Catalysing Local Wood Valorisation: Funding Pathways and Mechanisms for the Grand Region

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Paris

October 2025

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1 Executive Summary

This report provides a comprehensive overview of the most effective funding instruments and mechanisms for utilising local wood resources in the Grand Region, comprising Wallonia, Grand Est, Luxembourg, Saarland and Rhineland-Palatinate. Developed as part of the ongoing activities within the W.A.V.E. project, the report directly contributes to the project's mission of enhancing regional wood valorisation and sustainable market development.

Drawing on successful examples from EU, national, regional and private initiatives, the report identifies and assesses effective funding tools, focusing on their practical application and relevance to the Grand Region's specific context. The analysis provides comparative insights, best practice case studies and lessons learned to ensure that the recommendations are tailored to the needs and priorities of the W.A.V.E. consortium.

N.B.: This document is intended as a dynamic working reference for the W.A.V.E. consortium. It will be updated and refined as new information and feedback emerge from ongoing project activities. The next phase will involve targeted face-to-face interviews between project partners and their selected stakeholders. These meetings are designed to gain a deeper understanding of the current situation and collaboratively develop bespoke solutions to address local challenges and opportunities. Insights from these interviews will be integrated into future versions of the report to further inform strategic planning, stakeholder engagement and targeted action implementation.

Regional Table Example

Program Name	Country/ Region	Type	Main Mechanism	Stakeholders	Valorisation Impact	Practicality
BMEL Charta für Holz 2.0	Germany	Public (Dialogue)	Stakeholder platform	BMEL, Thünen Institute	Policy, enabling	High (open, ongoing)
ADEME	France	Public (Funding)	Grants, incentives	French wood actors	Direct funding	Medium (competitive)
Wood Industry Wallonia	Wallonia/ Belgium	Public/Private	Funding, advocacy	Industry associations	Regional branding	High (sectoral)
Klimabündnis Bauen	Rheinland-Pfalz	Public	Incentives, knowledge	State, builders, SMEs	Construction focus	Medium (strategic)
Interreg/W.A.V.E. calls	Cross-border	EU/Hybrid	Project funding	Multiple	Collaboration	Medium (dependent)

Rational:

The wood sector in the Grand Region is at a turning point: although the potential of local resources is significant, utilisation rates and value creation remain below their potential. This report responds to the W.A.V.E. consortium's request to map and evaluate funding programmes and mechanisms that can stimulate the use of local wood and facilitate the transition to sustainable, circular bioeconomies. The objective is to identify funding sources, such as grants, incentive schemes, advisory frameworks and partnerships, that have a tangible and proven impact on the valorisation of wood in the region.

2 Introduction and objectives

2.1 Introduction:

The wood sector in the Grand Region, which comprises Wallonia, Grand Est, Luxembourg, Saarland and Rhineland-Palatinate, is at a pivotal moment. Despite possessing significant local wood resources, the region's current utilisation rates and value creation remain below their true potential. Unlocking this potential is crucial for promoting regional economic growth, encouraging environmental sustainability and facilitating the transition to a circular bioeconomy.

The W.A.V.E. project (Wood Added Value Enabler) brings together partners from across the Grand Region who share a vision: Strengthening local wood value chains, promoting sustainable resource management, and supporting the development of resilient circular bioeconomies. By fostering cross-border collaboration and knowledge exchange, the project aims to create new opportunities for the wood sector, enhance regional competitiveness, and contribute to climate and sustainability goals.

This report has been developed for the W.A.V.E. consortium in response to the need to map and evaluate funding programmes and mechanisms that can stimulate the use of local wood and facilitate sustainable development.

It is in line with the main activities of the W.A.V.E.:
The W.A.V.E. project pursues its vision through a series of coordinated activities, including:

- Mapping and analysing funding instruments, market mechanisms and policy frameworks relevant to wood valorisation in the Grand Region.
- Identifying and disseminating best practices and successful case studies from across Europe.
- Engaging with stakeholders through targeted face-to-face interviews and workshops to gain a deeper understanding of local challenges and opportunities.
- Developing tailored recommendations and action plans to support project partners and regional stakeholders.
- Facilitating cross-border cooperation and knowledge exchange among public, private, and research organisations.

2.2 Objectives:

The main objectives of this report are to:

- Map and analyse the most relevant funding programmes, mechanisms and incentives (see Annex 2), such as grants, incentive schemes, advisory frameworks and partnerships, available for local wood utilisation in the Grand Region.
- Assess the effectiveness and practicality of these instruments, drawing on best practice examples and lessons learned from EU, national, regional and private initiatives.
- Identify key challenges and opportunities for improving access to funding and supporting the development of sustainable wood value chains.
- Provide tailored recommendations for W.A.V.E. partners to enhance regional wood valorisation and market development.
- **serve as a working document to inform and guide the next phases of the W.A.V.E. project**, including targeted face-to-face interviews with stakeholders. These interviews, conducted in collaboration with project partners and their selected stakeholders, will deepen understanding of local contexts and support the co-creation of tailor-made solutions.

Expected impacts

Through these activities and objectives, the W.A.V.E. project aims to achieve the following impacts:

- Increased utilisation and valorisation of local wood resources, leading to greater economic value creation within the region.
- Enhanced access to funding and investment for wood-related initiatives to support innovation and sustainable business models.
- Strengthened cross-border collaboration and knowledge transfer among regional stakeholders.
- The development of practical, region-specific solutions that address local barriers and leverage unique opportunities.
- Contribute to climate action and circular economy goals by promoting sustainable resource management and reducing the wood sector's carbon footprint.

Achieving these goals will promote evidence-based decision-making, encourage collaboration, and establish the foundations for a more sustainable, innovative, and competitive wood sector in the Grand Region.

