

INVENTORY OF POLICIES ADDRESSING BARRIERS AND INCENTIVIZING FES MARKETS

D.3.1.1

RESPONSIBILE PARTNER: SLOVENIA FOREST SERVICE
(ZAVOD ZA GOZDOVE SLOVENIJE)/PP5



Interreg Alpine Space Programme 21-27

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: ASP010000S

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1 Introduction

Forest ecosystem services (FES) are the goods and benefits those forests provide to people. They are defined by human needs and perceptions of forests, and their value and importance are changing over time. Likewise, how FES are addressed in legislation and policy has evolved through time.

Today FES can be part of sustainable development, contributing to the transition towards a circular, green, and bio-based economy and supporting green value chains. New markets and payment schemes related to FES create opportunities for more effective forest management and promote multifunctional forest use. It is important to emphasize that this is not about charging for the benefits provided by forests, but rather about establishing legal frameworks that regulate FES and support the development of related entrepreneurship.

Policies play a crucial role in this context – they define FES, their importance, and their use. By removing barriers and introducing incentives, policies can support the development and integration of the FES concept into existing legislation. For the development of value chains, new markets, or payment schemes, a strong policy framework and proper addressing of FES are essential.

As part of the *Forest EcoValue* project, each project partner worked within their pilot area to develop business models or payment schemes for selected FES. Throughout our work, we continuously engaged with policies, especially within activity *A3.1 Policy Inventory and Policy Forum*. The present deliverable *Inventory of Policies* is based on the work conducted in the pilot areas. It includes a review of policies and an analysis of measures that address barriers and promote markets and payment schemes related to FES. The deliverable consists of two parts. The first part includes an assessment carried out by the project partners of the current state of various features related to FES policies for selected FES in their respective countries and regions. Each partner filled the template for FES considered in their pilot area. The second part presents the outcome of a joint workshop, prepared and lead by Slovenia Forest Service, where all partners collectively evaluated how policies address FES at the Alpine region level.

2 Project overview

Forests of the Alpine Space play a key role in climate change mitigation and resilience, providing multiple ecosystem services (ES) and environmental and social benefits such as CO₂ absorption, air pollution reduction, biodiversity enhancement, and protection against natural hazards. However, they are threatened by abandonment, climate change, and territorial degradation, which progressively reduce natural resources and the provision of forest ES (FES). Maintenance costs of Alpine forests are high, and public funds and traditional wood value chains are insufficient to cover them. Economic valuation and payment schemes for FES are widely discussed but rarely successfully applied.

The Forest EcoValue project addresses this challenge by developing innovative, sustainable business models for forest management and maintenance, supporting new bio-based value chains and ES markets, and involving different sectors, public and private actors, and citizens. Restoring and maintaining healthy forests has been recognised as a source of value for the Alpine region, while also creating business opportunities and green jobs for Alpine communities.

The project focuses on a subset of FES from the following categories:

- **Provisioning** (e.g. biomass, raw materials, chemicals) with a specific focus on non-timber forest products, and on the production of woody biomass for energy, integrated into circular energy markets.
- **Regulating** (e.g. biodiversity, natural risk reduction, CO₂ absorption) concretely working on carbon and biodiversity credits, natural risk management through protective forests, and innovative environmental finance instruments such as green bonds and reverse auctions.
- **Cultural** (e.g. recreation, habitat experience, health) particularly enhancing recreational and tourism services and spiritual and cultural services.

These services have been explored and tested within Living Labs (LLs) across five countries, located in different Alpine territories and representing diverse ecological and socio-economic contexts:

- **Italy – Valle Tanaro, Piedmont:** The LL in Valle Tanaro explores innovative approaches to valorising chestnut groves, promoting non-timber forest products, developing carbon and biodiversity credits, and fostering experiential activities linked to forest and rural heritage.
- **France - Haute-Savoie:** Grand Annecy and Thonon LLs focus respectively on two aspects 1) recreational ecosystem services, enhancing the value of forests through the sale of experiences such as ecotourism, outdoor activities, and educational programmes 2) enhancing the value of water regulation services through a public-private partnership.
- **Slovenia – Karavanke Mountains, municipality Tržič:** The Slovenian LL addresses natural risk management with a focus on torrent control, advances solutions for wood biomass supply chains and promotes sustainable tourism and recreational use of forests.
- **Austria – Province of Styria:** The Styrian LL concentrates on biodiversity and habitat provision and carbon sequestration and storage through innovative financing mechanisms such as reverse auctions.
- **Germany – Tegernsee Valley, Upper Bavaria:** The German LL explores spiritual and cultural services, such as forest cemeteries with biodegradable urns, while also fostering habitat and biodiversity conservation through collaborative public–private partnerships.

Accordingly, the project is aiming to:

- Map and analyse the Alpine Space forests delivery capacity of FES;
- Identify and estimate the economic potential, define business models and FES market frameworks;
- Test the models/tools developed by the consortium in pilot LLs involving local players;
- Compare results at transnational level, identifying obstacles and facilitating factors;
- Analyse the need for innovative policies to foster forest maintenance, FES markets, and new value chains;
- Elaborate refined transferable tools/models and policy proposals to enable new markets and value chains and ensure the expected FES.

Throughout the project, a continuous participatory process is carried out within the Living Labs. Stakeholders' active involvement in these labs is essential for co-designing and testing models and tools, ensuring that the innovative approaches are rooted in local realities. In parallel, public events and capacity-building workshops have strengthened engagement, supported knowledge transfer, and provided regular updates on project activities. This participatory and long-term approach, tested across the five territories, is paving the way for refined, transferable tools and policy proposals that can unlock new markets and value chains while safeguarding the provision of ecosystem services in the Alpine Space.

Project duration: 36 months.

3 Inventory of policies in the different countries

Template for inventory of policies was prepared by Slovenia Forest Service. It contains several features for description of the policy framework for FES from different aspects from technical, legal, financial and organizational. Selection of features were based on the literature review and was discussed among partners before filling the template.

Project partners assess the current state of various features related to FES policies for selected FES in their respective countries and regions. The symbols plus +, circle o, or minus - were used for estimation whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES. Both levels are needed because some countries are organised in regions (Italy, Austria, Germany) and policy among region can strongly differ while in some countries (Slovenia) the legislation is the same for whole country. Partners could provide an explanation of the situation since detailed explanations regarding barriers, as well as examples of effective policies are highly valued.

The selected FES varied across countries; some partners focused on the same FES, while others addressed FES that were unique to their country. We wanted each partner to assess the FES they are working on in order to gather insider knowledge.

Addressed FES among the countries:

- **Italy:** chestnut provision, tourism and recreation, biomass, carbon storage and sequestration;
- **Slovenia:** protection against natural hazards - torrent management, tourism and recreation, biomass;
- **France:** protection against natural hazards, tourism and recreation, biomass, carbon storage and sequestration, water quality;
- **Austria:** carbon storage and sequestration, biodiversity and habitat provision;
- **Germany:** tourism and recreation, biomass, carbon storage and sequestration, water quality, biodiversity and habitat provision.

For FES that were considered in several countries (tourism and recreation, biomass, carbon storage and sequestration, biodiversity and habitat provision) join tables were prepared to compare status of policy for selected FES among some of the alpine countries.

The Template

Feature	Level	Supporting question	Comments
Technical Feature			
FES mapping	Country	Who (the different sectors) uses the FES maps?	
	Region	Are there different prohibitions, subsidies, possible uses linked to the mapping? Are the maps publicly available?	
Standardized methodology for FES assessment	Country	Who assesses FES?	
	Region	Are different stakeholders involved? Are protocols for FES assessment published or publicly available?	
Legal Feature			
Legal documents addressing FES	Country	Are FES addressed in legal documents? Which?	
	Region		
Management plans addressing FES	Country	Forest management plans, documents for planning and specific programming activities sector, specific strategies, documents related to e.g., spatial planning, tourism, etc.	
	Region		
Norms or laws that aim at limiting actions with a negative environmental effect	Country	Is the use of FES restricted? Is there exploitation of FES and there is no legislation, protecting it? Is there no/lack of control at the field?	
	Region		
The public is involved in decision-making processes considering FES	Country	In what way the public is involved (e.g., through participation in legal documents, petitions)?	
	Region		
Financial Feature			
Subsidies for maintaining (or restoring) FES	Country	Which forests (public, private) in which cases?	
	Region		
Grants for maintaining (or restoring) FES	Country	Which forests (public, private) in which cases?	
	Region		
Payment schemes for maintaining (or restoring) FES	Country	Which forests (public, private) in which cases?	
	Region		
Tax incentives for maintaining (or restoring) FES	Country	Which forests (public, private) in which cases?	
	Region		
Loans for maintaining (or restoring) FES	Country	Which forests (public, private) in which cases?	
	Region		
Other benefits for maintaining (or restoring) FES	Country	Which forests (public, private) in which cases?	
	Region		
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	Is there an organisation that helps forest owners? Do you have a (un)useful web portal that they use to get finance incentives? Are there regional. e.g., business incubators and what do they offer, are they also useful for forest owners?	
	Region		
Other Features			
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	Does collaboration of owners have a significant impact on FES markets, how do they group together?	
	Region		
Information and knowledge: instruments aimed at sharing information and sectorial	Country	How information is shared? Through various online channels, mailing lists, organised workshops, training?	
	Region		

Feature	Level	Supporting question	Comments
knowledge among stakeholders involved		Is there a permanent organised way (e.g., various committees, councils) where organisations (including those of different sectors) could meet?	
Promotion: (Voluntary) certification and labelling programs	Country	Are certification and labelling programmes important, do they contribute to the development of FES markets?	
Multidisciplinary approach	Country	Is there a permanent organised way (e.g., various committees, councils) where organisations (including those of different sectors) could meet?	
	Region	Do you notice inconsistencies in the legislation of the different sectors? Are documents (e.g., management plans, strategies) prepared in cooperation between several institutions?	

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Overview of chosen FES by countries

Tourism and recreation

Feature	Level	Italy	Slovenia	France	Germany
FES mapping	Country	o	+	o	o
	Region	o	+	o	+
Standardized methodology for FES assessment	Country	-	+	-	-
	Region	-	+	-	-
Legal documents addressing FES	Country	o	+	-	+
	Region	-	+	-	+
Management plans addressing FES	Country	-	+	+	-
	Region	o	+	+	o
Norms or laws that aim at limiting actions with a negative environmental effect	Country	o	+	+	+
	Region	o	+	+	+
The public is involved in decision-making processes considering FES	Country	o	+	o	-
	Region	o	+	o	-
Subsidies for maintaining (or restoring) FES	Country	o	o	o	-
	Region	o	o	o	o
Grants for maintaining (or restoring) FES	Country	+	-	o	-
	Region	+	-	o	-
Payment schemes for maintaining (or restoring) FES	Country	+	-	o	-
	Region	+	-	o	-
Tax incentives for maintaining (or restoring) FES	Country	+	-	-	-
	Region	+	-	-	-
Loans for maintaining (or restoring) FES	Country	o	-	-	-
	Region	o	-	-	-
Other benefits for maintaining (or restoring) FES	Country	o	o	-	-
	Region	o	o	-	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	+	o	+
	Region	+	+	o	+
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	o	-	-	+
	Region	o	-	o	+
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	o	-	+
	Region	+	o	o	+
Promotion: (Voluntary) certification and labelling programs	Country	+	o	-	o
	Region	o	o	o	o
Multidisciplinary approach	Country	+	o	o	o
	Region	+	o	o	o

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES

Biomass

Feature	Level	Italy	Slovenia	France	Germany
FES mapping	Country	+	+	+	+
	Region	+	+	+	+
Standardized methodology for FES assessment	Country	+	+	+	+
	Region	+	+	+	+
Legal documents addressing FES	Country	+	+	+	+
	Region	+	+	+	+
Management plans addressing FES	Country	+	+	+	+
	Region	+	+	0	+
Norms or laws that aim at limiting actions with a negative environmental effect	Country	°	+	+	+
	Region	+	+	+	+
The public is involved in decision-making processes considering FES	Country	-	+	+	-
	Region	-	+	0	0
Subsidies for maintaining (or restoring) FES	Country	0	0	-	+
	Region	+	0	-	+
Grants for maintaining (or restoring) FES	Country	-	-	0	-
	Region	-	-	0	-
Payment schemes for maintaining (or restoring) FES	Country	-	-	-	-
	Region	-	-	-	-
Tax incentives for maintaining (or restoring) FES	Country	-	-	-	-
	Region	-	-	-	-
Loans for maintaining (or restoring) FES	Country	-	-	-	-
	Region	-	-	-	-
Other benefits for maintaining (or restoring) FES	Country	-	-	-	-
	Region	+	-	-	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	+	0	+
	Region	+	+	0	+
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+	0	0	
	Region	+	0	0	+
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	-	+	0	+
	Region	+	+	0	+
Promotion: (Voluntary) certification and labelling programs	Country	+	0	-	+
	Region	+	0	-	+
Multidisciplinary approach	Country	0	0	0	+
	Region	+	0	0	+

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Carbon storage and sequestration

Feature	Level	Italy	France	Germany	Austria
FES mapping	Country	+	+	+	-
	Region	+	+	+	+
Standardized methodology for FES assessment	Country	+	+	+	+
	Region	+	+	+	-
Legal documents addressing FES	Country	+	+	+	+
	Region	+		+	+
Management plans addressing FES	Country	o	+	-	+
	Region	+	o	-	+
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	+	-	+
	Region	+	+	-	+
The public is involved in decision-making processes considering FES	Country	-	-	-	o
	Region	-	-	-	o
Subsidies for maintaining (or restoring) FES	Country	+	o	-	+
	Region	+	-	-	+
Grants for maintaining (or restoring) FES	Country	+	+	-	+
	Region	+	-	-	+
Payment schemes for maintaining (or restoring) FES	Country	+	o	o	o
	Region	+	-	o	o
Tax incentives for maintaining (or restoring) FES	Country	-	-	-	-
	Region	-	-	-	-
Loans for maintaining (or restoring) FES	Country	-	-	-	-
	Region	-	-	-	-
Other benefits for maintaining (or restoring) FES	Country	-	-	-	+
	Region	-	-	-	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	+	+	-
	Region	+	+	+	-
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+	o	+	o
	Region	+	+	+	o
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	+	+	+
	Region	+	+	+	+
Promotion: (Voluntary) certification and labelling programs	Country	+	+	o	-
	Region	+	-		-
Multidisciplinary approach	Country	+	+	o	+
	Region	+	-	o	+

