

## Supplementary Materials

# The semisystematic Literature review research process

**Table S1.** Searches and results for the semisystematic Literature review.

Search "blocks"	Query string	Date	Filtered results	n° selected by Title	n° selected by Abstract	Duplicates	n° Full reading	n° ELIGIBLE ARTICLES
Block 1	Organi?ation W/3 model AND forest	13-lug-21	73	18	10	0	10	6
Block 1	Forest AND actor* OR stakeholder* W/1 organi?ation	16-lug-21	181	26	12	0	8	6
Block 1	forest AND business W/1 ecosystem*	21-lug-21	158	20	7	0	4	4
Block 1	Forest AND company OR firm OR enterprise OR business W/1 organi?ation	05-ago-21	55	16	6	1	4	2
Block 1	forest* AND organi?ation* AND review AND actors OR firm OR compan* OR enterprise	24-ago-21	91	9	9	1	8	5
Block 2	Forest* AND organi?ation* W/1 model	20-set-21	33	13	5	3	0	0
Block 2	forest* AND organi?ation* W/1 form	20-set-21	37	11	4	0	3	2
Block 2	forest* AND organi?ation* W/1 type	20-set-21	29	10	6	1	3	2
Block 2	forest* AND organi?ation* W/1 governance	21-set-21	15	8	1	0	0	0
Block 2	Forest AND governance W/1 structure	24-ago-21	153	24	5	2	1	1
Block 2	forest* AND business W/1 model	21-set-21	129	48	27	2	9	9
Block 3	forest* AND owner* W/1 organi?ation OR association	22-set-21	74	17	12	3	9	6
Block 3	model W/1 forest* AND organi?ation	22-set-21	128	14	2	0	2	1
Block 3	Community W/1 forest AND organi?ation	22-set-21	93	14	2	1	1	1
Block 3	Forest AND Social W/1 enterprise AND organi?ation	22-set-21	10	6	3	2	1	1
Block 3	Forest W/1 enterprise AND organi?ation	22-set-21	77	20	12	6	6	3
Block 3	Forest W/1 harvest* AND organi?ation	22-set-21	62	4	2	1	1	1
Block 3	Forest W/1 firm AND organi?ation	22-set-21	18	6	3	0	3	2
Block 3	Forest W/1 common* AND organi?ation	22-set-21	42	6	1	0	1	1
Block 3	Forest W/1 cooperative* AND organi?ation	22-set-21	21	14	5	1	4	3
Block 3	Forest W/1 ENGO* AND organi?ation	27-mar-22	2	1	1	0	1	1
Block 3	Forest W/2 consorti* AND organi?ation	22-set-21	1	1	1	0	1	1
Block 4	Forest W/2 contract* AND organi?ation	22-ott-21	14	5	0	0	0	0
Block 4	Forest W/2 network* AND organi?ation	22-ott-21	53	15	6	1	4	4
Block 4	Forest W/2 partnership* AND organi?ation	22-ott-21	26	17	4	2	2	1
Block 4	Forest AND collaboration AND organi?ation	27-ott-21	171	41	4	1	3	2
Block 4	Forest W/1 alliance* AND organi?ation	22-ott-21	6	4	0	0	0	0
Block 4	Forest W/1 agreement* AND organi?ation	15-dic-21	13	9	3	0	3	0
Block 4	forest* AND supply W/1 chain W/1 organi?ation	22-set-21	2	2	1	0	1	1
TOTAL number of articles resulting after search and selections			1767	399	154	28	93	66

**Table S2.** List of eligible articles selected at the end of the semisystematic literature review process.

Search block	Title	Journal	First Author	Year	ORG Categories found	Study area
1	Common property organizations as actors in rural development: A case study of a mountain area in Italy	International Journal of the Commons	Bassi, I.	2016	CFs	Italy
1	Comparing polycentric configuration for adaptive governance within community forests: Case studies in Eastern North America	International Journal of the Commons	Bissonnette, J.F.	2018	CFs	Eastern North America + General
1	Evolution of Community-Based Enterprise Governance Over Time: Lessons Learned from the Maya Biosphere Reserve	Small-Scale Forestry	Butler, M.	2021	CFs	World
1	Hybridity and integration in local collective action: an analytical framework	International Review of Administrative Sciences	Divay, G.	2018	n.e.	General
1	Forest harvesting entrepreneurs, perception of their business status and its influence on performance evaluation	Forest Policy and Economics	Drolet, S.	2010	FEs	Canada