3 Methodology

3.1 Research and assessment methods, stakeholder involvement, data sources

The analysis is based on a review of international, European, national and regional programmes, as documented in existing reports and desk research. Practical examples were collected from recent interventions. Where available, stakeholder feedback and programme evaluations supplement the findings.

Evaluation criteria

Each programme can be assessed using the following criteria, either with a point system or traffic light indicators:

1. Target group fit: Does the programme match the intended beneficiaries (e.g. SMEs, research institutions, education providers)?
2. Funding volume and depth: Is the financial support sufficient and meaningful?
3. Accessibility and application process: Is the programme easy to understand and apply for?
4. Innovation and impact potential: Does it support innovative approaches and deliver measurable outcomes?
5. Collaboration opportunities: Does it encourage partnerships between the public and private sectors, as well as across different sectors and interregional and or internationally?
6. Sustainability and environmental relevance: Does it promote ecological or social sustainability?
7. Timing and availability: Is the programme currently open and aligned with project timelines?

4 Regional context and challenges

Below is a structured, expert-level section, synthesising current trends, opportunities and critical barriers in regional wood resource valorisation. The focus is on relevance for stakeholders across the value chain, drawing on recent European analyses and sector case evidence.

4.1 Regional Context and Challenges

Wood resources in Europe, particularly in the Grand Region and Germany, are both abundant and diverse, including **managed forests, secondary wood, and post-consumer sources**. The regional sector is experiencing strong demand growth for wood-based products driven largely by the construction sector, climate mitigation policies, and the circular bioeconomy. However, resource mobilisation, valorisation, and sustainable innovation face structural and market hurdles that threaten both sector competitiveness and climate impact, as revealed by current SWOT diagnostics.

SWOT Analysis: Wood Valorisation in the W.A.V.E. Region

Strengths	Weaknesses
High forest cover, with sustainable management traditions Advanced know-how in certified wood, bio-based construction, and eco-design Strong Innovation hubs and support for digital traceability	Limited efficient use and processing of secondary and post-consumer wood Insufficient harmonisation and transparency in regulatory frameworks Incomplete SME integration in new value chains and digital transitions
Opportunities	**Threats**
Digitalisation (product passports, data-driven flows and processes) Horizon Europe and national - regional funding for circularity innovation Market incentives for certified, traceable, and circular wood Upskilling and knowledge transfer platforms	Market fragmentation and lack of stable demand for recycled wood Preferential policy support for energy recovery over material use High adaptation/processing costs and skills gaps Climate risks, pests, and regulatory inconsistency

Wood Resource Potential

Europe's regions have a significant wood resource base, both in managed forests and in untapped potential from by-products and waste wood (construction, demolition, furniture,etc.). Mobilising more of these flows is increasingly critical:

Efficient use of primary wood remains strong, particularly where PEFC/FSC certification is standard.

- Untapped potential lies in better valorisation of waste wood and by-products, requiring improved collection, data systems, and processing infrastructure.
- There is increasing attention from EU and national (regional) authorities to align material flows with climate targets and circular bioeconomy goals through digital innovation, especially Digital Product Passports, mapping quality, and ensuring traceability.

Valorisation Challenges

Key barriers to full wood resource valorisation include:

- **Market Barriers:** Low economic incentive for waste wood use, lack of demand for recycled materials, high certification and processing costs, and variable quality and composition of collected materials.
- **Policy and Regulatory Barriers:** Absence of a harmonised EU regulatory framework for waste wood, fragmented standards, inconsistent classification schemes, and greater policy preference (and sometimes subsidies) for energy use over material recovery.
- **Data & Digitalisation Gaps:** Limited data availability, stakeholder resistance, costly digital traceability implementation, and lack of capacity and training for SMEs to adopt digital solutions.
- **Technical and Structural Barriers:** Insufficiently efficient processing routes for secondary wood, logistical complexities in collection/sorting, and existing plant/facility limitations.
- **Lifecycle Complexity:** Current frameworks fail to adequately embed whole-of-life-cycle approaches, impeding the move to true circularity and high-value upcycling.

Best practice recommendations now emphasise introducing harmonised classification schemes, incentives for material recovery, improved standards on processing and end-uses, and support/harmonisation for Digital Product Passports across value chains to facilitate higher value and more transparent wood flows.

This structured overview provides a foundation for further evidence-based recommendations and effective programme design for stakeholders targeting the next phase of sustainable wood valorisation in Europe.

5 Funding Landscape

5.1 EU & International Programmes

Policy landscape and strategic drivers:

The European Union's Competitiveness Compass and former Green Deal, Circular Economy Action Plan, and Forest Strategy 2030 plus Biodiversity Strategy set ambitious goals for climate adaptation, biodiversity protection, and sustainable construction. National-level frameworks in France, Belgium, Luxembourg, and Germany align closely, supporting decarbonisation and resilient bioeconomy transitions. Regional strategies encourage operational projects and partnership models tied to EU directives and funding streams such as LIFE, Horizon Europe, and Interreg and some more, promoting innovation and cross-border impact.

5.2 National & Regional Programmes

Funding mechanisms and strategic instruments for wood valorisation

A variety of financial instruments and strategic partnerships are driving innovation and sustainability in the wood sector across the Grand Region. These include investment funds, carbon markets and public–private partnerships (PPPs), each of which offers unique benefits for SMEs and regional development.

Foundations and investment funds:

- France Valley European Forestry Fund: With €1.2 billion in assets, this fund supports SMEs engaged in climate-aligned forestry. It promotes sustainable forest management and offers long-term investment stability.
- GFI/GFF Structures: These co-investment vehicles provide tax benefits and capital for sustainable forest management, targeting both ecological impact and financial returns.