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Italy

Chestnut provision, Italy, region: Piemonte

Feature	Level	Comments
FES mapping	Country	-
	Region	o
Standardized methodology for FES assessment	Country	-
	Region	-
Legal documents addressing FES	Country	<p>Legal documents addressing this FES mainly regard the collecting activity regulation and phytosanitary control regulation.</p> <p>Chestnut collection is regulated by the general principle of ownership that is valid on national ground, but the single regions have regulation about the maximum amount of chestnut that is allowed to collect on public properties (usually 2 kg per person). Regional natural parks and areas can organize their own collecting activity regulation in the management plan.</p> <p>Policies about chestnut collection have a relevant influence on the</p>
	Region	+ <p>recreational perceived value of an area with chestnut orchards cover, but also in chestnut coppice forests: these forests are often affected by management issues due to the lack of profit, therefore it could be interesting to investigate the obstacles of current regulation and how it actually affects the territory economy and landscape.</p> <p>Regarding the management of chestnuts orchards for the vegetational point of view, the article 3 of the regional forest law (L.r. 4/2009) demand a document with indications for non-forest areas: <i>Regolamento regionale n. 6 del 04 agosto 2023</i> defines procedures and criteria for the delimitation and assessment of areas covered by arboreal vegetation and shrubbery not considered forest.</p>
Management plans addressing FES	Country	-
	Region	o
Norms or laws that aim at limiting actions with a negative environmental effect	Country	o
	Region	+
The public is involved in decision-making processes considering FES	Country	-
	Region	-
Subsidies for maintaining (or restoring) FES	Country	o
	Region	+

Feature	Level	Comments
		(Example of call for tender CAP 2023-2027: SRG08 - SUPPORT FOR PILOT AND TESTING INNOVATION: both private and public subject could be beneficiaries).
Grants for maintaining (or restoring) FES	Country	- Unsure/not usual.
	Region	-
Payment schemes for maintaining (or restoring) FES	Country	- There are some examples of auto-financing economic mechanism on the Italian LL that can be reported: one example is a secular chestnut orchard managed by its owner, who cover the costs with an initiative called "adopt a secular chestnut". The "adopters" provide a periodical payment that allow the owner to manage the orchards; in accordance to the agreed amount that is paid by the adopters, they can receive a proportional amount of the orchard product (chestnut fruits).
	Region	+
Tax incentives for maintaining (or restoring) FES	Country	- Unsure/not usual.
	Region	-
Loans for maintaining (or restoring) FES	Country	- Unsure/not usual.
	Region	-
Other benefits for maintaining (or restoring) FES	Country	- Unsure/not usual.
	Region	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	o See "Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved" in this section.
	Region	o
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+
	Region	+
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	Regarding sectorial information about practices and opportunities, there are no official channels: information usually is shared between acquaintances and peers.
	Region	+
Promotion: (Voluntary) certification and labelling programs	Country	+
	Region	+

Feature	Level	Comments
		management") standard (https://www.pefc.it/news/castagneti-da-frutto-certificabili-per-lo-standard-pefc).
Multidisciplinary approach	Country	+
	Region	+

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Tourism and recreation, Italy, region: Piemonte

Feature	Level	Comments
FES mapping	Country	o
	Region	o
Standardized methodology for FES assessment	Country	-
	Region	-
Legal documents addressing FES	Country	o
	Region	-
Management plans addressing FES	Country	-
	Region	o
Norms or laws that aim at limiting actions with a negative environmental effect	Country	o
	Region	o
The public is involved in decision-making processes considering FES	Country	o
	Region	o
Subsidies for maintaining (or restoring) FES	Country	o
	Region	o
Grants for maintaining (or restoring) FES	Country	o
	Region	o
Payment schemes for maintaining (or restoring) FES	Country	+
	Region	+

Feature	Level		Comments
Tax incentives for maintaining (or restoring) FES	Country	+	PNRR funding and call for tender in order to provide agrotourism operator and promoters of recreational and sporting events in mountain and countryside areas of tax credit for new reception infrastructure
	Region	+	
Loans for maintaining (or restoring) FES	Country	+	For tourism enterprises, grants and subsidies are available, including the Tourism Revolving Fund (Fondo Rotativo Turismo). These financial supports can be used for various purposes, such as energy upgrading, digitisation and environmental sustainability. It's unclear how much of this resource is concentrated to extensive tourism.
	Region	+	
Other benefits for maintaining (or restoring) FES	Country	°	Unsure/not usual.
	Region	°	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	See the Biomass section.
	Region	+	
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	o	Considering the fragmentation of the Italian and Piedmontese forest property, forest association can be useful to pursue management and FES certification (like "forest bathing", a FES certifiable by PEFC), or in general to be able to cover the costs for tourists' accommodation of any kind. Both state and regions have a role in tourism management, in terms of promoting and financing; regarding of private initiatives, some examples of this were discovered also in our LL: trekking guides, school trips and thematic seminars, summer camps, etc.
	Region	o	
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	See "Multidisciplinary approach" in this section.
	Region	+	
Promotion: (Voluntary) certification and labelling programs	Country	+	Apart for the experimental "forest bathing" certification by PEFC, certification can sometimes be a useful advertising instrument; it is also important to underline the correlation between agricultural and agroforestry production (e.g., chestnut production) and touristic interest, and therefore the link between labelling/certification and ecotourism.
	Region	o	
Multidisciplinary approach	Country	+	Councils and festival are organized periodically on national level in order to disseminate latest innovation in the environment, forest and agricultural fields.
	Region	+	

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Biomass, Italy, region: Piemonte

Feature	Level		Comments
FES mapping	Country	+	To assess the total availability of fuelwood in the Italian and/or regional forests for FEV (WP1, biophysical assessment), we used data from the sampling campaign and assessments carried out between 1998 and 2003 in order to draft the Territory Forest Plans (PFT, now changed in PFIT: see "Management plans addressing FES" section). The basic data are available for free and can be used for any purpose, including commercial purposes, other than the production of statistics on forest resources at national, regional or other territorial unit level.
	Region	+	
	Country	+	

Feature	Level	Comments
Standardized methodology for FES assessment	Region	<p>+</p> <p>National Inventory: The 2nd National Forest inventory was drafted by CREA (forestry and agricultural research centre) in collaboration with State Forest in order to estimate the total Carbon storage in wood biomass, following the international climate agreement.</p> <p>The results of INFC200S are represented by statistics (total and average values, with their sampling error) produced at regional level as well as at national level for forest area as a whole and for different types of forest, Forest and inventory categories.</p> <p>In 2013 the inventory was updated (INFC201S) with the most recent soil use and cover; the sampling method for the biomass remained pretty much the same but more sample points were considered (https://www.inventarioforestale.org/wp-content/uploads/2017/10/INFC201S_Guida_per_i_rilievi_in_campo_2016-12.pdf).</p>
Legal documents addressing FES	Country	<p>+</p> <p>TUFF: D.lgs n.34/2018 "Consolidated law on forests and forest supply chains", valid on national level.</p>
	Region	<p>+</p> <p><i>Legge regionale forestale</i>: Regional law n.4/2009 "Forest management and economic promotion"</p> <p><i>Regolamento Forestale</i>: Regional Regulation n.8/2011, implementing L.r. n.4/2009</p>
Management plans addressing FES	Country	<p>+</p> <p>The National Forest Strategy addresses wood consumption as a part of the provisional FES that forest managers should be able to maintain in a sustainable way; it also addresses the problem of the demand-offer gap that is hitting the Italian wood chain, linking it to the difficulty of exploiting internal resources, in particular regard to fragile areas and those facing economic and social marginalization (such as mountain areas). The NFS is the national product of the adoption of the European Biodiversity Strategy 2030 and the Forest Strategy 2030.</p> <p><i>Piano Forestale Regionale (PFR)</i>: Regional Forestry Plan (2017-2027), addressing the knowledge aspects of forest resources, characteristics, functions and products of forests and other wooded areas (part I), and forest policy strategies, priority areas of intervention and funding (part II)</p> <p><i>Piani Forestali di Indirizzo Territoriale (PFIT)</i>: Forest management plans at territorial level. They establish the division of forest-pastoral areas into homogeneous areas by use and, in the case of wooded or woodland, into areas with homogenous crops (by forest category and type of crop), with the aim of managing and therefore protecting and enhancing the protective, economic, ecological, naturalistic, landscape and socio-cultural functions of the forest and forestry-pastoral heritage.</p> <p><i>Piani di Gestione Forestali (PGF</i>, previously known as "Forestry business plans"): Forest Management Plans, they operate on local scale and are drafted on voluntary base. This means that every forest owner or forest consortium can have a PGF based on the forest land's specific aims. PGFs are often encouraged by the regional PA with calls for tender as funding opportunities in the CAP 2023-27 regional implementation.</p> <p>PFR, PFIT and PGF are derived from art. 9, 10 and 11 of the Regional law n.4/2009 "Forest management and economic promotion".</p>
Norms or laws that aim at limiting actions with a negative environmental effect	Country	<p>o</p> <p>Wood harvesting, regarding the final destination of the product, is regulated in great technical detail by the Regional Regulation n.8/2011, implementing L.r. n.4/2009. Every Italian region has their own regulation regarding the limited quantity of wood to be exploited from forests: this came to be an issue for FES trade-off projects that involved non-productive FES such as carbon stock quantification and selling (see "Standardized methodology for FES assessment" in Carbon storage section).</p>
	Region	<p>+</p> <p>Control on wood exploitation is carried out by "a) by designated regional staff who, within the limits of the service to which they are assigned and in accordance with the powers conferred on them, assume the role of officer or judicial police officer;</p>

Feature	Level	Comments
		<p>b) by the State Forestry Corps within the scope of the competences assigned to it by Article 3 of the Law of 6 February 2004, No. 36 (New Regulation of the State Forestry Corps) and within the scope of additional functions identified by a specific convention;</p> <p>c) by the provincial guards;</p> <p><i>d} by the supervisory staff of the protected areas and by the staff of the forest consortia to which the law recognizes the status of officers or police officers, limited to the territory of competence."</i></p> <p>(Source: Art. 3S of the Regional law n.4/2009 "Forest management and economic promotion").</p>
The public is involved in decision-making processes considering FES	Country	-
	Region	-
Subsidies for maintaining (or restoring) FES	Country	+
	Region	+
Grants for maintaining (or restoring) FES	Country	-
	Region	-
Payment schemes for maintaining (or restoring) FES	Country	-
	Region	-
Tax incentives for maintaining (or restoring) FES	Country	-
	Region	-
Loans for maintaining (or restoring) FES	Country	-
	Region	-
Other benefits for maintaining (or restoring) FES	Country	-
	Region	+
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+
	Region	+
Forest owner association and joint action mechanisms	Country	+
	Region	+

Feature	Level	Comments
for forest owners in the field of FES		economical basis that most small properties can't provide, so consortia allow the feasibility of more ambitious projects, from standard management (wood harvesting) to certification project and non-provision FES market introduction.
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	- Since the regional PAs has power to legislate about the territorial matters such as forestry management (Art. 117 Italian Constitution), they also provide dissemination instrument through, for example, the official website (Foreste I Regione Piemonte), informative platforms (Sifor, LegnoNordOvest) and also special information points regarding specifically forest management and documentary procedures for carrying out silvicultural uses in accordance with the law (Punti Informativi Forestali (P.I.F.) I Regione Piemonte).
	Region	+
Promotion: (Voluntary) certification and labelling programs	Country	+
	Region	+
Multidisciplinary approach	Country	o
	Region	+

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Carbon storage and sequestration, Italy, region: Piemonte

Very important premise: carbon storage is addressed in the following pages mainly as the legalized accounting method of *carbon credits*, whose voluntary market is legally regulated in Italy on (Piedmont) regional level (the national carbon credits register is yet to be launched). Be reminded that the voluntary carbon market is not to be associated to the ETS, or to the credit derived from CDM Kyoto projects.

However, some certification agencies (i.g. FSC) offer to forest managers/owners the possibility to certified that their forest management provides certain FES, first of which the carbon storage, after having quantified the FES with an appropriate index that is approved by the standard. In this case therefore the agency doesn't propose carbon credits certification and selling, but the "Carbon sequestration and storage" service of the forest, demonstrable with different, internationally approved indicators.

In any of these regulated business models, the principle that ensure the legitimacy of the FES as a benefit for the environment and as a product is the existence of a baseline from which the FES is proved to be enhanced: for example, the Piedmont voluntary carbon credit projects regulation (DGR 6 febbraio 2017, n. 24-4638) requires that the baseline corresponds to the minimum legally required carbon stock left in the forest (derived from the maximum amount of wood biomass exploitable from the forest). Every carbon credit project has to preview an even more sustainable scenario, and the delta between the project and the baseline scenarios constitutes the marketable credits, after the due monitoring activities.