1	‘Sharing the space’ in the agricultural knowledge and innovation system: multi-actor innovation partnerships with farmers and foresters in Europe	Journal of Agricultural Education and Extension	Fieldsend, A.F.	2021	n.e.	EU
1	Payments for forest environmental services: Organizational models and related experiences in Italy	I Forest	Gatto, P.	2009	Others	Italy
1	What can we learn from business models in the European forest sector: Exploring the key elements of new business model designs	Forest Policy and Economics	Kajanus, M.	2019	n.e.	General
1	Management Goals and Performance: Clustering State Forest Management Organizations in Europe with Multivariate Statistics	Forestry	Liubachyna, A.	2017	SFMOs	Europe
1	Social innovation in the Welsh Woodlands: Community based forestry as collective third-sector engagement	Forest Policy and Economics	Ludvig, A.	2018	SFEs	Wales
1	Different organizational models of private forest owners as a possibility to increase wood mobilization in Slovenia and Serbia	Croatian Journal of Forest Engineering	Malovrh, Š.P.	2017	PFOOs	Slovenia and Serbia
1	Organization of private forest sector in Timok forest area	Annals of Forest Research	Milijic, V.	2010	PFOOs	Serbia
1	The organization of nature conservation in state-owned forests in Poland and expectations of Polish stakeholders	Forests	Referowska-Chodak, E.	2020	SFMOs	Poland
1	Coopetition Strategy—When is it Successful? Empirical Evidence on Innovation and Market Performance	British Journal of management	Ritala, P.	2012	Forest firm	Finland
1	Critical success factors for small and medium forest enterprises: A review	Forest Policy and Economics	Sanchez Badini, O.	2018	FEs	General (Developing countries)
1	Failures of political decentralization in promoting network governance in the forest sector: Observations from Italy	Land Use Policy	Secco, L.	2017	SFMOs	Italy
1	Net-system’ models versus traditional models in NWFP marketing: The case of mushrooms	Small-Scale Forestry	Secco, L.	2009	Others	Italy
1	The effect of entrepreneurial and learning orientations on financial performance in a transition economy: evidence from forest contracting firms in southern Poland	Scandinavian Journal of Forest Research	Sikora, A.	2016	FEs	Poland
1	Current Status and Perspectives of Forestry Entrepreneurship in Croatia	South-East European Forestry	Šporčić, M.	2017	FEs	Croatia
1	Climate change governance in forestry and nature conservation in selected forest regions in Serbia: Stakeholders classification and collaboration	International Review of Administrative sciences	Stanišić, M.	2021	n.e.	Serbia
1	Organization types and corporate social responsibility reporting in Finnish forest industry	Social Responsibility Journal	Tuominen, P.	2008	FEs	Finland
1	Transaction cost theory of the firm and community forestry enterprises	Forest Policy and Economics	Vega, D.C.	2014	CFs	Mexico + General
1	Innovation governance in the forest sector: Reviewing concepts, trends and gaps	Forest Policy and Economics	Weiss, G.	2021	n.e.	General
2	Supporting changes in the Slovenian wood sector by introducing timber logistics centers	International Journal of Globalization and Small Business	Cvathe, T.	2015	FEs	Slovenia
2	The Effects of Regional Forest Owner Organizations on Forest Management in the Swiss Canton of Lucerne	Small-Scale Forestry	Hansmann, R.	2016	PFOOs	Switzerland
2	How interest groups adapt to the changing forest governance landscape in the EU: A case study from Germany	Forest Policy and Economics	Juerges, N.	2015	Others	General
2	Characterization of forestry contractors’ business models and profitability in Northern Sweden	Scandinavian Journal of Forest Research	Kronholm, T.	2021	FEs	Sweden
2	Community forest governance: a rapid evidence review	Report Pub. from Forest Research—the Forestry Commission	Lawrence, A.	2012	CFsry	UK
2	Back-casting for desirable futures in Finnish forest-based firms	Foresight	Näyhä, A.	2021	Forest firm	Finland
2	Finnish forest-based companies in transition to the circular bioeconomy - drivers, organizational resources and innovations	Forest Policy and Economics	Näyhä, A.	2020	Forest firm	Finland
2	Forms of cooperation of Lithuanian forest owners: A case review	Baltic Forestry	Pivoriūnas, A.	2021	PFOOs	Lithuania