Carbon Markets:

Carbon markets present a growing opportunity for certified timber and sustainable forestry operations to generate revenue through carbon credits. These mechanisms reward climate-positive practices and can be integrated into broader ESG investment strategies.

However, it is essential that double counting of loans is avoided in order to prevent damage to the sector's reputation.

Public-private partnerships (PPPs):

PPPs are instrumental in accelerating demonstration projects, particularly in urban adaptation and innovative wood construction. Examples include Interreg-funded initiatives and regional campaigns that combine public support with private-sector expertise.

Case studies:

- UP STRAW (Wallonia): An eco-construction cluster integrating public and private actors in design-build projects.
- Grand Est Log Storage and Poplar Plan: A regional response to forestry crises, supporting sector modernisation and resilience.
- WOODEN Project and Baue mat Holz (Luxembourg): Focused on real estate innovation, certification and timber construction.
- People & Trees Alliance (Grand Est/Lorraine): A multi-stakeholder initiative that promotes sustainable forestry and community engagement.

Comparative Mechanism Analysis and Market Incentives

Funding mechanisms vary significantly in terms of accessibility, financial depth and administrative complexity. This section compares key instruments and highlights certification schemes and stakeholder networks that support wood valorisation.

Mechanisms differ in terms of grant accessibility (e.g. Prime Bois offers a straightforward approach), project guarantees (e.g. the Poplar Plan and PPPs), concessional loans and performance-based carbon incentives. **Administrative complexity and eligibility criteria can pose barriers, particularly for SMEs with limited capacity**.

Certifications and market incentives

Certification schemes such as PEFC and FSC are widely adopted, enhancing market acceptance and enabling access to premium segments. Regional branding and circular economy incentives (e.g. Prime Bois bonuses and the Baue mat Holz label) add further value. Certification agencies play a pivotal role in ensuring traceability and climate-aligned construction.

Stakeholder network mapping:

Key stakeholders include regional authorities (e.g. Wallonia, Grand Est and Luxembourg), sector clusters (e.g. Eco-Construction and People & Trees (Les hommes et les arbres), various (forestry) and wood clusters in Germany), investment vehicles (e.g. France Valley and GFI/GFF, BPI France and others), certification boards (e.g. PEFC and FSC) and innovation platforms (e.g. Built by Nature Accelerator, Timber Start Up Incubator-TSI in Switzerland).

Recommendations and actions:

Immediate actions should focus on providing direct incentives for local wood, expanding technical support for SMEs and joining sector alliances. Mid-term strategies should include establishing regional demonstration sites and reinforcing PPP models. A consortium action plan should pool expertise, coordinate grant applications and facilitate the transfer of knowledge across projects.

5.3 Key Programmes & Stakeholders (Table)

Programme Accessibility and KPIs

Programme	Region	Funding	Stakeholders	Scope/Impact
Prime Bois	Wallonia	Grants, bonuses	Authorities, SMEs, certifiers	Local wood uptake, improved traceability
UP STRAW	Wallonia/NWE	Interreg, PPP	Cluster, SMEs, public	Ecological modular building
Charta Holz 2.0	Germany (federal)	Public (BMEL), no direct funding	BMEL, Thünen Institute, industry, science, civil society	Dialogue platform for climate protection, resource efficiency, value creation
Log Storage & Poplar Plan	Grand Est	Regional grants	Agencies, forest owners, SMEs	Crisis response, reforestation
WOODEN/Baue mat Holz	Luxembourg	Private, PPPs	IKO, certifiers, government	Large-scale timber construction
People & Trees	Lorraine	Mixed, innovation	Consortium, public, SMEs	Multi-stakeholder valorisation
France Valley/GFI	Cross-border	Private investment	Fund managers, SMEs	Sustainable asset management
Built by Nature Accelerator	EU/Grand Region	Grants, accelerator	SMEs, research, industry	Circular, low-carbon R&D

Each programme is assessed by:

- **Ease of Access**: Application simplicity, clarity of eligibility.
- **Funding Depth**: Size and duration of support.
- **Impact Potential**: Contribution to wood valorisation.
- **SME Suitability**: Fit for small and medium enterprises.

Table KPIs for various programmes:

Programme	Access	Funding Depth	Impact	SME Suitability
Prime Bois (Wallonia)	High	Medium	High – Promotion of local timber use and traceability	High
Baue mat Holz (Luxembourg)	Medium	Medium	High – Promotion of certified timber construction projects	Medium
BMEL Timber Modernisation	Medium	High	High – Digitalisation, consulting, CO_2 reduction	Medium
Built by Nature Accelerator	Medium	Medium	High – Promotion of Innovation und circular economy concepts	High
FormaWood (Interreg)	High	Medium	Medium – Qualification and cross-border cooperation	High
BPI France	Medium	High	High – Financing innovative timber projects	High
Charta für Holz 2.0	High	Indirect (Platform for dialogue)	Medium to high – Political impact, stakeholder dialogue, monitoring	Funding via Cluster and network organisations*

**** The Charter Wood 2.0 does not provide direct funding; instead, it operates through policy steering, working groups and monitoring. While it is primarily aimed at strategic actors, clusters and research institutions, SMEs can also benefit from its networks and programmes.***

Special mention: BPI France

BPI France is the national public investment bank of France and plays a pivotal role in supporting innovation, sustainability and industrial transformation. It offers a variety of financial instruments designed for SMEs, including grants, loans, and equity investments. Accessible through regional offices and an online portal, the bank is a key enabler for wood-based innovation and regional development.

Programme features:

- Grants, loans and equity investments designed for SMEs.
- A strong focus on green transition and industrial modernisation.
- Accessible via regional offices and digital platforms.

Key Performance Indicators (KPIs):

- Funding volume: High.
- SME Fit: Strong.
- Innovation Support: Excellent.
- Accessibility: Medium (business plan required).