Feature	Level	Comments
FES mapping	Country	<p>Forests: As forest inventories are publicly available both nationally and regionally, carbon stored in the forest biomass can be calculated consequentially (see “Standardized methodology for FES assessment”). Ispra (Higher Institute for Environmental Protection and Research), however, is monitoring carbon stock change in the forest areas, and it publishes an annual report on the level of carbon stock in Italian forest calculated on a regional scale.</p> <p>Soil: In 2018, CREA officially presented the Italian Soil Organic Carbon Map, which is one of the first results obtained by the Global Soil Partnership (GSP) and is published and downloadable free of charge (in the form of raster geotiff with 1 x 1 km spatial resolution) from the FAO website.</p>
	Region	<p>On the regional level, IPLA published the Map of organic carbon in soils in the Piedmont Region (1:250000), available on the regional Geoportal.</p> <p>The aims of mapping carbon stocks in woody biomass and/or soil can be many: from assessment of absorption potential to climate change problem, to drafting of greenhouse gas removal projects for sale of carbon credits or certification of ecosystem services (in the case of forest management, for example).</p> <p>Soil, however, was never really used to C stock increments calculation, since increment is difficult to calculate, and soil increment potential is even more limited than forests’. Since carbon voluntary market is regulated on increment of the C storage and not on the pre-existing stock, soil carbon stock is almost never included in these projects.</p>
Standardized methodology for FES assessment	Country	<p>Standardized methodologies for carbon storage assessing are in publicly available scientific papers; IPCC methods are recognized by most (if not all) standards and laws. Some certification standards (i.g PEFC) allow more than one assessing methods.</p>
	Region	<p>((Forest Code for Carbon): Document setting out guidelines for the implementation of forest projects for carbon credit generation, on public and private property, whose action can be recognized by the voluntary and institutional market.)</p>
Legal documents addressing FES	Country	<p>National/international accounting and certification standards (UNI-ISO, FSC, PEFC) address this FES.</p> <p>D.lgs n.34/2018 “Consolidated law on forests and forest supply chains” (TUFF; see “Legal documents addressing FES” in the Fuelwood section) contains rules on forest management, with a focus on sustainable management and carbon sequestration.</p>
	Region	<p>On Piedmont level, the legislation addressing the voluntary regional market is the DGR 6 febbraio 2017, n. 24-4638 <i>“Rules for the development of the voluntary market for forest carbon credits in the Piedmont Region”</i> and the implementation document DGR 18 febbraio 2022, n. 24-4672 (implemented by Executive Determination DD 13S/A1601C/2024, in which are indicated good practice and rules to improve and estimate non-forest ecosystem services (urban and rural)).</p>
Management plans addressing FES	Country	<p>Both carbon credits account and certification models are referred to the <i>Forest management Plan</i> (PGF), which set the management technique and the volume of wood to be not harvested. The project has to demonstrate that the PGF’s selected level of management is more sustainable than the minimum sustainability level prescribed by the law, therefore, without affecting the stability of the forest, the harvested volume of wood must be less than the maximum volume that the regulation allows to be taken (additionality).</p>
	Region	<p>Legislative Decree 24 February 2023, n. 13, converted into Law 21 April 2023, n. 41, established, at the Council for Agricultural Research and Analysis of Agricultural Economics (CREA), the “Public register of carbon credits generated on a voluntary basis by the national agroforestry sector”. It still has</p>

Feature	Level	Comments
		to be published the Executive Determination, and therefore the register is not active yet.
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+ <p>Current forest regulation from national to regional level always include the importance of GHG absorption role of the forest and therefore it includes rules and prohibitions about wood harvesting, land use practices and so on, in order not to exploit the carbon sink potential of this ecosystem.</p>
	Region	+ <p>Monitoring and controls are active on the territory; carbon sequestration and carbon credits projects must have a specific periodic monitoring plan in order to be considered regular and to allow the FES owner/producer to receive compensation.</p>
The public is involved in decision-making processes considering FES	Country	-
	Region	-
Subsidies for maintaining (or restoring) FES	Country	+ <p>Many fundings from CAP over the years have given priority to projects who took in greater consideration climate change mitigation actions, and to landowners involved in certification BM or that intended to start the certification process.*</p>
	Region	+ <p>landowners involved in certification BM or that intended to start the certification process.*</p>
Grants for maintaining (or restoring) FES	Country	+ <p>Calls for tenders and funding opportunities from private foundations are periodically available; these foundation or public entities could use these projects to promote themselves or to partially compensate for their emission on a voluntary base.</p>
	Region	+ <p>Calls for tenders and funding opportunities from private foundations are periodically available; these foundation or public entities could use these projects to promote themselves or to partially compensate for their emission on a voluntary base.</p>
Payment schemes for maintaining (or restoring) FES	Country	+ <p>Certification BM involve the account and the valorisation of the carbon storage role of the forest, either with the carbon credit model (PEFC: sustainability credits, can merge one or more FES) or as a demonstrable FES not divided in units.*</p>
	Region	+ <p>Carbon credits market in general has the goal to compensate the forest managers for the income they gave up by choosing more sustainable forestry practices and harvesting less wood.</p>
Tax incentives for maintaining (or restoring) FES	Country	-
	Region	-
Loans for maintaining (or restoring) FES	Country	-
	Region	-
Other benefits for maintaining (or restoring) FES	Country	-
	Region	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+ <p>See Fuelwood section.</p>
	Region	+ <p>See Fuelwood section.</p>
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+ <p>Very often carbon valorisation projects can't be afforded by forest owners, so that these kinds of collaboration and aggregation become fundamental to pursue sustainable management projects. (See also the Fuelwood section).</p>
	Region	+ <p>Very often carbon valorisation projects can't be afforded by forest owners, so that these kinds of collaboration and aggregation become fundamental to pursue sustainable management projects. (See also the Fuelwood section).</p>
Information and knowledge: instruments aimed at sharing information and sectorial	Country	+ <p>The net of stakeholder can be considered the same described in the Fuelwood section; informative events are sometimes planned by Piedmont Region in order to boost forest managers' interest towards these business models and</p>
	Region	+ <p>The net of stakeholder can be considered the same described in the Fuelwood section; informative events are sometimes planned by Piedmont Region in order to boost forest managers' interest towards these business models and</p>

Feature	Level	Comments
knowledge among stakeholders involved		management approach, and to spread knowledge on how these projects can be drafted. The regional voluntary carbon market register that is going to be launched in Piedmont is a platform on which carbon credits can be exchanged between forest managers and companies or private buyers.
Promotion: (Voluntary) certification and labelling programs	Country	+
	Region	+
Multidisciplinary approach	Country	+
	Region	+

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Slovenia

Slovenia is not organised in regions therefore the estimations are the same on country and regional level.

Protection against natural hazards – torrent management, Slovenia

Feature		Comments
FES mapping	+	Slovenia Forest Service defines FES mapping, maps are publicly available. The maps are the basis for limitation of forest use, subsidies, possible uses as well. Torrent problematic is not mapped separately. Maps from other disciplines, such as geology and pedology, are also considered in the process of FES mapping. For example, different maps in the field of natural hazards are prepared by water sector and they are the background for mapping protection function.
Standardized methodology for FES assessment	+	Standardized methodology for the FES assessment is elaborated by Ministry of agriculture, forestry and food. FES are assessed across the country given that methodology.
Legal documents addressing FES	+	Slovenian forestry is multifunctional. The FES are addressed in the forest law, also torrential areas, however they are not well defined. On the other hand, the torrents are also addressed in water legislation. It is multi sectoral subject.
Management plans addressing FES	o	FES are important part of forest management plans. The torrent problematic is not address specifically, but it is covered by protective FES. The water sector prepared different plans for maintaining water streams, but usually for bigger streams, and for measures near the streams, not for wider (torrential) areas.
Norms or laws that aim at limiting actions with a negative environmental effect	+	In Slovenia general conditions for forest management regardless FES mapping are quite strict and consider actions with a negative environmental effect. Based on the characteristics of the forests and the FES mapping, the permissible silvicultural measures and technologies to be used are specified in the forest management plan.
The public is involved in decision-making processes considering FES	+	Public is involved in preparation of forest management plans where FES are defined. In spatial planning processes at municipality level, public is also involved.
Subsidies for maintaining (or restoring) FES	o	Forest subsidies for some silvicultural measures are connected to FES mapping. There are some funds intended for maintaining FES connected with different natural hazards (protective forests). However, for torrent management some clarification in legislation

Feature		Comments
		(terminology) is needed. There is no regular practice of granting subsidies for additional measures in torrential areas.
Grants for maintaining (or restoring) FES	-	
Payment schemes for maintaining (or restoring) FES	-	
Tax incentives for maintaining (or restoring) FES	o	In protective forests, forest owners are exempt from tax. The state strategy is to buy protective forests.
Loans for maintaining (or restoring) FES	-	
Other benefits for maintaining (or restoring) FES	-	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	+	Slovenia Forest Service is advisory organisation for forest owners, helping them with silvicultural measures and measures' financing. The whole territory of Slovenia is covered by districts with foresters. Chamber of Agriculture and Forestry of Slovenia is also forest owners support organization, even though its work is more focused on agriculture. Forest owners can get support for certification of the forests, information about open calls.
Forest owner association and joint action mechanisms for forest owners in the field of FES	-	There are some forest owner associations and machinery rings. Owners' cooperation varies across Slovenia. The Bled Machinery Circle had been active in the field of work in the protection forests, which are related to torrent problematics. However, the role of owners' associations in the field of torrent management is currently not noticeable.
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	o	Slovenia Forest Service is implementing many activities in the field of knowledge transfer: through participatory approach in the process of preparation of forest management plans; on a daily basis in relation of district foresters – forest owners; organization of events for specific topics, also for natural hazards and torrents; through submitting professional papers; through dissemination activities of different national and international projects etc. There is a subject for students of Forestry in Biotechnical Faculty about torrent thematic. There are no regular committees to discuss torrent problematic.
Promotion: (Voluntary) certification and labelling programs		Not important for chosen FES.
Multidisciplinary approach	-	The water and forestry sectors work together to draw up forest management plans and guidelines. Otherwise, communication among sectors is not sufficient.

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Biomass, Slovenia

Feature		Comments
FES mapping	+	A lot of forestry data including growing stock, possible cut, FES mapping is included in forest management plans, made by Slovenia Forest Service for all forest regardless the ownership. Biomass (for heating) is not considered separately from timber. Anyway, its supply can be calculated by species composition and sortimentation data.

Feature	Comments
Standardized methodology for FES assessment	+ Standardized methodology for the FES assessment is elaborated by Ministry of agriculture, forestry and food. FES are assessed across the country given that methodology. Additional tool for detail biomass supply and demand estimation is Slovene system for wood biomass SWEIS, developed by WISDOM (Woodfuel Integrated Supply/Demand Overview Mapping) methodology.
Legal documents addressing FES	+ Forest law. Regulation on forest management planning and wildlife management planning. NEPN – Comprehensive National Energy and Climate plan of the republic of Slovenia.
Management plans addressing FES	+ Forest management plan.
Norms or laws that aim at limiting actions with a negative environmental effect	+ The cut, and therefore the biomass, is defined and regulated by forest management plans, prepared by Slovenia Forest Service and accepted by Ministry or Government (in case of regional management plans). There are no norms considering green chips. Currently green chips are not exploited a lot and this does not represent a problem.
The public is involved in decision-making processes considering FES	+ Public could be involved through participatory approach in preparation of forest management plans.
Subsidies for maintaining (or restoring) FES	o There are subsidies for some silvicultural measures (f. e. first thinning), from which outcomes (small-diameter trees) could be used for biomass for energy as well. Subsidies for active management also encourage biomass production.
Grants for maintaining (or restoring) FES	-
Payment schemes for maintaining (or restoring) FES	-
Tax incentives for maintaining (or restoring) FES	-
Loans for maintaining (or restoring) FES	-
Other benefits for maintaining (or restoring) FES	- There is no special benefit for maintaining FES, but the use of renewable resources is highly promoted through various financial instruments (f. e. wood biomass district heating system).
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	+ Slovenia Forest Service is advisory organisation for forest owners, helping them with subventions as well with directing forest development and silvicultural measures.
Forest owner association and joint action mechanisms for forest owners in the field of FES	o There are some active forest owner associations machinery circles in some parts of Slovenia. In general, however, the cooperation between owners does not play a major role in the use of biomass, even though it is important. Sometimes owners connect to use the machinery (f. e. biomass grinders) together, however for our knowledge the cooperation is not very common. District foresters can initiate forest owners' cooperation.
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	+ Information regarding measures in forest (including available cut) is given by Slovenia Forest Service. District foresters support and help forest owners on the field. At the Slovenia Forest Service page there is a tool for forest owners where they can get information about their forest parcels, about the location, the cut, tree species composition. Additional tool for detail biomass supply and demand estimation is Slovene system for wood biomass SWEIS, developed by WISDOM (Woodfuel Integrated Supply/Demand Overview Mapping) methodology which can be used at the municipality level.

Feature	Comments
Promotion: (Voluntary) certification and labelling programs	o The forest could be certified by PEFC. It does not play an important role for biomass since our legislation is generally quite strict.
Multidisciplinary approach	o Slovenia Forest Service, representing forestry sector, was included in the preparation of laws, conceded with climate or energy, f.e. climate law, but there could be more cross sectoral activities in the field of energy from wood biomass.