2	Empirical accounting of adaptation to environmental change: Organizational competencies and biodiversity in Finnish forest management	Ecology and Society	Primmer, E.	2009	n.e.	Finland
2	Reengineering the Romanian timber supply chain from a process management perspective	Croatian Journal of Forest Engineering	Rauch, P.	2020	Supply chain	Romania
2	Forest Owners Associations in the Central and Eastern European Region	Small-Scale Forestry	Sarvašová, Z.	2015	PFOOs	Czech Rep., Latvia, Estonia, Hungary, Lithuania, Romania, Slovakia
2	Community forest enterprises and social enterprises: the confluence of two streams of literatures for sustainable natural resource management	Social Enterprise Journal	Siegner, M.	2021	CFsry	World
2	Business model for developing strategies of forest cooperatives. Evidence from an emerging business environment in Greece	Journal of Sustainable Forestry	Trigkas, M.	2020	FEs	Greece
2	Experiencing forest products – An innovation trend by rural entrepreneurs	Land Use Policy	Živojinović, I.	2020	Others	Austria, UK
3	Interactions between organizations and networks in common-pool resource governance	Environmental Science and Policy	Agrawal, A.	2013	CFs	India
3	Community based forest enterprises in Britain: Two organizing typologies	Forest Policy and Economics	Ambrose-Oji, B.	2015	CFsry	UK
3	Actors' Potential for Change in Slovenian Forest Owner Associations	Small-Scale Forestry	Aurenhammer, P.K.	2018	PFOOs	Slovenia
3	Performance analysis of logging enterprises operating in the western Italian alps	Quality Access to Success	Blanc, S.	2019	FEs	Italy
3	Still going strong, community forests in Sweden	Forestry	Carlsson, L.	1999	CFs	Sweden
3	Social learning as a basis for cooperative small-scale forest management	Small-Scale Forestry	Dedeurwaerdere, T.	2009	PFOOs	Belgium
3	Private forestland owners in Sweden: Large-scale cooperation in action	Journal of Forestry	Kittredge, D.	2003	PFOOs	Sweden
3	How are Swedish Forest Owners' Associations Adapting to the Needs of Current and Future Members and Their Organizations?	Small-Scale Forestry	Kronholm, T.	2016	PFOOs	Sweden
3	Influence of organizational culture on firm efficiency: competing values framework in Croatian forestry	Scandinavian Journal of Forest Research	Landekić, M.	2015	FEs	Croatia
3	'What's in it for me?' – Contrasting environmental organizations and forest owner participation as policies evolve	Forest Policy and Economics	Lindstad, B. H.	2018	ENGO	Norway
3	Defining the differences in corporate culture in wood-processing and forest enterprises	BioResources	Lorincová, S.	2020	FEs	Slovakia
3	Private Forest Owner Typologies in Slovenia and Serbia: Targeting Private Forest Owner Groups for Policy Implementation	Small-Scale Forestry	Malovrh, Š.P.	2015	PFOOs	Slovenia and Serbia
3	Strategic change in the forest industry towards the biorefining business	Technological Forecasting and Social Change	Näyhä, A.	2014	Consortium	Scandinavia + North America
3	Forest-owner support for their cooperative's provision of public goods	Forest Policy and Economics	Nilsson, J.	2020	PFOOs	Sweden
3	Challenges of Organizing Private Forest Owners in Serbia	Small-Scale Forestry	Nonic, D.	2011	PFOOs	Serbia
3	Institutional barriers in forest owners' cooperation: The case of Estonia	Forest Policy and Economics	Pöllumäe, P.	2016	PFOOs	Estonia
3	Reflections of active forest owners to the public-private forestry support system in Estonia	Forestry Studies	Pöllumäe, P.	2019	PFOOs	Estonia
3	Forest Management Cooperatives and Their Development Under Uncertain Conditions: A Comprehensive Analysis Using an Actor-Centered Institutionalism Approach	Small-Scale Forestry	Sonnhoff, M.	2021	PFOOs	Germany
3	The social networks of Irish private forest owners: An exploratory study	Forest Policy and Economics	Stoettner, E.M.	2019	PFOOs	Ireland
3	Structural changes of state forest management organizations in Estonia, Latvia, Lithuania, Serbia and Slovakia since 1990	Baltic Forestry	Teder, M.	2015	SFMOs	Estonia, Lithuania, Latvia, Serbia, Slovakia