Relevance to W.A.V.E:

- Supports wood-based innovation and sustainability.
- Can co-finance regional demonstration projects.
- A strategic partner for scaling up and achieving export readiness.

Recommendations:

- Map accessible funding and innovation programmes for specific needs.
- Use case-based insights for replication.
- Apply KPIs for programme selection.
- Support the development of a regional strategy.

Action proposal: Establish a regional one-stop shop to:

- Promote SME onboarding and technical support.
- Engage in EU, national and regional calls and accelerator programmes.
- Foster cross-border demonstration projects.

5.4 Comparative analysis

This section compares the key financial mechanisms relevant to wood valorisation across the Grand Region.

Grants and subsidies:

Accessibility: Generally accessible to SMEs and local operators, though administrative compliance and reporting are required.
Viability: Grant size and disbursement speed can vary. Simpler mechanisms, such as Prime Bois, enable broader uptake.

Loans and blended finance:

- Loans and hybrid instruments are mainly used in large-scale or demonstration projects.
- Blended finance models (e.g. PPPs and the Built by Nature Accelerator) support scaling up and risk sharing.

Carbon credits and ESG:

- Carbon markets offer revenue opportunities for certified timber and sustainable forestry.
- ESG-linked investments (e.g. France Valley and GFI) align financial returns with environmental goals.

Local Valorisation Feasibility:

- Regional innovation (e.g. People & Trees) is feasible with embedded multi-stakeholder governance and technical support.
- Large-scale projects (e.g. WOODEN) require robust planning and certified supply chains.

5.5 Best Practices & Lessons Learned

Programme performance:

Success is linked to simple incentive structures, effective outreach, resilient supply chains and collaborative platforms.

Barriers and success factors:

Barriers include administrative complexity, low technical capacity among SMEs, and fragmented networks.
Success factors include targeted support, streamlined reporting, demonstration projects and knowledge-sharing alliances.

5.6 Recommendations:

- Expand technical support and direct incentives for SMEs.
- Integrate regional branding and certification to enhance market access.
- Establish crisis response supply chains and robust stakeholder platforms.
- Promote blended finance and accelerator fund models to scale innovation.

5.7 Action plan:

- Map the funding and certification landscape by region and sector.
- Organise stakeholder forums for cross-border knowledge sharing.
- Pilot regional demonstration projects for circular wood valorisation.
- Engage private investors and apply for grants from the Built by Nature Accelerator.
- Implement technical support services for SME onboarding.
- Monitor the KPI dashboard to drive continuous improvement.

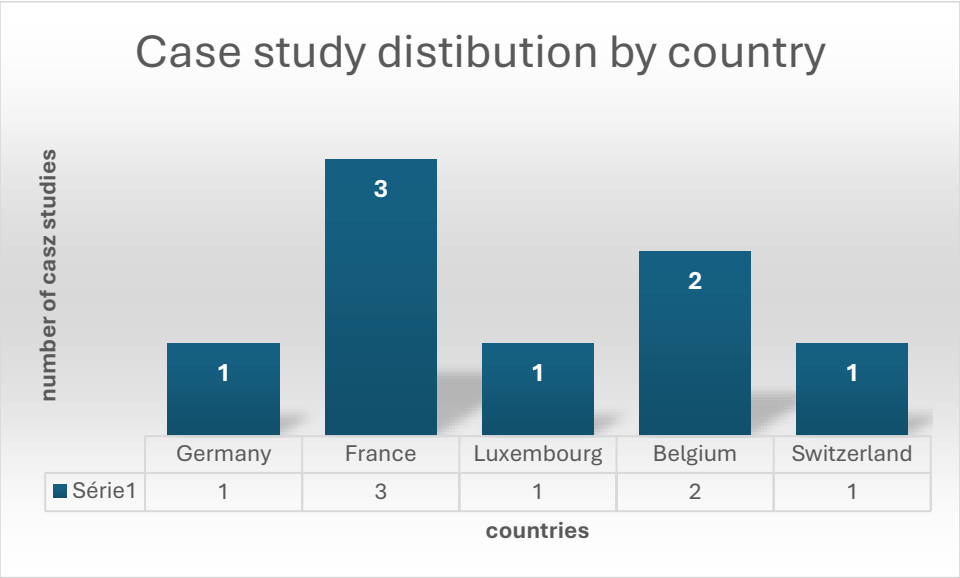
KPI Dashboard for Forest-Based Programmes

KPI	Definition	Target	Data Source
Local Wood Utilisation Rate	Percentage of total wood used in construction/local manufacturing that is sourced locally	>65%	Programme reports, participant surveys
Certified Timber Share	Proportion of wood used that is certified (e.g., PEFC, FSC)	>85%	Certification agency records
SME Participation	Number of SMEs engaged in the programme	25+ SMEs/year	Programme registry
Job Creation	Net jobs generated in the wood sector due to the programme	+5% annual growth	Employment statistics, participant reporting
CO2 Reduction	Tonnes of CO2 emissions avoided or sequestered (from wood-based activities)	>750 t CO2/year	Environmental audit, project impact assessments
Crisis Resilience: Log Storage Capacity	Volume of timber stored and protected from crisis (e.g., beetle, windstorm)	>100,000 m³	Region/sector records
Technical Support Reach	Proportion of eligible SMEs receiving guidance or assistance	>75%	Technical support logs, SME feedback
Investment Leveraged	Total additional private/public investment mobilised due to the programme	>€5M/year	Financial reports, partner declarations
Stakeholder Satisfaction	% of stakeholders rating support as good or excellent	>80%	Surveys, satisfaction interviews
Innovation Adoption Rate	% of participating SMEs adopting new valorisation or construction innovations	>30%	Programme records, SME feedback

6 Case Studies and Financing Instruments for Wood Valorisation in the Grand Region

6.1 Case Studies on Wood Valorisation in the Greater Region and Cross-Border EU Zones

It contains case studies from the Grand Region (Wallonia, Grand Est, Luxembourg and Rhineland-Palatinate as well as Swiss examples) which demonstrate effective local wood valorisation through innovative funding mechanisms, multi-stakeholder cooperation and policy alignment.