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Tourism and recreation, Slovenia

Feature	Comments
FES mapping	+
In forest management plans, FES areas are defined by foresters, including FES for tourism and recreation. Municipalities prepares spatial plans where areas important for the recreational use are also considered.	
Standardized methodology for FES assessment	+
Standardized methodology for the FES assessment is elaborated by Ministry of agriculture, forestry and food. FES are assessed across the country given that methodology.	
Legal documents addressing FES	+
Areas, important for recreation and tourism are addressed in forest management plans. When a forest is of exceptional importance for recreation and tourism, it can be designated by a municipal or government decree as a forest with a special purpose, where forest management is specifically adapted. Municipalities, through their spatial plans, define areas that are particularly important for tourism and recreation, thereby guiding future development. Municipalities also prepare other strategic documents, such as tourism development strategies.	
Management plans addressing FES	+
Management guidelines that support recreation and tourism in forests are defined by regional and local forest management unit plans prepared by the Slovenia Forest Service.	
Norms or laws that aim at limiting actions with a negative environmental effect	+
Regional forest development plans were under the process of environmental impact assessment which enabled that no actions will be planned that will leave a negative environmental effect. In addition, on operational level, all the actions planned are defined in the forest plans on local level and also undergo participatory process.	
The public is involved in decision-making processes considering FES	+
During the preparation of the regional and local forest management plans and municipality spatial plan, all relevant stakeholders are involved in the process, as is the general public.	
Subsidies for maintaining (or restoring) FES	o
For forests where social functions are of exceptional importance, subsidies are available for silvicultural measures. Forests that are declared as special purpose forests (e.g., urban forests) – there are compensation measures defined for adopted management in these areas. At national level, there is partial funding for mountain trails, which are maintained on a voluntary basis, but the state has decided to financially support the development of these trails.	
Grants for maintaining (or restoring) FES	-
Payment schemes for maintaining (or restoring) FES	-
Tax incentives for maintaining (or restoring) FES	-
Loans for maintaining (or restoring) FES	-

Feature	Comments	
Other benefits for maintaining (or restoring) FES	o	It is in interest of service providers, municipality, and county to have healthy and attractive forests.
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	+	Slovenia Forest Service is advisory organisation for forest owners, helping them with subventions as well with directing forest development and silvicultural measures.
Forest owner association and joint action mechanisms for forest owners in the field of FES	-	There are some forest owner associations but they do not have a great impact on the recreation and tourism in the forests.
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	o	At the Slovenia Forest Service page there is a tool for forest owners where can get information about their forest parcels, about the location, the cut, tree species composition and planned measures. District foresters support and help forest owners on the field. The Slovenia Forest Service is also active in the field of forest pedagogy and carries out various dissemination activities for different target groups, such as touristic, alpine sports clubs, schools, general public and professional public. Different dissemination activities for general public and specific interest groups are also organized in municipality, local level by municipalities, different clubs and association, sector agencies.
Promotion: (Voluntary) certification and labelling programs	o	The forest could be certified by PEFC but it does not play an important role for recreation and tourism. Due to its extensive forest cover, Slovenia promotes itself as a green country.
Multidisciplinary approach	o	The responsibilities of the municipality are area-specific, with the municipal spatial plan being the most important spatial document and, in smaller parts, the detailed municipal spatial plan. These documents are prepared by the municipal administration in accordance with the legislation and approved by the municipal council. The municipality also prepares strategies for various areas in accordance with national legislation, which are also approved by the municipal council. Spatial planning is one of the municipality's most important tasks and is linked to national legislation and the wishes of the municipality's residents and other stakeholders, such as public institutions and businesses, as well as to the strategic development vision formulated by the municipality and agreed with the various stakeholders, for example water sector, forest sector. The Slovenia Forest Service monitors development in forest areas and provides opinions and guidelines concerning forest space and planned spatial development. Closer networking between the providers, the exchange of knowledge and information between them, also with the municipality and other stakeholders, e.g., regional development agencies, is also important and crucial for the FES development.

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

France

Protection against natural hazards, France, region: Auvergne-Rhône-Alpes

Feature	Level		Comments
FES mapping	Country	o	National mapping is underway. Mapping has been carried out on certain forests An ONF 'RTM' (mountain land restoration) service, entirely financed by the State as a mission of general interest, manages the forests acquired by the

Feature	Level		Comments
	Region	o	State to reduce risks, produces hazard/issue maps for these forests and provides technical support to the Prefect on natural mountain risks. As France is a centralized state, what is done at the country level is valid for the region administrative scale.
Standardized methodology for FES assessment	Country	+	INRAE has developed methods for mapping natural hazards on a large scale. As France is a centralized state, what is done at the country level is valid for the region administrative scale.
	Region	+	
Legal documents addressing FES	Country	+	Law no. 95-101 of 2 February 1995 on strengthening environmental protection (plans to prevent foreseeable natural risks such as floods, landslides, avalanches, forest fires, earthquakes, volcanic eruptions, storms and cyclones). The Forestry Code sets out measures to prevent natural risks associated with forests (fires, falling trees, avalanches, etc....). As France is a centralized state, what is done at the country level is valid for the region administrative scale.
	Region	+	
Management plans addressing FES	Country	+	Depending on the level of hazard, local authorities must draw up plans to prevent foreseeable natural risks.
	Region	+	This issue is also assessed in forest management plans if the level of risk so requires.
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	The natural risk prevention plan (PPRN) is drawn up under the authority of the prefect, in conjunction with local authorities as part of a consultation process Territorial strategy for mountain risk prevention (StePRiM) is a contractual tool between the State and local authorities following a call for projects. Its aim is to promote comprehensive and balanced management of risks in mountain areas. As France is a centralized state, what is done at the country level is valid for the region administrative scale.
	Region	+	
The public is involved in decision-making processes considering FES	Country	-	The PPRN is subject to a public enquiry. Consultation between the various stakeholders in the area and the general public for StePRiM
	Region	+	
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	Available to the public on the Georisques platform (Accueil - Particulier I Géorisques)
	Region	+	
Subsidies for maintaining (or restoring) FES	Country	+	In the case of public forests, and mainly those owned by the State, the State provides direct funding via a "Mission of General Interest" (MIG) RTM, for actions in favor of forests with a protective function against natural hazards.
	Region	+	
Grants for maintaining (or restoring) FES	Country	o	One-off sponsorship for FES initiatives.
	Region	o	
Payment schemes for maintaining (or restoring) FES	Country	o	There are no markets or payment schemes for FESs, but they are for the agricultural sector, in the form of payments for environmental services, the aim of which is to financially reward players who preserve the services provided by ecosystems.
	Region	+	
Tax incentives for maintaining (or restoring) FES	Country	-	No.
	Region	-	
Loans for maintaining (or restoring) FES	Country	-	No.
	Region	-	
Other benefits for maintaining (or restoring) FES	Country	-	No
	Region	-	

Feature	Level		Comments
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	The forest communities' association and the ONF for public forests, and the CNPF and silvicultural groups or forestry cooperatives for private forests, help with forest management.
	Region	+	Regional and departmental websites, the COFOR forestry aid reference system, the CNPF website and the DREAL/DRAAF websites list available aid and calls for forestry-related projects.
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+	The forest communities' association, the CNPF and forest owner associations, members of CRFB AURA's specialized committee on FES, can provide information to owners.
	Region	+	
Promotion: (Voluntary) certification and labelling programs	Country	+	The PEFC and FSC sustainable forest management certifications guarantee the sustainable management of forests and define, respectively, rules and criteria for sustainable forest management, which apply to those who grow, harvest, process and market wood, and rules that safeguard ecological, social and economic aspects. These certifications encourage the preservation and recognition of ecosystem services, although they do not pay for them directly. The "Forêt d'exception" label recognizes an exemplary area in terms of sustainable development (biodiversity, landscape, cultural and silvicultural elements and social heritage).
	Region	+	
Multidisciplinary approach	Country	+	A specialized CRFB committee enables forestry and environmental players to share information and carry out joint projects.
	Region	+	Few direct FES funding mechanisms in France The AURA SRSSE is co-written by all stakeholders (foresters and environmentalists) on a voluntary basis.

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Tourism and recreation, France, region: Auvergne-Rhône-Alpes

Feature	Level		Comments
FES mapping	Country	o	The DREALs produce and make available landscape atlases that characterise the typical character of the landscape.
	Region	+	There are no summary maps of forest recreation and tourism activities.
Standardized methodology for FES assessment	Country	+	The landscape atlas method is piloted by the MTE. For other activities, there is no method.
	Region	+	As France is a centralized state, what is done at the country level is valid for the region administrative scale
Legal documents addressing FES	Country	+	FESs are considered in legislative documents such as the Forestry and Environment Codes. Regarding the landscape, regulatory perimeters can be established: classified or listed sites under the Landscape Act, but no specifications specific to the forest.
	Region	+	As France is a centralized state, what is done at the country level is valid for the region administrative scale
Management plans addressing FES	Country	+	Forest management plans take account of landscape-related perimeters.
	Region	+	
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	Access to forests may be restricted where there are particular issues at stake, particularly ecological ones. Forest management orders for public forests or management plans for biological reserves may regulate public access.
	Region	+	As France is a centralized state, what is done at the country level is valid for the region administrative scale.
The public is involved in decision-making processes considering FES	Country	+	Case-by-case consultation on a voluntary basis.
	Region	+	

Feature	Level	Comments
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+
	Region	+
Subsidies for maintaining (or restoring) FES	Country	+
	Region	+
Grants for maintaining (or restoring) FES	Country	+
	Region	+
Payment schemes for maintaining (or restoring) FES	Country	+
	Region	+
Tax incentives for maintaining (or restoring) FES	Country	-
	Region	-
Loans for maintaining (or restoring) FES	Country	-
	Region	-
Other benefits for maintaining (or restoring) FES	Country	-
	Region	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+
	Region	+
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	-
	Region	+
Promotion: (Voluntary) certification and labelling programs	Country	+
	Region	+
Multidisciplinary approach	Country	-
	Region	+

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Biomass, France, region: Auvergne-Rhône-Alpes

Feature	Level	Comments
FES mapping	Country	+ With the development of modelling based on LIDAR data, the standing stock of wood is now mapped at a fine scale over a large part of the country. In the Northern Alps, all the forests have been mapped.
	Region	+
Standardized methodology for FES assessment	Country	+ This is the only SEF for which there is a well-established market. Wood prices are known from wood sales.
	Region	+ As France is a centralized state, what is done at the country level is valid for the region administrative scale.
Legal documents addressing FES	Country	+ The provision of fuel wood biomass service is considered in legislative documents such as the Forestry and Environment Codes. It is also considered in national strategic documents and action plans (National Forest and Wood Program PNFB/PRFB) and regional plan (SRADDET). As France is a centralized state, what is done at the country level is valid for the region administrative scale.
	Region	+
Management plans addressing FES	Country	+ Forest management is based both on management documents guaranteeing sustainable management, which vary according to the size of the forest and its status (public or private), and on a more global strategy, linked to the territorial context (SRGS, DRA-SRA). The timber harvesting is planned within each forest management plan.
	Region	+
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+ The Forestry Code guarantees sustainable forest management, which means that certain services, such as wood production, are regulated. The topic is actually well controlled.
	Region	+ As France is a centralized state, what is done at the country level is valid for the region administrative scale
The public is involved in decision-making processes considering FES	Country	+ In the case of management plans for public forests (which contain decisions concerning FES), the agreement of the owner communities is required. Where the stakes are high, specific consultation processes can be set up for a particular forest or forest area.
	Region	+
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+ For all PNFB/PRFB forestry topics, there is an annual monitoring body with stakeholders at national/regional level For FES, in the Auvergne Rhône-Alpes region, a specialized CRFB committee enables forestry and environmental stakeholders to share information and carry out joint projects.
	Region	+
Subsidies for maintaining (or restoring) FES	Country	+ The State subsidises the restoration of damaged forests and the enrichment of forests with a view to adapting them to climate change. The main objective is to maintain forest carbon stocks and wood production (carbon sequestration and economic sector).
	Region	+
Grants for maintaining (or restoring) FES	Country	+ One-off sponsorship for FES initiatives, in particular for restoring damaged forests.
	Region	+
Payment schemes for maintaining (or restoring) FES	Country	+ There are no markets or payment schemes for SEFs, but they are for the agricultural sector, in the form of payments for environmental services, the aim of which is to financially reward players who preserve the services provided by ecosystems.
	Region	+
Tax incentives for maintaining (or restoring) FES	Country	- No.
	Region	-
Loans for maintaining (or restoring) FES	Country	- No.
	Region	-
Other benefits for maintaining (or restoring) FES	Country	- No.
	Region	-
Organizations helping forest owners get	Country	+

Feature	Level	Comments
finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Region	+ The forest communities association and the ONF for public forests, and the CNPF and silvicultural groups or forestry cooperatives for private forests, help with forest management. Regional and departmental websites, the COFOR forestry aid reference system, the CNPF website and the DREAL/DRAAF websites list available aid and calls for forestry-related projects.
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	The forest communities association, the CNPF and forest owner associations, members of CRFB AURA's specialized committee on FES, can provide information to owners.
	Region	+ +
Promotion: (Voluntary) certification and labelling programs	Country	+ The PEFC and FSC sustainable forest management certifications guarantee the sustainable management of forests and define, respectively, rules and criteria for sustainable forest management, which apply to those who grow, harvest, process and market wood, and rules that safeguard ecological, social and economic aspects. These certifications encourage the preservation and recognition of ecosystem services, although they do not pay for them directly. The "Forêt d'exception" label recognizes an exemplary area in terms of sustainable development (biodiversity, landscape, cultural and silvicultural elements and social heritage).
	Region	+ +
Multidisciplinary approach	Country	- A specialized CRFB committee enables forestry and environmental players to share information and carry out joint projects.
	Region	+ Few direct FES funding mechanisms in France. The AURA SRSSE is co-written by all stakeholders (foresters and environmentalists) on a voluntary basis.

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Carbon storage and sequestration, France, region: Auvergne-Rhône-Alpes

Feature	Level	Comments
FES mapping	Country	+ With the development of modelling based on LIDAR data, the standing capital of wood, and therefore the volume of CO ₂ stored on the ground, is now mapped at a fine scale over a large part of the national territory. In the Northern Alps, all the forests have been mapped.
	Region	+ +
Standardized methodology for FES assessment	Country	+ The MTE, via the Low Carbon Label, has developed a method for assessing carbon storage according to the methods approved (afforestation, restoration of degraded stands).
	Region	+ +
Legal documents addressing FES	Country	+ SEFs are considered in legislative documents such as the Forestry and Environment Codes. The CO ₂ storage and sequestration in forest service is considered in legislative documents such as the Forestry and Environment Codes. It is also considered in the Law n°2021-1104 on combating climate change and building resilience to its effects and the Law of 8 November 2019 on energy and climate, known as the "Climate and Energy Law". The National Low Carbon Strategy (SNBC) is France's roadmap for combating climate change. As France is a centralized state, what is done at the country level is valid for the region administrative scale.
	Region	+ +
Management plans addressing FES	Country	+ For the moment, forest management plans do not address carbon storage, but it is planned within the new type of management plan of public forests.
	Region	+ +
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+ The Low Carbon Label aims to encourage the development of projects in all diffuse sectors: forestry, agriculture, transport, buildings, natural areas, etc. A project can only be awarded the label if it is implemented in accordance with an approved method that makes it possible to assess the emission reductions that will result, and that determines the conditions for eligibility and verification of the project. In practical terms, the methods are approved by the Directorate-General for Energy and Climate (DGEC).
	Region	+ +

Feature	Level	Comments
		<p>In the forestry sector, three methods developed by the Centre National de la Forest Property (CNPF) have been approved:</p> <ul style="list-style-type: none"> - Afforestation - Restoration of degraded forest stands - Scrap (conversion of coppice into high forest on stumps) <p>As France is a centralized state, what is done at the country level is valid for the region administrative scale+</p>
The public is involved in decision-making processes considering FES	Country	+
	Region	+
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+
	Region	+
Subsidies for maintaining (or restoring) FES	Country	+
	Region	+
Grants for maintaining (or restoring) FES	Country	
	Region	
Payment schemes for maintaining (or restoring) FES	Country	+
	Region	+
Tax incentives for maintaining (or restoring) FES	Country	-
	Region	-
Loans for maintaining (or restoring) FES	Country	-
	Region	-
Other benefits for maintaining (or restoring) FES	Country	-
	Region	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+
	Region	+
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+
	Region	+
Promotion: (Voluntary) certification and labelling programs	Country	+
	Region	+

Feature	Level		Comments
			sustainable development (biodiversity, landscape, cultural and silvicultural elements and social heritage).
Multidisciplinary approach	Country	+	A specialized CRFB committee enables forestry and environmental players to share information and carry out joint projects.
	Region	+	Few direct FES funding mechanisms in France The AURA SRSSE is co-written by all stakeholders (foresters and environmentalists) on a voluntary basis.