3	Sustaining Forest Ecosystem Services Through Social Enterprises: Motivations and Challenges from a Case Study in Scotland	Small-Scale Forestry	Zhang, S.	2021	SFEs	Scotland
4	Optimization of the regional energy supply network: a multiobjective analysis in the province of Florence (Italy)	International Journal of Sustainable Energy	Bernetti, I.	2014	Supply chain	Italy
4	Management of outsourced forest harvesting operations for better	Forest Policy and Economics	Eriksson, M.	2015	FEs	Sweden
4	Fostering social enterprise in woodlands: Challenges for partnerships supporting social innovation	Forest Policy and Economics	Lawrence, A.	2020	SFEs	UK
4	Lessons and achievements from the Mersey Forest by networking partnership for twenty years	International Journal of GEOMATE	Miyagawa, T.	2018	CFs	UK
4	Evaluating organizational designs in the forestry wood supply chain to support Forest Owners' Cooperations	Small-Scale Forestry	Rauch, P.	2005	PFOOs	Switzerland
4	Efficient timber pricing and purchasing behavior in forest owners' associations	Journal of Forest Economics Scandinavian	Størdal, S.	2004	PFOOs	Norway
4	Forestry Organization Network in Northern Finland	Journal of Forest Research	Tikkanen, J.	2003	others	Finland
4	Looking beyond timber: Empirical evidence for the diversification of forest enterprises and the profitability of auxiliary activities in Austria	Forest Policy and Economics	Ungerböck, E.	2015	FEs	Austria

**Table S3.** (Part 1)—Categorization and analysis of organizational models identified through a semisystematic literature review in the European forestry sector.

Analytical dimensions	Variables	ORGANIZATIONAL MODEL'S CATEGORIES		
		SFMOs	PFOOs	Community forests
ACTORS	Members	The state, regional, and local administration	Nonindustrial private forest owners	Local communities
	Owners' attitude	Ownership in the interests of the public	Active forest owners (cooperative model) OR absent forest owners (shareholders' model)	Active in governance
	Formal external network	Other local administrations; SFMOs; 2 <sup>nd</sup> -tier organizations (EUSTAFOR)	Umbrella organizations	Second-tier organizations of community forests
	Clients	Timber and logging enterprises; sawmills	Sawmills	Not found (n.f.)
DISCOURSES	Purpose	To maximize forest ecosystem services' value for society through an efficient use of resources	Political influence/interest representation AND/OR improvement of/support to forest management	To benefit from the use of the common resources + stewardship of the rural area in which they are rooted
	Members' motivations	Politically addressed	Valuing ownership	Sustainably use collective resources to obtain personal benefit
	The value proposition	Timber and NTFP, commercial services (recreation, education) + (environmental) services without market	INTERNAL—Services for members (to guide and advise); EXTERNAL—Timber (raw material)	Forest products
	Communication	Implemented to reduce conflicts and inform people about services' provision	n.f.	n.f.
	Business strategy	Developing new business activities + outsourcing activities (reduction of costs)	Costs reduction (efficiency) + enhancement of marketing/contracting capacity	Direct use of the resources for internal needs and selling of the surplus
	Key (internal) values	Public interest; efficiency	Trust	Resources and landscape conservation; tradition
	Legal entity	Joint stock companies; state agencies	Cooperatives or associations	Decentralization/devolution of forest rights to rural communities (special laws)
RULES	Liability profile	Guarantee by shares	Limited	n.f.
	Governance structure	Hierarchical	Democratic (cooperative principles)	Endogenous organizations