Case Study 1: Klimabündnis Bauen – Rhineland-Palatinate (Germany)

Project	Klimabündnis Bauen (Climate Alliance for Construction)
Location	Rhineland-Palatinate, Germany
Description	A strategic initiative promoting climate-resilient, wood-based construction through the use of renewable and circular building materials, particularly local wood.
Valorisation Features	Regional incentives and grants Modular construction and ecological standards Cross-sector knowledge transfer
Impact	Scaling of timber projects Strengthened value chains CO_2 savings
Sources	https://klimabuendnis-bauen.rlp.de

Case Study 2: FormaWood – Interreg Project (France & Belgium)

Project	FormaWood – Formation et transfert de compétences forêt-bois
Location	Grand Est (France) and Wallonia (Belgium)
Description	Cross-border project enhancing qualifications across the wood value chain and promoting regional timber use.
Valorisation Features	- Joint curricula and trainee mobility - Demonstration projects - EU co-financing
Impact	- Upskilled workforce - Forest-to-product pipeline - Raised wood profile
Sources	https://interreg5.interreg-fwvl.eu/fr/formawood

Case Study 3: Prime Bois Programme – Wallonia (Belgium)

Project	Prime Bois by Wood Industry Wallonia
Location	Wallonia, Belgium
Description	Public incentive programme rewarding innovative use of certified Walloon wood.
Valorisation Features	Grants and bonuses Technical assistance Outreach and communication
Impact	Increased wood uptake Improved image and performance Enhanced traceability
Sources	https://clusters.wallonie.be

Case Study 4: UP STRAW Building – Wallonia (Belgium / Interreg NWE)

Project	Construction of the Eco-Construction Cluster Office
Location	Wallonia, Belgium
Description	Public-private project using wood and straw in modular prefabricated construction.
Valorisation Features	Short supply chains Ecological design Knowledge sharing
Impact	New use cases Emission reduction Dissemination via UP STRAW
Sources	https://clusters.wallonie.be/en/sites/eco-construction/home/projets/projets-europeens/up-straw.html

Case Study 5: Emergency Log Storage & Bark Beetle Response – Grand Est (FR)

Project	Emergency Storage Areas for Spruce Logs
Location	Grand Est Region, France
Description	Regional response to bark beetle crisis with large-scale log storage infrastructure.
Valorisation Features	€2.5M funding Regulatory support Public-private collaboration
Impact	Preserved timber Safeguarded jobs Climate resilience
Sources	https://www.bioeconomie-grandest.fr

Case Study 6: WOODEN Project & 'Baue mat Holz' Campaign – Luxembourg

Project	WOODEN – Large-Scale Wood Construction Initiative
Location	Luxembourg
Description	Real estate project using PEFC-certified timber, supported by national wood campaign.
Valorisation Features	Certified local timber Carbon storage Forum Bois Construction exhibition
Impact	Sustainable benchmarks Demand stimulation Network building
Sources	https://www.ikorealestate.eu/en/our-commitments-in-action/

Case Study 7: People & Trees – The Roots of Tomorrow (Grand Est / Lorraine)

Project	People & Trees – Territoires d'Innovation Investment Plan
Location	South Lorraine, Grand Est, France
Description	10-year alliance for regional wood valorisation blending environmental, social and economic goals.
Valorisation Features	Ecosystem resilience Urban greening Multi-stakeholder governance
Impact	Innovation models Regional transformation Community engagement
Sources	https://www.bioeconomie-grandest.fr/en/projets/project-people-trees/

Examples from Switzerland

1. Cooperation of enterprises

Case Study 8: Blumer Lehmann & Frutiger – Strategic Partnership (Switzerland)

Project	Strategic Investment in Timber Construction
Location	Switzerland
Description	Frutiger acquired 30% of Blumer Lehmann to strengthen timber construction growth.
Valorisation Features	Equity investment Industrial collaboration Growth strategy
Impact	Enhanced capacity to realize large wood construction projects Innovation investment Sector synergy
Sources	https://www.blumer-lehmann.com

Funding instruments (examples)

	Environmental technology promotion
Country/	**Switzerland**
Objectives:	• Promotion of innovative environmental technologies with the aim of developing products, systems, technologies, and processes that contribute to reducing environmental impact (e.g., resource efficiency, emission reduction). • Strengthening the competitiveness of the Swiss economy through environmental and technological innovation. • Promoting pilot and demonstration projects in a pre-market phase in order to translate research results into marketable solutions more quickly.
Scope of	• Funding is awarded for pilot and demonstration plants as well as accompanying measures for market application. • Funding share: As a rule, a maximum of 50% of eligible project costs. Applicants are required to contribute their own funds.
Criteria:	• Evaluation criteria include environmental benefits, degree of innovation, technical and economic feasibility, market potential, value creation in Switzerland. • The technologies funded cover a wide range of environmental areas: Waste/recycling, raw materials, emission control, water protection, biodiversity.
Significa	• UTF closes a gap in the innovation process: it addresses the phase between research and market entry, which otherwise often receives little funding. • Cooperation between industry, research, and authorities is promoted, thereby increasing the impact of innovations on the environment and the economy.
Sources	(https://www.bafu.admin.ch/bafu/en/home/topics/education/innovation/umwelttechnologiefoerderung.html)