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Water quality, France, region: Auvergne-Rhône-Alpes

Feature	Level		Comments
FES mapping	Country	+	Water catchment protection areas are defined and mapped by the Regional Health Agencies (ARS).
	Region	+	
Standardized methodology for FES assessment	Country	+	There are no standardized procedures for evaluating FES. A national report "French evaluation of forest ecosystems and ecosystem services" was published in 2018 by GIP ECOFOR. It does not include mapping. Forest managers were consulted on the final document but were unable to have it modified.
	Region	-	
Legal documents addressing FES	Country	+	SEFs are considered in legislative documents such as the Health and Environment Code.
	Region	+	
Management plans addressing FES	Country	+	Forest management plans take account of water-related regulations.
	Region	+	
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	Prefectorial decrees define the catchment protection perimeters around drinking water catchments and the activities that are prohibited or subject to authorisation within these perimeters. This may include a ban on creating forest tracks or even a ban on logging.
	Region	+	As France is a centralized state, what is done at the country level is valid for the region administrative scale.
The public is involved in decision-making processes considering FES	Country	+	As with all draft decrees, these are subject to a public enquiry, during which the public can submit their comments.
	Region	+	As France is a centralized state, what is done at the country level is valid for the region administrative scale.
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	For all PNFB/PRFB forestry topics, there is an annual monitoring body with stakeholders at national/regional level
	Region	+	For FES, in the Auvergne Rhône-Alpes region, a specialized CRFB committee enables forestry and environmental stakeholders to share information and carry out joint projects.
Subsidies for maintaining (or restoring) FES	Country	+	There is no set amount of funding. However, the local authority responsible for managing the drinking water supply may occasionally finance the additional management costs associated with the requirements of the catchment area.
	Region	+	
Grants for maintaining (or restoring) FES	Country	+	One-off sponsorship for FES initiatives.
	Region	+	
Payment schemes for maintaining (or restoring) FES	Country	+	There are no markets or payment schemes for SEFs, but they are for the agricultural sector, in the form of payments for environmental services, the aim of which is to financially reward players who preserve the services provided by ecosystems.
	Region	+	
Tax incentives for maintaining (or restoring) FES	Country	-	No.
	Region	-	

Feature	Level	Comments
Loans for maintaining (or restoring) FES	Country	-
	Region	-
Other benefits for maintaining (or restoring) FES	Country	-
	Region	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+
	Region	+
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+
	Region	+
Promotion: (Voluntary) certification and labelling programs	Country	+
	Region	+
Multidisciplinary approach	Country	+
	Region	+

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Germany

Carbon storage and sequestration, Germany, region: Bayern

Feature	Level	Comments
FES mapping	Country	+
	Region	+
Standardized methodology for FES assessment	Country	+
	Region	+
Legal documents addressing FES	Country	+
	Region	+
Management plans addressing FES	Country	-
	Region	-

Feature	Level		Comments
			<p>rather than explicitly prioritizing maximal carbon storage through reduced harvesting or extended rotations. This reflects the complex trade-offs forest managers must navigate.</p> <p>There are climate adaptation and mitigation strategies at federal and state levels that promote forestry practices beneficial for carbon storage, such as promoting mixed-species forests or climate-resilient tree species.</p>
Norms or laws that aim at limiting actions with a negative environmental effect	Country	-	We are not aware of norms or laws that limit CO ₂ Sequestration as a FES.
	Region	-	
The public is involved in decision-making processes considering FES	Country	-	There is no direct involvement of the public in decision-making regarding FES CO ₂ Sequestration, as far as we are aware.
	Region	-	
Subsidies for maintaining (or restoring) FES	Country	-	We are not aware of any subsidies for CO ₂ Sequestration. There are subsidies for improved forest management aimed at building more climate-adaptive forests, but they are not explicitly targeted at enhancing CO ₂ sequestration.
	Region	-	
Grants for maintaining (or restoring) FES	Country	-	We are not aware of any grants for CO ₂ Sequestration.
	Region	-	
Payment schemes for maintaining (or restoring) FES	Country	o	While payment schemes and CO ₂ certification programs exist in Germany, their uptake among forest owners for carbon sequestration is still limited and not yet widespread.
	Region	o	
Tax incentives for maintaining (or restoring) FES	Country	-	We are not aware of any tax incentives for CO ₂ Sequestration.
	Region	-	
Loans for maintaining (or restoring) FES	Country	-	We are not aware of any loans for CO ₂ Sequestration.
	Region	-	
Other benefits for maintaining (or restoring) FES	Country	-	We are not aware of any other benefits for CO ₂ Sequestration.
	Region	-	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	<p>Yes, forest owners are supported by various organizations on different levels.</p> <p>There are lobby organisations such as the Deutsche Forstwirtschaftsrat e.V. (DFWR), which represents forestry interests at the national level. Also, on federal level similar organisations exists, with a focus on networking and lobbying, like the Bavarian forest owner's federation (https://www.bayer-waldbesitzerverband.de)</p> <p>The local forest administration (AELF) gives support for forest owners in navigating funding programs, including help with applications and compliance. Also they offer Workshops and personal advisory services.</p> <p>Forest owner associations provide help with getting contractors, selling timber and the practical aspects of forestry. Best portal in that regard might be offered by the Bavarian state: https://www.waldbesitzer-portal.bayern.de/unser_angebot/foerderung/index.html</p> <p>There a forest owner will find the forester responsible for his area and information regarding subsidies.</p> <p>The national and federal ministries also offer website that inform on subsidies (the information is in part redundant):</p> <ul style="list-style-type: none"> • Förderdatenbank (Funding Database): https://www.foerderdatenbank.de A comprehensive database maintained by the German government listing available subsidies, including programs for forestry across Germany. • Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten (StMELF): https://www.stmelf.bayern.de/
	Region	+	

Feature	Level		Comments
			Contains information on Bavarian forestry subsidies and incentive programs, including the WaldFöR program.
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+	We are not aware of any grouping of forest owners with regard to CO ₂ sequestration. There are of course commercial organizations that operate in the carbon offset market by offering CO ₂ certificates or carbon credits to customers, often working with individual forest owners or aggregating forest carbon projects. However, these arrangements tend to be project-based rather than representing ongoing collaboration among forest owners themselves.
	Region	+	
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	Many forest owner associations maintain mailing lists and newsletters that regularly distribute updates on policies, funding, market developments, and best practices. For example, regional Waldbesitzerverbände (forest owner associations) use email newsletters to reach their members. Institutions like the ForstHolz Cluster Bayern play a key role in bringing together actors from forest owners and enterprises to researchers and policymakers, across sectors such as forestry, wood processing, and bioeconomy. They foster collaboration and information sharing through events, working groups, and online resources.
	Region	+	There is also the Fachagentur Nachwachsende Rohstoffe (FNR) , the German Agency for Renewable Resources, as a state-level actor offering seminars and educational events focused on sustainable forest biomass use and renewable resources. Their program of " Wald-Seminare " provides forest owners and managers with up-to-date knowledge on forest management (FNR Wald-Seminare Program)
Promotion: (Voluntary) certification and labelling programs	Country	o	Certification schemes like PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forest Stewardship Council) set standards for sustainable forest management, ensuring that timber is sourced responsibly. This builds trust among consumers, businesses, and policymakers regarding the sustainability of forest products. While FSC is adopted by only a small proportion of forest owners, PEFC is widely implemented through forest owner associations, making it more prevalent, though it is generally considered less strict.
	Region	o	By requiring integrated management that balances timber production, biodiversity conservation, soil, and water protection, certification programs support the holistic delivery of multiple ecosystem services, strengthening the overall value proposition of forests. Neither certification offers direct markets for ecosystem services beyond timber production, but they provide incentives to improve other forest ecosystem services. Certification also raises awareness and encourages forest owners and supply chain actors to engage in sustainable practices.
Multidisciplinary approach	Country	o	There are events organized around the topic of forest and timber (biomass) that bring together stakeholders from these fields. Examples include the International Forest Fair (INTERFORST) , other regional forest days, the Bayerische Waldbesitzertag (Bavarian Forest Owners' Day) , and various conferences hosted by the ForstHolz Cluster Bayern or the Bayerische Landesanstalt für Wald und Forstwirtschaft (LWF) . These events facilitate networking, knowledge exchange, and collaboration among forest owners, industry representatives, scientists, and policymakers. However, we are not aware of events or organizations that regularly transcend these sectors to include broader interdisciplinary or cross-sectoral participation.
	Region	o	

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Biodiversity and habitat provision, Germany, region: Bayern

Feature	Level		Comments
FES mapping	Country	o	There are no specific maps for habitat provision. Useful proxy data source can be "Schutzwertkarte Arten und Lebensräume" (Protection Target Map for Species and Habitats) provided by the Bavarian Environment Agency (LfU). This map compiles information on key species and habitat types, serving as a valuable resource for approximating habitat quality and distribution in forested landscapes.
	Region	o	
Standardized methodology for FES assessment	Country	o	There is no standardized methodology specifically for assessing habitat provision as a forest ecosystem service (FES). Assessments can be conducted by environmental agencies, forestry authorities, and research institutions using various ecological data and proxy maps.
	Region	o	
Legal documents addressing FES	Country	+	The Bavarian Forest Act (BayWaldG) and the Bavarian Nature Conservation Act (BayNatSchG), legally protect forest habitats to ensure the conservation of biodiversity and the sustainable management of forest ecosystems. One key goal of the Forest Act is: » to preserve and, where necessary, increase the biological diversity of the forest ».
	Region	+	
Management plans addressing FES	Country	-	Forest management plans can include habitat provision as part of their sustainability goals. This can be addressed by promoting structural diversity, deadwood retention, habitat trees and native species regeneration. However, habitat conservation is generally one of several objectives balanced within broader forest management priorities.
	Region	o	
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	Habitat provision is regulated through a comprehensive legal framework focused on biodiversity conservation. Laws such as the Federal Nature Conservation Act (BNatSchG) and the Bavarian Nature Conservation Law protect important habitats by restricting or guiding activities that could degrade these areas. Designations like Natura 2000 sites, nature reserves, and landscape protection areas impose varying degrees of management restrictions to preserve habitat quality. Forest management generally incorporates measures to maintain structural diversity, deadwood, and native species to support habitat-related ecosystem services. Overall, habitat provision is an important legal consideration that seeks to balance sustainable forest use with species and ecosystem conservation.
	Region	+	
The public is involved in decision-making processes considering FES	Country	o	There is no direct involvement of the public in decision-making regarding FES habitat provision, as far as we are aware. However there is of course public discussion that can have its influence. In several instances in the past, the establishment of a national park was changed or halted because of public resistance. Following the "Save the Bees" movement in 2019 and subsequent political discussions influenced by the BUND and other NGOs, the management of Bavarian State Forests (BaysF) shifted towards prioritizing biodiversity and ecosystem protection. As part of this shift, a new category of protected forests called " Naturwälder " (natural forests) was established. These currently cover approx. 83.000 hectares.
	Region	o	
Subsidies for maintaining (or restoring) FES	Country	+	WaldFöPR Program (Bavaria): Bavaria's Forest Promotion Program (WaldFÖR) offers subsidies specifically targeting measures that improve biodiversity and habitat structures in forests. This includes support for leaving deadwood or habitat trees, and fostering natural regeneration.
	Region	+	The FNR manages the " Climate-Adapted Forest Management " subsidy program, which supports forest owners in enhancing habitat provision as a key forest ecosystem service. The program funds measures like planting climate-resilient and diverse tree species, promoting natural regeneration, and improving forest structure to boost biodiversity and habitat quality. This helps integrate habitat conservation into sustainable forest management.
Grants for maintaining (or restoring) FES	Country	-	We are not aware of any grants for habitat provision as a FES.
	Region	-	
	Country	-	We are not aware of any payment schemes for habitat provision as a FES.