	Decision-making	Influenced by political power	Cooperative-type (active owners) OR assigned to managers (delegating owners)	Not always clearly distinguished between BoD and the administrative staff
	Assets (key resources)	Nature centers	Manager (Forester); employees	n.f.
	Cost structure	Tends to efficiency and reduction (outsourcing of many activities)	Oriented to costs reduction	n.f.
	Forest management responsibilities	Internal. FM plans developed by external consultants in smaller SFMOs	Individual owners directly plan and manage OR joint management (internal or external professionals)	Internal, but not clearly distinguished between members, employees, and board members
	Financial sources	Revenues from sale of products and services	Financial support from public funds + membership fees + revenues from selling of services	Revenues from selling of forest products (and services) outside the community
	Financial performances	Financially self-sufficient. Different performances among different countries and SFMOs	Not always financially self-sufficient	Financially self-sufficient
	Impacts and externalities	Providers of ecosystem services through effective sustainable forest management	Possible enhancement of FESs' provision + Contribution to sustainable regional development	Landscape conservation; open green spaces for the community; community empowerment

**Table S3.** (Part 2)—Categorization and analysis of organizational models identified through a semisystematic literature review in the European forestry sector.

Analytical dimensions	Variables	ORGANIZATIONAL MODEL'S CATEGORIES		
		Community forestry and CBFE	Social enterprises	Forest enterprises
ACTORS	Members	Communities; communities with entrepreneurs	Social entrepreneurs; communities; groups of people sharing common values and vision	Forest workers
	Owners' attitude	n.f.	Attempting to bridge forests (ecosystem services provider) and society (ecosystem services receiver)	Often considered as an extension of their clients' operations. Profit-oriented
	Formal external network	n.f.	Forest owners	Second-tier organizations
	Clients	Other forest-based firms (for timber); retail customers, organizations, or individuals (for services)	Retail customers (depending on products and services produced): organizations, individuals	Bigger forest firms, forest owners (public and private)
DISCOURSES	Purpose	To produce benefit for a community by the management of forest resources	Multiple objectives: primary objective is to achieve social and/or environmental benefit	Productivity improvement, cost reduction, and technical and operational efficiency
	Members' motivations	n.f.	n.f.	n.f.
	The value proposition	Forest products; forest services; mixed	Forest services; forest products; mixed	Forestry operations (logging, transport) for third parties
	Communication	n.f.	n.f.	n.f.
	Business strategy	n.f.	Diversification: multiple-objective business: balancing social, environmental, and economical dimensions	Diversification + increasing performance through learning orientation and strengthening organizational capacity
	Key (internal) values	Care; cooperation; engagement	Solidarity; trust; care; cooperation	n.f.
	Legal entity	Various. Small–medium enterprises, different company types	Charities, not-for-profit/social enterprises, cooperatives	Micro and small–medium enterprises (MMEs and SMEs), different company types according to national laws; cooperatives.
RULES	Liability profile	Depending on the legal form: limited or unlimited	Limited	Depending on the legal form: limited or unlimited
	Governance structure	Democratic (participatory)	Structured with a board, frequently "flat" internal hierarchies	Very simple in MMEs: head (owner) of the company and workers. More structured (democratic) in cooperatives
	Decision-making	Assigned to managers/BoD with community involved	Assigned to a board/managers	In cooperatives, assigned to the board

POWER/ RESOURCES	Assets (key resources)	n.f.	Volunteers	Timber-harvesting machineries
	Cost structure	n.f.	High transaction costs (multiobjective strategy brings high costs)	Machineries' costs very relevant
	Forest management responsibilities	Internal, employing foresters, or contracting external professionals	The manager is responsible for considering the multiple interests of different stakeholders and balancing the objectives	Operational. Contracted by third parties only for forestry operations. Limited power to negotiate for favorable contract terms and worksites
	Financial sources	Revenues from selling of products and services	Commercial revenues + grants (financial security is a critical factor)	Tenders for contracts, paid by forest owners or by forest firms
	Financial performances	Financially self-sufficient	Not always financially self-sufficient	Financially self-sufficient, but afflicted by low profitability
	Impacts and externalities	Forest management activities focused on producing public benefits for the community (conservation, landscape values, recreation opportunities)	Able to effectively bridge forests (ecosystem services provider) and society (ecosystem services receiver); the social enterprise may enhance people's access to forest ecosystem services and safeguard the continuity of its provision	Potential role for local development (employment opportunity); key contribution to FM's positive environmental effects, such as hydrogeological protection, biodiversity, and carbon storage