Foundation:	CO_2 sink capacity of wood – the "Sink Project"
Location	Switzerland
Objectives:	The Swiss timber industry has launched a CO_2 compensation project. It is supported by the Swiss Timber Sink Association (SSH), which plays an important role in the triangle between the federal government (Federal Office for the Environment FOEN) and the Climate Protection and CO_2 Compensation Foundation (KliK Foundation).
Scope of funding:	Founded in 2012 by the Petroleum Association, the KliK Foundation is the industry-wide CO_2 compensation association under the CO_2 Act. On behalf of mineral oil companies that market fossil fuels, it fulfills their legal obligation to offset part of the CO_2 emissions generated by the use of these fuels. To this end, it promotes projects in Switzerland and abroad that reduce greenhouse gas emissions
Criteria:	CO_2 sink performance is based on additional measures. Additionality is determined using a reference line. Companies are free to decide which measures make the most sense to implement in their own operations in order to achieve the goal of increasing production, with measures possible in all areas. The following points must be noted: • Only products made from Swiss wood are taken into account. This requires separate recording of imported wood. • Other subsidies and financial assistance received must be recorded, as it may be necessary to allocate the impact. • Sink performance from measures in the areas of information and consulting as well as research and development cannot lead to certification.
Significance & special features:	The members of the SSH association increase the carbon storage capacity of wood through targeted measures, which are co-financed by the KliK Foundation. This is done using the following system: Project participants receive certificates from the FOEN for the additional wood products they produce, which they can sell to the KliK Climate Protection and CO_2 Compensation Foundation. The latter in turn passes on the purchased certificates to the federal government, thus fulfilling the annual compensation obligation on behalf of the compensation community.
Sources	((https://ssh-pbs.ch/)

6.2 Timber Startup Incubator (TSI) in Switzerland

The TSI bridges the gap between research and market for wood-based innovation. Hosted by Bern University of Applied Sciences, it supports:

- Start-ups at Technical Readiness Level (TRL) 4–7.
- Access to labs and mentoring.
- Collaboration with S-WIN and industry.

Strategic Value for W.A.V.E.:

- Model for regional incubators.
- Platform for cross-border innovation.
- Supports climate-smart construction.

The Timber Startup Incubator (TSI) addresses a critical challenge in sustainable construction by shifting the focus away from traditional building materials such as concrete and steel towards innovative, carbon-storing, wood-based alternatives that support climate goals. Recognising the need to diversify building materials to achieve a climate-friendly future, TSI fosters entrepreneurship and innovation in the wood-based bioeconomy. This aligns with Switzerland's Climate and Innovation Act and the United Nations' climate objectives. Hosted by Bern University of Applied Sciences (BFH) and supported by key organisations, TSI serves as a specialised hub, providing start-ups and researchers with comprehensive support ranging from coaching over access to infrastructure to networking and visibility, thus advancing wood-based projects from early development through to market readiness. The incubator prioritises projects at **Technology Readiness Levels 4 to 7**, bridging the crucial gap between research breakthroughs and real-world application, often referred to as the **'Death Valley' of innovation**.

TSI's unique focus on wood-based innovation, combined with access to cutting-edge research, lab infrastructure and industry networks, seeks to establish it as a **vital platform for entrepreneurs seeking to spearhead the climate-smart transformation of the construction industry**. The incubator actively encourages collaboration with private sector partners, investors, policymakers and mentors, translating research into impact and fostering sustainable construction through wood-based innovation.

Initiatives such as the Prix Will Bee innovation award provide entry points for promising projects, and there are plans for dedicated start-up spaces and expanded support in the near future. Through its targeted support and collaborative network, TSI aims to realise the full potential of the forest-based bioeconomy and establish sustainable practices in the construction industry.

Recommendation:

Overview

The Timber Start-up Incubator (TSI) is a specialised innovation hub dedicated to supporting wood-based entrepreneurship in Switzerland. It is designed to help start-ups develop from the idea stage through to early development, with a strong focus on connecting research, industry and business.

Key features:

Sector focus: wood-based innovation, sustainable construction, circular bioeconomy.

Support services:

- Business development and mentoring
- Networking and matchmaking with industry and research partners
- Assistance with funding applications and infrastructure access
- Media visibility and event participation
- Provision of laboratory infrastructure, allocation of available space for experimentation, and guarantee that your IP remains yours.

Founding partners:

- Bern University of Applied Sciences, Department of Architecture, Wood and Civil Engineering
- Lignum Holzwirtschaft BE
- S-WIN (Swiss Wood Innovation Network)
- Switzerland Innovation Park Biel/Bienne

Strategic relevance for W.A.V.E. and the Grand Region

Acts as a gateway for wood-based innovation and entrepreneurship.
Provides a model that can be replicated in other regions seeking to develop wood valorisation ecosystems.
Facilitates cross-border collaboration and knowledge transfer.
Aligns with W.A.V.E.'s goals of scaling sustainable practices and supporting SMEs in the wood sector.

Opportunities for engagement:

- Apply for the Prix Wood Bee innovation award.
- Partner as a mentor, sponsor or advisor.
- Join events and sign up for the newsletter.
- **Explore investment and co-development opportunities!**

6.3 Swiss Wood Innovation Network S-WIN

S-WIN supports the Swiss forest and timber industry in the development of products and processes for the decarbonisation of society by initiating R&D projects and ensuring the transfer of knowledge and technology between business, society, research and education.
The goal of S-WIN is to mobilize economic forces of its own and to consistently exploit existing growth potential, thus strengthening the competitiveness of the Swiss forestry and timber industry.
S-WIN is the most important contact for companies, research institutions, associations, federal offices and organizations in the field of innovation and research along the wood value chain and beyond. It is an association with over 100 members, including over 50 corporate members, nearly 15 research institutions, individual members, and national funding organizations

6.4 Examples of financing instruments supporting wood valorisation in the Grand Region

Instrument	Description	Relevance for Grand Region & W.A.V.E.
France Valley European Forestry Fund	Private investment fund for sustainable forest assets across Europe.	Provides long-term capital, strengthens raw material base, supports SMEs.
Groupement Forestier d'Investissement (GFI/GFF)	Collective investment structure for forest ownership and management.	Enables SME participation, supports afforestation, promotes sustainability.
Built by Nature Accelerator Fund	Grant programme supporting wood-based innovation in construction.	Funds R&D, fosters knowledge exchange, complements public grants.
Woodworking Machinery Finance	Leasing and asset finance for advanced woodworking equipment.	Supports SME modernisation, sustainability, and competitiveness.
ESG & Sustainable Investment Funds	Equity funds targeting nature-positive and decarbonisation projects.	Access to green capital, rewards responsible practices, supports EU goals.