Feature	Level		Comments
Payment schemes for maintaining (or restoring) FES	Region	-	
Tax incentives for maintaining (or restoring) FES	Country	-	We are not aware of any tax incentives for habitat provision as a FES.
	Region	-	
Loans for maintaining (or restoring) FES	Country	-	We are not aware of any loans for habitat provision as a FES.
	Region	-	
Other benefits for maintaining (or restoring) FES	Country	-	We are not aware of any other benefits for habitat provision as a FES.
	Region	-	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	<p>Yes, forest owners are supported by various organizations on different levels.</p> <p>There are lobby organisations such as the Deutsche Forstwirtschaftsrat e.V. (DFWR), which represents forestry interests at the national level.</p> <p>Also on federal level similar organisations exists, with a focus on networking and lobbying, like the Bavarian forest owner's federation (https://www.bayer-waldbesitzerverband.de)</p> <p>The local forest administration (AELF) gives support for forest owners in navigating funding programs, including help with applications and compliance. Also they offer Workshops and personal advisory services.</p> <p>Forest owner associations provide help with getting contractors, selling timber and the practical aspects of forestry.</p> <p>Best portal in that regard might be offered by the Bavarian state: https://www.waldbesitzer-portal.bayern.de/unser_angebot/foerderung/index.html</p> <p>There a forest owner will find the forester responsible for his area and information regarding subsidies.</p> <p>The national and federal ministries also offer website that inform on subsidies (the information is in part redundant):</p> <ul style="list-style-type: none"> • Förderdatenbank (Funding Database): https://www.foerderdatenbank.de A comprehensive database maintained by the German government listing available subsidies, including programs for forestry across Germany. • Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten (StMELF): https://www.stmelf.bayern.de/ Contains information on Bavarian forestry subsidies and incentive programs, including the WaldFöR program.
	Region	+	
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+	<p>There are no widely established, formalized groups solely dedicated to habitat provision by forest owners in Bavaria or Germany.</p> <p>Habitat improvement typically happens as part of broader sustainable forest management efforts that can be supported by owner associations and subsidy programs.</p>
	Region	+	<p>Collaborative initiatives linked to protected areas like Natura 2000 involve landowner cooperation but are often project-based.</p>
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	<p>Many forest owner associations maintain mailing lists and newsletters that regularly distribute updates on policies, funding, market developments, and best practices. For example, regional Waldbesitzerverbände (forest owner associations) use email newsletters to reach their members.</p> <p>Institutions like the ForstHolz Cluster Bayern play a key role in bringing together actors from forest owners and enterprises to researchers and policymakers, across sectors such as forestry, wood processing, and bioeconomy. They foster collaboration and information sharing through events, working groups, and online resources.</p>
	Region	+	<p>There is also the Fachagentur Nachwachsende Rohstoffe (FNR), the German Agency for Renewable Resources, as a state-level actor offering</p>

Feature	Level		Comments
			seminars and educational events focused on sustainable forest biomass use and renewable resources. Their program of “ Wald-Seminare ” provides forest owners and managers with up-to-date knowledge on forest management (FNR Wald-Seminare Program).
Promotion: (Voluntary) certification and labelling programs	Country	o	Certification schemes like PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forest Stewardship Council) set standards for sustainable forest management, ensuring that timber is sourced responsibly. This builds trust among consumers, businesses, and policymakers regarding the sustainability of forest products. While FSC is adopted by only a small proportion of forest owners, PEFC is widely implemented through forest owner associations, making it more prevalent, though it is generally considered less strict.
	Region	o	By requiring integrated management that balances timber production, biodiversity conservation, soil, and water protection, certification programs support the holistic delivery of multiple ecosystem services, strengthening the overall value proposition of forests. Neither certification offers direct markets for ecosystem services beyond timber production, but they provide incentives to improve other forest ecosystem services. Certification also raises awareness and encourages forest owners and supply chain actors to engage in sustainable practices.
Multidisciplinary approach	Country	o	There are events organized around the topic of forest and timber (biomass) that bring together stakeholders from these fields. Examples include the International Forest Fair (INTERFORST) , other regional forest days, the Bayerische Waldbesitzertag (Bavarian Forest Owners' Day) , and various conferences hosted by the ForstHolz Cluster Bayern or the Bayerische Landesanstalt für Wald und Forstwirtschaft (LWF) . These events facilitate networking, knowledge exchange, and collaboration among forest owners, industry representatives, scientists, and policymakers. However, we are not aware of events or organizations that regularly transcend these sectors to include broader interdisciplinary or cross-sectoral participation.
	Region	o	

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Protection against natural hazards, Germany, region: Bayern

Feature	Level		Comments
FES mapping	Country	+	Forestry authorities, spatial planners, civil protection agencies, municipalities use these maps to manage forests, plan land use, prepare for emergencies, and balance hazard protection with ecology. High-risk zones identified on maps may have building restrictions. Subsidies are available for forest management measures enhancing hazard protection through programs like Bavaria's WaldFöPR .
	Region	+	Hazard maps are primarily accessible via federal state sources: <ul style="list-style-type: none"> - The Bavarian Environment Agency (LfU) Geoportal with avalanche, flood, and landslide maps. Availability and detail vary by region and hazard type, but most forests and planning stakeholders have access.
Standardized methodology for FES assessment	Country	-	Assessments are conducted by the regional forest authorities (Bavarian offices for agriculture and forestry), following official guidelines. Mainly official forestry staff are responsible, but landowners and sometimes local experts may be included, especially for field surveys or specific issues. The protocols and criteria (including mapping standards) are officially published, mainly in Bavarian forest law (https://www.gesetze-bayern.de/Content/Document/BayVwV9741S/true), implementing regulations, and technical guidelines from the State Institute for Forestry. These documents are generally accessible via Bavarian government and forestry authority websites.
	Region	+	
	Country	+	

Feature	Level		Comments
Legal documents addressing FES	Region	+	The Bavarian Forest Act (BayWaldG) includes hazard protection to reduce risks from natural dangers like avalanches, floods, and storms. It ensures forests are managed to safeguard people, settlements, and infrastructure while maintaining ecological stability.
Management plans addressing FES	Country	o	Forest management plans in Germany and Bavaria incorporate hazard protection by promoting forest structures that stabilize slopes and reduce risks like floods and avalanches. Spatial and regional planning documents use hazard maps to guide safe land use and infrastructure development. Coordination between forestry, planning, and disaster management ensures hazard protection is integrated across sectors.
	Region	o	
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	Hazard protection forest management is regulated in the forest law. Local authorities should be aware of the importance of protection forest so that we don't conclude that this FES is at risk.
	Region	+	
The public is involved in decision-making processes considering FES	Country	-	We are not aware of any public decision-making regarding hazard protection forests.
	Region	-	
Subsidies for maintaining (or restoring) FES	Country	o	Forest owners in Bavaria can access subsidies through the WaldFöPR , which supports forest management measures enhancing natural hazard protection, such as stabilizing slopes, restoring protective forest stands, and planting climate-adapted tree species. For public forests , those managed by Bayerische Staatsforsten (BaySF) , funding and management activities are typically covered through public budgets and internal forest management planning rather than subsidy programs. However, public forest enterprises may also collaborate on projects or receive targeted funding for particular hazard protection measures.
	Region	+	
Grants for maintaining (or restoring) FES	Country	-	We are not aware of any grants for hazard protection forests.
	Region	-	
Payment schemes for maintaining (or restoring) FES	Country	-	We are not aware of any tax incentives for hazard protection forests.
	Region	-	
Tax incentives for maintaining (or restoring) FES	Country	-	We are not aware of any tax incentives for hazard protection forests.
	Region	-	
Loans for maintaining (or restoring) FES	Country	-	We are not aware of any loans for hazard protection forests.
	Region	-	
Other benefits for maintaining (or restoring) FES	Country	-	We are not aware of any other benefits for hazard protection forests.
	Region	-	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	<p>Yes, forest owners are supported by various organizations on different levels.</p> <p>There are lobby organisations such as the Deutsche Forstwirtschaftsrat e.V. (DFWR), which represents forestry interests at the national level. Also on federal level similar organisations exists, with a focus on networking and lobbying, like the Bavarian forest owner's federation (https://www.bayer-waldbesitzerverband.de)</p>
	Region	+	<p>The local forest administration (AELF) gives support for forest owners in navigating funding programs, including help with applications and compliance. Also they offer Workshops and personal advisory services.</p> <p>Forest owner associations provide help with getting contractors, selling timber and the practical aspects of forestry.</p> <p>Best portal in that regard might be offered by the Bavarian state: https://www.waldbesitzer-portal.bayern.de/unser_angebot/foerderung/index.html</p>

Feature	Level	Comments
		<p>There a forest owner will find the forester responsible for his area and information regarding subsidies.</p> <p>The national and federal ministries also offer website that inform on subsidies (the information is in part redundant):</p> <ul style="list-style-type: none"> • Förderdatenbank (Funding Database): https://www.foerderdatenbank.de A comprehensive database maintained by the German government listing available subsidies, including programs for forestry across Germany. <p>Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten (StMELF): https://www.stmelf.bayern.de/ Contains information on Bavarian forestry subsidies and incentive programs, including the WaldFör program.</p>
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	<p>+ Joint efforts among forest owners specifically targeting natural hazard protection forests do exist but are relatively limited and tend to be regionally focused.</p>
	Region	<p>+ Forest owners in hazard-prone zones sometimes form localized groups or agreements—often facilitated by forestry offices (AELFs)—to implement coordinated measures like stabilizing protective forest belts and restoring degraded stands on steep slopes.</p>
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	<p>+ Many forest owner associations maintain mailing lists and newsletters that regularly distribute updates on policies, funding, market developments, and best practices. For example, regional Waldbesitzerverbände (forest owner associations) use email newsletters to reach their members.</p> <p>Institutions like the ForstHolz Cluster Bayern play a key role in bringing together actors from forest owners and enterprises to researchers and policymakers, across sectors such as forestry, wood processing, and bioeconomy. They foster collaboration and information sharing through events, working groups, and online resources.</p>
	Region	<p>+ There is also the Fachagentur Nachwachsende Rohstoffe (FNR), the German Agency for Renewable Resources, as a state-level actor offering seminars and educational events focused on sustainable forest biomass use and renewable resources. Their program of “Wald-Seminare” provides forest owners and managers with up-to-date knowledge on forest management (FNR Wald-Seminare Program).</p>
Promotion: (Voluntary) certification and labelling programs	Country	<p>o Certification schemes like PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forest Stewardship Council) set standards for sustainable forest management, ensuring that timber is sourced responsibly. This builds trust among consumers, businesses, and policymakers regarding the sustainability of forest products.</p> <p>While FSC is adopted by only a small proportion of forest owners, PEFC is widely implemented through forest owner associations, making it more prevalent, though it is generally considered less strict.</p>
	Region	<p>o By requiring integrated management that balances timber production, biodiversity conservation, soil, and water protection, certification programs support the holistic delivery of multiple ecosystem services, strengthening the overall value proposition of forests.</p> <p>Neither certification offers direct markets for ecosystem services beyond timber production, but they provide incentives to improve other forest ecosystem services.</p> <p>Certification also raises awareness and encourages forest owners and supply chain actors to engage in sustainable practices.</p>
Multidisciplinary approach	Country	<p>o There are events organized around the topic of forest and timber (biomass) that bring together stakeholders from these fields. Examples include the International Forest Fair (INTERFORST), other regional forest days, the Bayerische Waldbesitzertag (Bavarian Forest Owners' Day), and various conferences hosted by the ForstHolz Cluster Bayern or the Bayerische Landesanstalt für Wald und Forstwirtschaft (LWF). These events facilitate networking, knowledge exchange, and collaboration among forest owners,</p>
	Region	

Feature	Level	Comments
		industry representatives, scientists, and policymakers. However, we are not aware of events or organizations that regularly transcend these sectors to include broader interdisciplinary or cross-sectoral participation.

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Tourism and recreation, Germany, region: Bayern

Feature	Level	Comments
FES mapping	Country	o Mapping is available from Research project »Atlas der Ökosystemleistungen Bayern«. Mapping for recreation as an ecosystem service can also be available but varies in detail and scope from local tourist areas. It mostly focuses on infrastructure such as hiking trails, biking paths, and recreational facilities rather than directly mapping recreational ecosystem services like experience quality or ecosystem benefits. Some regional or municipal planning authorities produce maps showing recreational hotspots, trail networks, and protected areas accessible to the public. Additionally, broader ecosystem service mapping projects may include recreation as one component, using proxies like accessibility, landscape attractiveness, or visitor numbers.
	Region	+
Standardized methodology for FES assessment	Country	- Unlike timber or environmental parameters, recreation is rarely assessed through standardized, formal procedures by forestry authorities. Instead, assessments tend to be project-based or research-driven, carried out by universities, regional planning bodies, tourism organizations, or occasionally forestry agencies as part of broader ecosystem service studies.
	Region	-
Legal documents addressing FES	Country	+
	Region	+
Management plans addressing FES	Country	- Forest management plans primarily focus on timber production and ecological sustainability. While recreation is recognized as a forest function, it is typically mentioned only briefly and lacks detailed management prescriptions. Explicit, operational planning for recreation is usually handled outside forest management plans, often by municipalities or tourism authorities. There is no uniform requirement to integrate comprehensive recreation management within standard forest management plans.
	Region	o
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+
	Region	+
The public is involved in decision-making processes considering FES	Country	- We are not aware of any public decision-making regarding recreational use of forests.
	Region	-
Subsidies for maintaining (or restoring) FES	Country	- There are subsidies that the state-owned forests can get to provide additional measures to improve the recreational value of forests. Private forest owners have no excess to such subsidies.
	Region	o
Grants for maintaining (or restoring) FES	Country	- We are not aware of any grants for recreation as a FES.
	Region	-
	Country	- We are not aware of any payment schemes for recreation as a FES.

