the consumption of 100.000 Copenhageners per year. It has therefore been very important for Copenhagen Energy to protect this groundwater body through afforestation measures and the designation of wellhead protection zones where no pesticides are used. Just next to the Vigersted well field used by Copenhagen Energy a privately owned forest is located. In order to secure the quality of the groundwater resources found in this area, an agreement has been made between Copenhagen Energy and the owner of the forest. Through this voluntary agreement, the private forest owner is now obliged to set aside 95 hectares of his forest where in the future no pesticides may be used. In addition, Copenhagen Energy was able to buy 530 hectares of farm land on which broadleaf trees were planted.

Afforestation activities were implemented and managed by the state and local municipalities. The time frame of these agreements is 30 years, since groundwater abstraction licenses usually run for the same period. As the licenses can be extended, the financial agreements can also be extended. In general, a periodical review of the contracts is carried out every 5 years.

Sellers or service providers:

	<ul style="list-style-type: none"> • Private forest owner who eliminates pesticides in his forest; • Private farmers who sell their land so that it can be afforested. <p>Buyers and beneficiaries of services:</p> <ul style="list-style-type: none"> • Private persons, namely the customers of Copenhagen Energy, who consume the supplied water, and are the ones who contribute to Copenhagen Energy's fund 		
Goals of the Good Practice	Protection of groundwater quality and quantity		
Financing / Funding description	Direct payment: private owners are compensated by Copenhagen Energy Corporation to change forest management practices		
TOPIC, ECOSYSTEM SERVICE & TYPE OF SOLUTION			
Key topic	ESS and natural capital-based economy		
Forest Ecosystem Service mainly affected	Provisioning Services <input type="checkbox"/> Raw material provision <input type="checkbox"/> Food provision <input type="checkbox"/> Other	Regulating Services <input type="checkbox"/> Air quality <input checked="" type="checkbox"/> Groundwater quality <input type="checkbox"/> Surface Water quality <input type="checkbox"/> Natural hazard <input type="checkbox"/> Biodiversity habitat <input type="checkbox"/> CO ₂ storage and sequestration <input type="checkbox"/> Other	Cultural Services <input type="checkbox"/> Recreation <input type="checkbox"/> Health maintenance <input type="checkbox"/> Spirituality <input type="checkbox"/> Contemplation <input type="checkbox"/> Inspiration for Art <input type="checkbox"/> Other
Economic sector (NACE category)	Agriculture, forestry and fishing		
Type of solution	<input type="checkbox"/> Business model <input type="checkbox"/> Technical solution <input type="checkbox"/> Organisational solution <input type="checkbox"/> Management solution (farming, regional development) <input type="checkbox"/> Labeling solution (e.g. certificates) <input type="checkbox"/> Motivating solution (e.g. awards) <input checked="" type="checkbox"/> Other (please describe it here): PES		
TARGET GROUPS, POLICY & GOVERNANCE			
Target groups	<input type="checkbox"/> National public authority (TG 1 and 2) <input type="checkbox"/> Regional public authority (TG 3 and 4) <input type="checkbox"/> Local public authority (TG 5) <input type="checkbox"/> Enterprise, except SME (TG 6 and 7) <input type="checkbox"/> SMEs (TG 8 and 9) <input type="checkbox"/> Business support organization (TG 10) <input checked="" type="checkbox"/> Sectoral agency (TG 11)	<input type="checkbox"/> Interest groups including NGOs (TG 12-14) <input checked="" type="checkbox"/> General public (TG 13) <input type="checkbox"/> Financial/banking players (TG15) <input checked="" type="checkbox"/> Public and private forest owners (TG16) <input type="checkbox"/> Higher education and research organisations (TG 17) <input type="checkbox"/> International organisation, EEIG (TG 18 – 19)	

Policy fields mainly affected	<input checked="" type="checkbox"/> Forestry <input type="checkbox"/> Timber production <input checked="" type="checkbox"/> Nature Conservation <input type="checkbox"/> Bio-economy <input type="checkbox"/> Energy	<input type="checkbox"/> Climate protection / -mitigation <input checked="" type="checkbox"/> Water management <input type="checkbox"/> Tourism <input type="checkbox"/> Other
Governance actions	Public policy and strategies	
BENEFITS, TRANSFERABILITY & SCALABILITY		
Economic and/or social benefits	Economic/ecological benefits <ul style="list-style-type: none"> • elimination in the use of pesticides • wider forested area • improvement in groundwater quality • payment for landowners 	Social benefits <ul style="list-style-type: none"> • water availability
Transferability	The project is highly adaptable to similar contexts	
SUCCESS FACTORS AND BARRIERS		
Obstacles	<ul style="list-style-type: none"> • Opportunity cost of converting agricultural land to forest land 	



Gefördert durch:



Bundesministerium
für Umwelt, Naturschutz, nukleare Sicherheit
und Verbraucherschutz

aufgrund eines Beschlusses
des Deutschen Bundestages