6.5 Short overview of the state of the art in Austria, Nordic and Baltic countries

These regions' forest-based sectors offer diverse and innovative approaches to sustainable forestry, biodiversity related issues and sustainable wood utilisation. These regions demonstrate strong governance, advanced certification systems and an increasing focus on digitalisation, making them valuable models for cross-regional learning and policy transfer.

Austria

Austria's forestry sector is characterised by robust regional governance and a strong commitment to sustainability. The **National Forest Fund** provides substantial support for biodiversity conservation, climate adaptation, and technological innovation in the wood value chains.

Austria promotes the multifunctional use of forests, balancing ecological services with economic productivity. Its regional forestry administrations play a pivotal role in implementing national strategies and engaging with stakeholders.

Finland

Finland's forestry strategy is anchored in long-term **sustainability and competitiveness**. The National Forest Strategy 2035 prioritises forest growth, biodiversity conservation and economic viability. It promotes the multifunctional use of forests and is aligned with EU climate and bioeconomy goals.

The METSO Programme, a flagship biodiversity protection initiative in southern Finland, offers private forest owners voluntary conservation schemes. Additionally, regional forest programmes adapt national objectives to local circumstances, supporting sustainable harvesting, afforestation, and stakeholder engagement.

Sweden

Sweden has a long-standing tradition of developing forest policies, which are documented in its Forest Policy Database. This tracks over 200 years of legislative evolution. The country has widespread adoption of FSC and PEFC certification, ensuring sustainable forest management and market credibility.

Notably, the Right to Public Access promotes the recreational use of forests and fosters societal connections with nature. Sweden's forestry sector is highly mechanised and digitally advanced, supporting both ecological and economic objectives.

Norway

Norwegian forests cover around 40% of the country and private ownership is deeply rooted in tradition. Forestry policy integrates Sámi cultural rights, particularly with regard to reindeer husbandry and land use.

Norway emphasises climate-focused forestry, with policies aimed at enhancing carbon storage and resilience. The country supports innovation in wood construction and bioenergy in line with its broader climate commitments.

Forest ownership in northern Europe

In the Nordic countries, particularly Finland, Sweden, Norway and Denmark, forest ownership is predominantly private, with a significant proportion held by non-industrial family forest owners. These forests play a vital role in the national economies of these countries, particularly in Finland and Sweden, where forestry contributes substantially to exports and rural employment. However, economic pressures resulting from EU climate targets, such as reduced logging to enhance carbon sequestration, present challenges for income generation and labour markets.

Baltic states

Estonia, Latvia and Lithuania have developed EU-aligned forestry strategies that emphasise sustainable harvesting, afforestation and biodiversity protection. These countries are emerging as innovation hubs, investing in digital tools and circular bioeconomy models.

The Baltic forestry sectors benefit from robust governance and an increasing uptake of certification schemes. Although they differ in scale and funding from their Nordic counterparts, they offer valuable insights into regional autonomy and agile policy implementation.

Model potential and key differences

These regions are strong examples of:	**Differences remain in terms of:**
- governance and stakeholder inclusion - advanced certification and monitoring - digitalisation and innovation in forestry.	- scale of operations - Funding depth and mechanisms - Degree of regional autonomy and decentralisation.

7 Extended overview of sustainable forestry and wood-based construction programs across Europe

7.1 International programs for sustainable forestry development

What programmes are available across countries for sustainable forestry development?

Across Europe and internationally, a wide range of programmes support sustainable forestry development, each with unique features tailored to national or regional needs. The following overview selected the main types and examples of such programmes, focusing on both public and private initiatives. Here are some key programmes that are specifically available for the woodworking industries and the forest-based sector:

Key types of sustainable forestry development programmes

National and regional forestry programs

- ***Germany:***

(Federal) Bundesministerium Ernährung und Landwirtschaft - BMEL programs:

- Federal funding for forest adaptation, innovation and wood utilisation.
- Charta für Holz 2.0: A national dialogue and action platform for sustainable wood use.
- GAK/EAFRD: EU and state-funded support for forest transformation and disaster recovery.

- ***France:***
  National Forest and Wood Programme (PNFB): Promotes sustainable management, economic growth and multifunctional forest use.

- ***Austria:***
  Austrian Forest Fund: Provides large-scale funding for climate adaptation, biodiversity and innovation.

- ***Finland & Sweden:***
  National Forest Programmes: Guiding sustainable management, R&D and certification. The wood programme of the Finnish Ministry for the Environment is currently on hold.

- ***Poland:***
  State Forests (Lasy Państwowe): Manages most forests with a focus on sustainability and biodiversity.

7.2 The Rural Development Programme (EU): Supports rural and forest development.

EU and international programmes

- ***The EU Rural Development Programme (RDP):***
  Provides funding for sustainable forest management, rural development and forest adaptation across Member States.

- ***Horizon Europe:***
  Supports research and innovation in forestry and the bioeconomy.