Feature	Level		Comments
Payment schemes for maintaining (or restoring) FES	Region	-	
Tax incentives for maintaining (or restoring) FES	Country	-	We are not aware of any tax incentives for recreation as a FES.
	Region	-	
Loans for maintaining (or restoring) FES	Country	-	We are not aware of any loans for recreation as a FES.
	Region	-	
Other benefits for maintaining (or restoring) FES	Country	-	We are not aware of any other benefits for recreation as a FES.
	Region	-	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	Yes, forest owners are supported by various organizations on different levels.
	Region	+	<p>There are lobby organisations such as the Deutsche Forstwirtschaftsrat e.V. (DFWR), which represents forestry interests at the national level.</p> <p>Also on federal level similar organisations exists, with a focus on networking and lobbying, like the Bavarian forest owner's federation (https://www.bayer-waldbesitzerverband.de)</p> <p>The local forest administration (AELF) gives support for forest owners in navigating funding programs, including help with applications and compliance. Also they offer Workshops and personal advisory services.</p> <p>Forest owner associations provide help with getting contractors, selling timber and the practical aspects of forestry.</p> <p>Best portal in that regard might be offered by the Bavarian state: https://www.waldbesitzer-portal.bayern.de/unser_angebot/foerderung/index.html</p> <p>There a forest owner will find the forester responsible for his area and information regarding subsidies.</p> <p>The national and federal ministries also offer website that inform on subsidies (the information is in part redundant):</p> <ul style="list-style-type: none"> • Förderdatenbank (Funding Database): https://www.foerderdatenbank.de A comprehensive database maintained by the German government listing available subsidies, including programs for forestry across Germany. • Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten (StMELF): https://www.stmelf.bayern.de/ Contains information on Bavarian forestry subsidies and incentive programs, including the WaldFöR program.
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+	Many private forest owners are members of a local forest association. While their focus is timber-related, they sometimes coordinate on infrastructure measures, such as trail maintenance.
	Region	+	
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	<p>Many forest owner associations maintain mailing lists and newsletters that regularly distribute updates on policies, funding, market developments, and best practices. For example, regional Waldbesitzerverbände (forest owner associations) use email newsletters to reach their members.</p> <p>Institutions like the ForstHolz Cluster Bayern play a key role in bringing together actors from forest owners and enterprises to researchers and policymakers, across sectors such as forestry, wood processing, and bioeconomy. They foster collaboration and information sharing through events, working groups, and online resources.</p> <p>There is also the Fachagentur Nachwachsende Rohstoffe (FNR), the German Agency for Renewable Resources, as a state-level actor offering seminars and educational events focused on sustainable forest biomass use and renewable resources. Their program of “Wald-Seminare” provides</p>
	Region	+	

Feature	Level		Comments
			forest owners and managers with up-to-date knowledge on forest management (FNR Wald-Seminare Program)
Promotion: (Voluntary) certification and labelling programs	Country	o	Certification schemes like PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forest Stewardship Council) set standards for sustainable forest management, ensuring that timber is sourced responsibly. This builds trust among consumers, businesses, and policymakers regarding the sustainability of forest products. While FSC is adopted by only a small proportion of forest owners, PEFC is widely implemented through forest owner associations, making it more prevalent, though it is generally considered less strict.
	Region	o	By requiring integrated management that balances timber production, biodiversity conservation, soil, and water protection, certification programs support the holistic delivery of multiple ecosystem services, strengthening the overall value proposition of forests. Neither certification offers direct markets for ecosystem services beyond timber production, but they provide incentives to improve other forest ecosystem services. Certification also raises awareness and encourages forest owners and supply chain actors to engage in sustainable practices.
Multidisciplinary approach	Country	o	There are events organized around the topic of forest and timber (biomass) that bring together stakeholders from these fields. Examples include the International Forest Fair (INTERFORST) , other regional forest days, the Bayerische Waldbesitzertag (Bavarian Forest Owners' Day) , and various conferences hosted by the ForstHolz Cluster Bayern or the Bayerische Landesanstalt für Wald und Forstwirtschaft (LWF) . These events facilitate networking, knowledge exchange, and collaboration among forest owners, industry representatives, scientists, and policymakers. However, we are not aware of events or organizations that regularly transcend these sectors to include broader interdisciplinary or cross-sectoral participation.
	Region	o	

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Water quality, Germany, region: Bayern

Feature	Level		Comments
FES mapping	Country	-	Mapping available from Research project <i>Atlas der Ökosystemleistungen Bayern</i> .
	Region	+	
Standardized methodology for FES assessment	Country	-	We are not aware of standardized methods for mapping.
	Region	-	
Legal documents addressing FES	Country	+	The provision of clean water as a Forest Ecosystem Service is addressed in key legal documents in Germany and Bavaria: <ul style="list-style-type: none"> • The Federal Water Act (Wasserhaushaltsgesetz – WHG) regulates water protection nationwide, recognizing forests' role in water quality and regulation. • The Bavarian Water Act (Bayerisches Wassergesetz – BayWG) sets state-level provisions for protecting water resources, including in forested areas. Federal and Bavarian Forest Acts promote sustainable management practices that protect soil and water.
	Region	+	
Management plans addressing FES	Country	-	Forest management plans can address water quality protection if that is an important issue due to a water protection area.
	Region	o	
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	There are sufficient laws protecting the ability of forest to improve water quality.
	Region	+	If a water protection area is present (normally in areas where drinking water is sourced) a Wasserschutzgebietsverordnung (water protection area)

Feature	Level	Comments
		ordinance) sets specific regulations tailored individually for each designated area, reflecting local conditions and risks. These regulations can include forestry-specific rules, such as prohibiting clear cuts and requiring measures to prevent oil spills from heavy machinery.
The public is involved in decision-making processes considering FES	Country	- We are not aware of any public decision-making regarding recreational use of forests.
	Region	-
Subsidies for maintaining (or restoring) FES	Country	- We are not aware of direct subsidies for measures to improvement water quality. However there are general forest subsidies that can be beneficial to that cause.
	Region	-
Grants for maintaining (or restoring) FES	Country	- We are not aware of any grants for improving water quality as a FES.
	Region	-
Payment schemes for maintaining (or restoring) FES	Country	- We are not aware of any payment schemes for improving water quality as a FES.
	Region	-
Tax incentives for maintaining (or restoring) FES	Country	- We are not aware of any tax incentive for improving water quality as a FES.
	Region	-
Loans for maintaining (or restoring) FES	Country	- We are not aware of any loans for improving water quality as a FES.
	Region	-
Other benefits for maintaining (or restoring) FES	Country	- We are not aware of any other benefits for improving water quality as FES.
	Region	-
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+ Yes, forest owners are supported by various organizations on different levels. There are lobby organisations such as the Deutsche Forstwirtschaftsrat e.V. (DFWR) , which represents forestry interests at the national level. Also, on federal level similar organisations exists, with a focus on networking and lobbying, like the Bavarian forest owner's federation (https://www.bayer-waldbesitzerverband.de) The local forest administration (AELF) gives support for forest owners in navigating funding programs, including help with applications and compliance. Also, they offer Workshops and personal advisory services. Forest owner associations provide help with getting contractors, selling timber and the practical aspects of forestry. Best portal in that regard might be offered by the Bavarian state: https://www.waldbesitzer-portal.bayern.de/unser_angebot/foerderung/index.html
	Region	+ There a forest owner will find the forester responsible for his area and information regarding subsidies. The national and federal ministries also offer website that inform on subsidies (the information is in part redundant): <ul style="list-style-type: none">• Förderdatenbank (Funding Database): https://www.foerderdatenbank.de A comprehensive database maintained by the German government listing available subsidies, including programs for forestry across Germany.• Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten (StMELF): https://www.stmelf.bayern.de/ Contains information on Bavarian forestry subsidies and incentive programs, including the WaldFöR program.
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	- We are not aware of widespread collaborations among forest owners specifically focused on water quality improvement as a FES. Exceptions exist in certain projects aimed at enhancing water quality by improving soil conditions, such as through the planting of deciduous trees.
	Region	-

Feature	Level	Comments
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+ Many forest owner associations maintain mailing lists and newsletters that regularly distribute updates on policies, funding, market developments, and best practices. For example, regional Waldbesitzerverbände (forest owner associations) use email newsletters to reach their members. Institutions like the ForstHolz Cluster Bayern play a key role in bringing together actors from forest owners and enterprises to researchers and policymakers, across sectors such as forestry, wood processing, and bioeconomy. They foster collaboration and information sharing through events, working groups, and online resources.
	Region	+ There is also the Fachagentur Nachwachsende Rohstoffe (FNR) , the German Agency for Renewable Resources, as a state-level actor offering seminars and educational events focused on sustainable forest biomass use and renewable resources. Their program of “ Wald-Seminare ” provides forest owners and managers with up-to-date knowledge on forest management (FNR Wald-Seminare Program)
Promotion: (Voluntary) certification and labelling programs	Country	o Certification schemes like PEFC (Programme for the Endorsement of Forest Certification) and FSC (Forest Stewardship Council) set standards for sustainable forest management, ensuring that timber is sourced responsibly. This builds trust among consumers, businesses, and policymakers regarding the sustainability of forest products. While FSC is adopted by only a small proportion of forest owners, PEFC is widely implemented through forest owner associations, making it more prevalent, though it is generally considered less strict.
	Region	o By requiring integrated management that balances timber production, biodiversity conservation, soil, and water protection, certification programs support the holistic delivery of multiple ecosystem services, strengthening the overall value proposition of forests. Neither certification offers direct markets for ecosystem services beyond timber production, but they provide incentives to improve other forest ecosystem services. Certification also raises awareness and encourages forest owners and supply chain actors to engage in sustainable practices.
Multidisciplinary approach	Country	o There are events organized around the topic of forest and timber (biomass) that bring together stakeholders from these fields. Examples include the International Forest Fair (INTERFORST) , other regional forest days, the Bayerische Waldbesitzertag (Bavarian Forest Owners' Day) , and various conferences hosted by the ForstHolz Cluster Bayern or the Bayerische Landesanstalt für Wald und Forstwirtschaft (LWF) . These events facilitate networking, knowledge exchange, and collaboration among forest owners, industry representatives, scientists, and policymakers. However, we are not aware of events or organizations that regularly transcend these sectors to include broader interdisciplinary or cross-sectoral participation.
	Region	o

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Biomass, Germany, region: Bayern

Feature	Level	Comments
FES mapping	Country	+ Mapping available from Research project Atlas der Ökosystemleistungen Bayern .
	Region	+ The National Forest Inventory (BWI) collects data on forest stock, utilization, and growth at the national level, with information available down to the federal state (Länder) level.
Standardized methodology for FES assessment	Country	+ The National Forest Inventory has its method for making forest inventories, which provide data on Biomass. This is done on country and federal state level.
	Region	+

Feature	Level		Comments
Legal documents addressing FES	Country	+	The Bavarian Forest Act (BayWaldG) supports biomass production to ensure sustainable forest use as a renewable resource. It regulates harvesting practices to balance economic benefits with long-term forest health and ecosystem protection. One key goal of the Forest Act is: "to secure and increase the production of wood and other natural resources through sustainable forest management."
	Region	+	
Management plans addressing FES	Country	+	Forest management plans (Forstwirtschaftspläne) explicitly include wood biomass production as a key objective. These plans set sustainable harvest levels aligned with the forest's growth rates to ensure long-term biomass supply, balancing economic use with ecological considerations. They specify harvesting methods, regeneration practices, and maintenance of forest health to support continuous biomass productivity.
	Region	+	
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	There are parts of several laws or guidelines that limit the biomass use in one way or the other. This could be the forest act, a Natura 2000 management plan or a forest management guideline like such by PEFC.
	Region	+	
The public is involved in decision-making processes considering FES	Country	-	There is no direct involvement of the public in decision-making regarding FES biomass production, as far as we are aware. However, there is of course public discussion that can have its influence. Following the "Save the Bees" movement of 2019 in Bavaria and related political discussions, influenced by BUND and other NGOs, the management of Bavarian State Forests (BaySF) shifted to prioritize biodiversity and ecosystem protection. As a result, forestry practices now balance biomass use with stronger conservation goals, reducing the sole focus on timber production.
	Region	o	
Subsidies for maintaining (or restoring) FES	Country	+	There are subsidies for forestry for private and municipal forests, provided by the federal state that covers activities such as planting, thinning, forest renewal, and infrastructure development. These subsidies aim to promote sustainable timber and biomass production while ensuring forest health and resilience.
	Region	+	At the federal level, the program Bundeswaldprämie provides financial support, while in Bavaria, the WaldFöPR offers targeted funding.
Grants for maintaining (or restoring) FES	Country	-	We are only aware of subsidies for forestry.
	Region	-	
Payment schemes for maintaining (or restoring) FES	Country	-	We are only aware of subsidies for forestry.
	Region	-	
Tax incentives for maintaining (or restoring) FES	Country	-	Income from forestry activities, including timber and biomass sales, is often treated as agricultural or forestry income for tax purposes, which can allow for certain deductions and favorable tax treatment such as reduced income tax rates under specific conditions.
	Region	-	
Loans for maintaining (or restoring) FES	Country	-	We are only aware of subsidies for forestry.
	Region	-	
Other benefits for maintaining (or restoring) FES	Country	-	We are only aware of subsidies for forestry.
	Region	-	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	Yes, forest owners are supported by various organizations on different levels. There are lobby organisations such as the Deutsche Forstwirtschaftsrat e.V. (DFWR) , which represents forestry interests at the national level. Also on federal level similar organisations exists, with a focus on networking and lobbying, like the Bavarian forest owner's federation (https://www.bayer-waldbesitzerverband.de) The local forest administration (AELF) gives support for forest owners in navigating funding programs, including help with applications and compliance. Also they offer Workshops and personal advisory services.
	Region	+	

Feature	Level	Comments
		<p>Forest owner associations provide help with getting contractors, selling timber and the practical aspects of forestry.</p> <p>Best portal in that regard might be offered by the Bavarian state: https://www.waldbesitzer-portal.bayern.de/unser_angebot/foerderung/index.html</p> <p>There a forest owner will find the forester responsible for his area and information regarding subsidies.</p> <p>The national and federal ministries also offer website that inform on subsidies (the information is in part redundant):</p> <ul style="list-style-type: none"> • Förderdatenbank (Funding Database): https://www.foerderdatenbank.de A comprehensive database maintained by the German government listing available subsidies, including programs for forestry across Germany. • Bayerisches Staatsministerium für Ernährung, Landwirtschaft und Forsten (StMELF): https://www.stmelf.bayern.de/ Contains information on Bavarian forestry subsidies and incentive programs, including the WaldFÖR program.
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	+
	Region	+
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+
	Region	+
Promotion: (Voluntary) certification and labelling programs	Country	o
	Region	o
Multidisciplinary approach	Country	o

Feature	Level		Comments
	Region	o	International Forest Fair (INTERFORST) , other regional forest days, the Bayerische Waldbesitzertag (Bavarian Forest Owners' Day) , and various conferences hosted by the ForstHolz Cluster Bayern or the Bayerische Landesanstalt für Wald und Forstwirtschaft (LWF) . These events facilitate networking, knowledge exchange, and collaboration among forest owners, industry representatives, scientists, and policymakers. However, we are not aware of events or organizations that regularly transcend these sectors to include broader interdisciplinary or cross-sectoral participation.

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Austria

Biodiversity and habitat maintenance, Austria, region: Styria

Feature	Level		Comments
FES mapping	Country	+	The maps are publicly available in the report . There are additional maps for riparian forests in different Federal States in this report .
	Region	-	
Standardized methodology for FES assessment	Country	+	The assessment was conducted by the Federal Environmental Agency. The methodology descriptions are publicly available in this report . Another report provides more details on indicator selection.
	Region	-	
Legal documents addressing FES	Country	+	Biodiversity Strategy Austria 2030+ Floodplain Strategy Austria 2030+ Federal Forest Strategy 2020+ National Energy- and Climate Plan Long-term strategy 2050 Austrian Forest Act Biodiversity strategy for Styria
	Region	+	
Management plans addressing FES	Country	+	Forest management plans, documents for planning and specific programming activities sector, specific strategies, documents related to spatial planning, tourism, and rural development.
	Region	+	
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	Unsustainable forest management practices are covered in all documents addressing FES.
	Region	+	
The public is involved in decision-making processes considering FES	Country	o	Public participation in FES-related decisions is primarily achieved through consultations, stakeholder forums, and public hearings, but remains limited in some areas.
	Region	o	
Subsidies for maintaining (or restoring) FES	Country	+	Private forest owners and associations National/regional example: https://www.waldfonds.at/
	Region	+	
Grants for maintaining (or restoring) FES	Country	+	Private forest owners and associations National/regional example: https://www.waldfonds.at/
	Region	+	
Payment schemes for maintaining (or restoring) FES	Country	o	Some pilot projects exploring payment schemes for biodiversity conservation are underway.
	Region	o	
Tax incentives for maintaining (or restoring) FES	Country	-	
	Region	-	
Loans for maintaining (or restoring) FES	Country	-	
	Region	-	
	Country	+	National Prize "Forest" , category Forest Wildlife Management

Feature	Level		Comments
Other benefits for maintaining (or restoring) FES	Region	-	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	+	Various regional forestry associations and business incubators provide support.
	Region	+	
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	o	Yes, some organisations offer information on FES, but the impact is not significant at the moment.
	Region	o	
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	Forest owner associations and forestry education centres offer information and training.
	Region	+	
Promotion: (Voluntary) certification and labelling programs	Country	-	
	Region	-	
Multidisciplinary approach	Country	+	There are various meetings throughout the year with a combined attendance of various players along the whole value chain.
	Region	+	

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

Carbon storage and sequestration, Austria, region: Styria

Feature	Level		Comments
FES mapping	Country	-	Map of organic carbon stock is available publicly (delivered as part of Dynamic Forest Typification initiative by the Provincial Government of Styria).
	Region	+	
Standardized methodology for FES assessment	Country	+	The assessment was conducted by the Federal Environmental Agency. The methodology descriptions are publicly available in this report . Another report provides more details on indicator selection.
	Region	-	
Legal documents addressing FES	Country	+	Floodplain Strategy Austria 2030+ Federal Forest Strategy 2020+ National Energy- and Climate Plan Long-term strategy 2050 The Austrian Strategy for Adaptation to Climate Change Climate Protection Act Styrian Climate and Energy Strategy
	Region	+	
Management plans addressing FES	Country	+	Forest management plans, documents for planning and specific programming activities sector, specific strategies, documents related to spatial planning, tourism, and rural development.
	Region	+	
Norms or laws that aim at limiting actions with a negative environmental effect	Country	+	Unsustainable forest management practices are covered in all documents addressing FES.
	Region	+	

Feature	Level		Comments
The public is involved in decision-making processes considering FES	Country	o	Public participation in FES-related decisions is primarily achieved through consultations, stakeholder forums, and public hearings, but remains limited in some areas.
	Region	o	
Subsidies for maintaining (or restoring) FES	Country	+	Private forest owners and associations National/regional example: https://www.waldfonds.at/
	Region	+	
Grants for maintaining (or restoring) FES	Country	+	Private forest owners and associations National/regional example: https://www.waldfonds.at/
	Region	+	
Payment schemes for maintaining (or restoring) FES	Country	o	Some pilot projects exploring payment schemes for carbon sequestration are underway.
	Region	o	
Tax incentives for maintaining (or restoring) FES	Country	-	
	Region	-	
Loans for maintaining (or restoring) FES	Country	-	
	Region	-	
Other benefits for maintaining (or restoring) FES	Country	+	<u>National Prize "Forest"</u> , category Climate-adapted forest management
	Region	-	
Organizations helping forest owners get finance incentives or helping with administration, applying for a call for proposals, entrepreneurship	Country	-	
	Region	-	
Forest owner association and joint action mechanisms for forest owners in the field of FES	Country	o	Yes, some organisations offer information on FES, but the impact is not significant at the moment.
	Region	o	
Information and knowledge: instruments aimed at sharing information and sectorial knowledge among stakeholders involved	Country	+	Forest owner associations and forestry education centres offer information and training.
	Region	+	
Promotion: (Voluntary) certification and labelling programs	Country	-	
	Region	-	
Multidisciplinary approach	Country	+	There are various meetings throughout the year with a combined attendance of various players along the whole value chain.
	Region	+	

The symbols plus +, circle o, or minus - shows whether a specific feature or condition is present, partially present, or absent at both regional and national levels for each FES.

4 Workshop

Description of the workshop

At the partners' meeting in Munich in May 2025, Slovenia Forest Service representatives lead the workshop with all partners on FES-related policies. During the project, partners had worked extensively on policy in various activities and have gained insight into the state of policy for FES in the countries and regions in which they are working.

Slovenia Forest Service representatives conducted a *workshop of international experts. The H-form method was used analyse "How are politics addressing FES markets in the Alpine region?"* The method consists of individual and group work. Participants were deliberately divided into mixed-nationality groups which enables better confrontation of different opinions and debate between participants.

First, each participant individually rated the current situation about politics addressing FES markets in the Alpine region on a scale from 0 to 10, where 0 represented policies not addressing the FES and 10 represented an ideal state. Then, each participant listed (post-it papers) three reasons why he/she did not give a score of 10 (highlighting **weaknesses**) and three reasons why he/she did not give a score of 0 (highlighting **positive aspects**).

Afterward, group work began. Each group discussed the positive aspects and weaknesses and agreed on a common group score.

Each group together proposed four suggestions to improve the situation so that the overall score could be moved closer to 10.



Figure 1: Work in groups

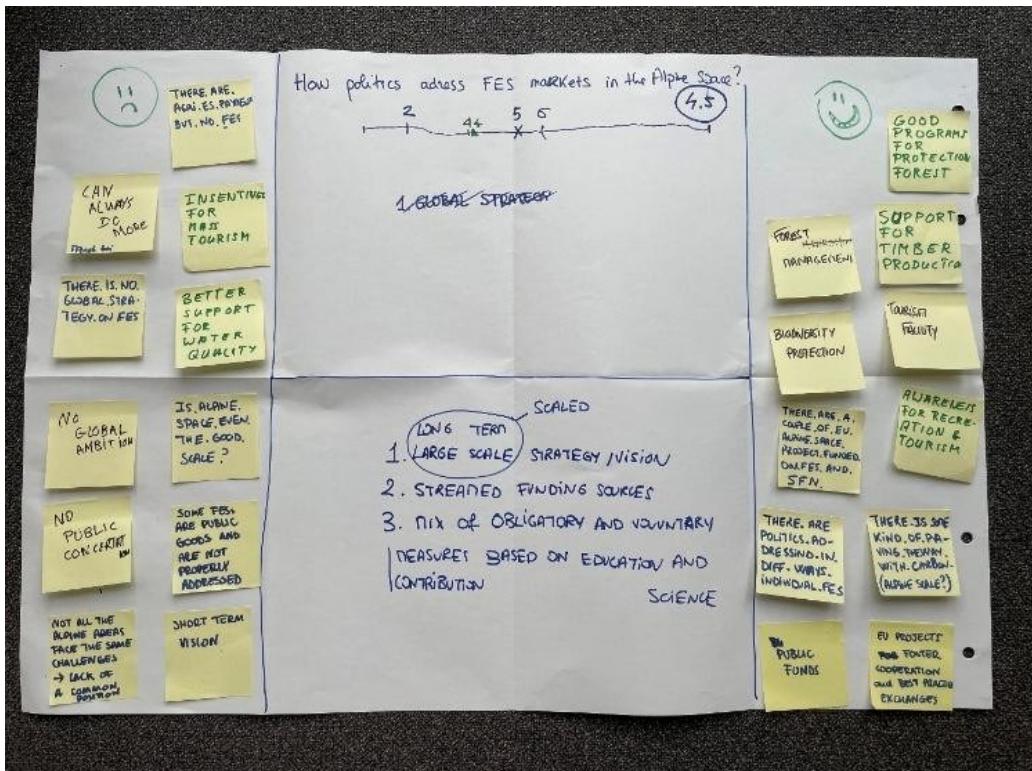


Figure 2: Example of group work on question "How politics address FES markets in Alpine region", individual grades for situation, common group grade, positive aspects and weaknesses and proposals for improvements

The groups then presented their results to the rest of the partners and a joined discussion followed.



Figure 3: Presentation of group work

All the proposals were then compiled into a common list of proposals and voting method followed for ranking the suggestions for improving policy. Each participant individually evaluated and prioritized the proposals, selecting the three most important proposals. The final list of proposals represented the prioritized proposals according to the joined estimation of all participants.



Figure 4: Individual voting for proposals

SS

D 3.1.1 Inventory of policies addressing barriers and incentivizing FES markets

Result of workshop

Common group grades

On the scale from 0 (not addressed) to 10 (fully addressed) each group evaluated how is politics addressing FES markets in the Alpine region. **The common groups' grades were:**

3	4.5	3.75	4.5
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The average grade among groups was **3.94**. These consistently low scores, none above 4.5, highlighted a shared perception that current policies are largely inadequate in supporting FES markets.

Weaknesses

Listed negative aspects in politics addressing FES markets in the Alpine region:

- Lack of global strategy and ambition on FES
- Only short-term vision about FES
- Lack of common ground, baseline and objectives (since not all the Alpine areas face the same challenges)
- Lack of specialized people
- Insufficient depth of analysis of the issue, considering of mountain specificities
- Not addressing the externalities (lack of understanding FES functioning)
- Lack of certification process
- No integrated data system
- No solid framework for stakeholders
- FES are no mainstream policy topic
- FES are not that profitable and are less mentioned
- FES markets are a difficult concept demanding multisectoral cooperation
- Too much conservation of FES and not enough valorisation of FES (with supportive measures)
- Bureaucratic complexity
- Lots of talking, but no action
- Few space left to private action for FES
- Many areas are not targeted/covered as FES markets
- Lack of funding for FES
- The lack of forest income linked to adaptive management for special FES is rarely compensated

- Some FES are public goods and are not properly addressed
- Payment schemes are far from sufficiently developed
- Payment schemes are optional
- Lack of clear incentives to test FES schemes
- Incentives for things in contradiction with FES, f. e. mass tourism
- Poor engagement of non-industrial forest owners
- Small forest owners are in disadvantage
- Non-wood FES management does not require legal regulation. mostly not legally requires
- Not important subject for public

Positive aspects

Listed positive aspects in politics addressing FES markets in the Alpine region:

- Some FES are important due to current situation (Importance of recreation and tourism in, Importance of biomass as renewable resource)
- FES are an actual topic, some FES are addressed, lots of discussing
- Higher demand for sustainable solutions, nature-based solutions
- Non-provisional FES are getting in the picture of FES market
- There are a couple of Alpine space projects funded on FES which foster cooperation and best practice exchanges
- There are some existing policies for some FES
- Existing FES mapping on country scale
- FES assessment in forest management plans at least
- Management of some FES is not bad (f. e. Water protection, nature conservation, carbon, protection)
- Sustainable forest management
- Objectives in strategies for FES
- Regulation effort (for some FES)
- There are some functioning FES markets (f. e. timber and recreation)
- There are some public funding and programs of FES (f. f. biodiversity, natural hazards)
- There are some initiatives (f. e. cultural, green chemistry and educational initiatives)
- Forest actors' empowerment

Proposals

The proposals which were voted the most important were contacted with long-term large-scale strategy/vision, boost FES markets, penalize anti-FES markets, legislative renovation and simplification, continuous funding sources.

Table 1: Proposal for improvement of politics addressing FES markets in Alpine region

Proposal	Votes
Long-term large-scale strategy/vision	8
Continuous funding sources	6
Boost FES markets, penalize anti-FES markets	7
Legislative renovation and simplification	6
Good examples-cases	5
Consider positive externalities	5
Integration of experts in policy groups	4
Capacity building dedicated to politicians	4
Cooperation and technical support	3
Support public services and institutions	3
Raising awareness and education	3
Definition of obligatory and voluntary measures	3

Workshop Summary

The workshop encouraged partners to consolidate their knowledge on policies related to FES markets. Participants identified strengths, weaknesses, and proposed recommendations to improve the current situation about politics addressing FES markets in the Alpine region. Overall, most participants agreed that the current FES market policy framework is insufficient, giving it an average rating of 4.94 out of 10 across the groups. Several reasons were cited for this low rating: FES are not yet a mainstream policy topic, they are not perceived as highly profitable, and there is a general lack of understanding of how FES function due to the complexity of the topic. Furthermore, there are numerous specific regional specificities in the Alpine region, and significant differences among individual FES. A broader overarching goal is currently missing. Among the positive aspects participants identified were: growing demand for sustainable and nature-based solutions, and the existence of some policies and initiatives that support certain FES. Participants proposed several key recommendations to improve the situation. The most highly rated were: Development of a long-term, large-scale strategy and vision, boosting the development of FES markets and penalize anti-FES markets, establishing continuous funding mechanisms and legislative renovation and simplification.

The workshop was well received by the partners. The process helped to clearly highlight both the positive and negative aspects of the current situation and to define concrete suggestions for future

work. For many participants, the working method was new and engaging. Participants were particularly interested in how much valuable information could be gathered through such an approach.

5 Conclusions

Policies define the legal framework for our action. It is essential to understand them for any activity, including FES markets and payment schemes.

In the development of FES markets and payment schemes in pilot areas, we encountered regulatory barriers and intensifying policy actions. This deliverable presents an inventory of relevant policies across countries for selected FES and therefore can serve as a practical tool to identify areas and countries requiring further improvement.

Because detailed examples are also included, the deliverable can act as a collection of best practices and ideas for future interventions. The outcomes of the workshop can serve as a foundation for planning further measures and setting priorities to improve FES markets. Additionally, the outcomes of the workshop can support communication and engagement with policymakers.