- ***The EU Forest Strategy 2030:***
  It sets out objectives for forest restoration, biodiversity and climate adaptation.

- ***The Forest Investment Programme (FIP):***
  An international fund (via the World Bank) that supports REDD+ and sustainable forest management in developing countries.

Certification schemes:

- ***PEFC (Programme for the Endorsement of Forest Certification):***
  Widely adopted across Europe, it certifies sustainable management practices and supports market access.

- ***FSC (Forest Stewardship Council):***
  Global certification for responsible forest management, recognised by the EU and international markets.

- ***Closer-to-Nature Forestry Certification (EU):***
  An upcoming EU scheme to promote biodiversity-friendly management.

7.3 Cross-border and sectoral initiatives

ROSEWOOD/ROSEWOOD 4.0 hubs:

Regional networks for knowledge exchange and innovation in wood value chains.

Feel Wood (Interreg/EU):

Cross-border projects that support local timber supply chains and skills development.

7.4 Private and industry-led programmes

Private investment in wood processing:

Industry consortia, business angels and corporate R&D drive innovation and market development.

Carbon credit markets:

Private companies fund sustainable forestry through the purchase of carbon offsets (e.g. in Switzerland). May have negative impacts on wood supply and may be affected by future calamities.

Innovation contests and accelerators:

Business development programmes and contests for SMEs in the wood sector (e.g. France and Belgium).

7.5 European programmes for wood-based construction and the circular economy

Across Europe, a dynamic and expanding landscape of programmes is actively promoting the use of wood and wood-based materials in construction. These initiatives are grounded in the principles of sustainability, innovation, and the circular economy. The following section provides an overview of key programmes and initiatives, highlighting their practical benefits and their role in advancing wood-based construction practices.

Figure 1 Public vs. Private

Aspect	Public Funding Programs	Private Funding Programs
Scale	Large, national/regional, often multi-year	Variable, often project- or company-specific
Focus	Research, policy, infrastructure, market development, training, certification	Innovation, product development, market uptake, business partnerships
Accessibility	Open to all stakeholders, but often bureaucratic and competitive	Selective, based on business case, ROI, and strategic fit
Impact	Broad, systemic (e.g., knowledge transfer, market creation)	Targeted, rapid (e.g., new products, technologies, supply chains)
Examples	EU Horizon, BMEL, State Forests, ROSEWOOD Hubs, GAK/EAFRD	Industry consortia, venture capital, corporate R&D, private certification schemes

7.6 Overview of programmes and projects for wood, wood-based materials, and construction

Figure 2: some major initiatives and programmes in the Grand Region of W.A.V.E

Region	Programs & Funding schemes	Key organisations & stakeholders
Wallonia	Interreg NEW, W.A.V.E., Digital Wallonia, Walloon region grants	Filière Bois Wallonie, Agence du numérique, Walloon region, local chamber of commerce, forestry cooperatives
Grand Est	Regional aid for storage areas, modernisation, Poplar Plan, les hommes et les arbres	Région grand est, Office national des forêts (ONF), local forestry companies, nurseries, municipalities
Luxembourg	National « controlled wood » risk analysis, LSFI	Luxinnovation, Ministry of economy, Ministry of environment, LIST, local sawmills, research centres, LSFI (MIN ENV & ECO)
Saarland	Interreg, SaarForst, regional innovation grants	SaarForst Landesbetrie, Ministry of Environment, local wood industry associations
Rheinland-Pfalz	Interreg, state forest support, innovation and modernisation programs	Landesforsten Rheinland-Pfalz (Klimabündnis nachhaltiges Bauen), Ministry of environment, local wood clusters

7.7 EU and Horizon Europe Projects

Build-in-Wood (Horizon 2020)

Objective: To establish timber as the standard construction material for tall buildings in Europe.

Activities: Demonstration buildings (e.g. in Taastrup, Denmark), collaborative innovation and knowledge-sharing among the 21 project partners.

Impact: Promoting climate-neutral construction by leveraging the CO_2 storage potential and renewability of wood [1].

Feasibility: Real-world demonstrators and cross-sector collaboration make adoption feasible and scalable.

WoodStock (Horizon Europe)

Objective: Advancing sustainable wood construction and the circular economy through Living Labs.

Activities: Co-creation workshops

- Design of building elements and furniture using reclaimed timber
- Support for the New European Bauhaus initiative

Impact: Fostering zero-waste innovation and the reuse of materials to support inclusive, beautiful and sustainable design.

Practicability: Living Labs across Europe ensure region-specific solutions and stakeholder engagement.

BASAJAUN (Horizon 2020)

Objective: Develop digital tracking systems for wood materials and promote bio-based construction.

Activities: Digital traceability of wood from forest to building

Development of wood-based multi-storey buildings

Impact: Increased transparency, support for sustainable sourcing and unlocking wood's carbon storage potential in construction.

Feasibility: Digital tools and cross-border collaboration facilitate wider adoption.

7.8 Horizon Europe Calls (e.g. Cluster 6).

Objective: Supporting the New European Bauhaus and EU forest strategy by promoting renewable and circular construction.

Activities: Funding will be provided for innovative uses of underused timber (e.g. hardwoods, salvage wood and post-consumer wood), stakeholder co-creation and open-access wood construction observatories.

Impact: Driving policy change, supporting new technologies and providing financial support to SMEs and start-ups.

Practicability: Direct funding and a multi-actor approach ensure practical, market-ready solutions.

Comment HSE: The selected projects may be of interest to W.A.V.E. partners to participate in some special activities to promote the use of wood. One project is coordinated by the University of Ghent in Belgium.

7.9 Interreg and regional initiatives:

REPLACE, CircPro, FormaWood and IMIP.

Objective: To promote wood as a sustainable construction material through regional innovation and best practices.

Activities:

- Local policy support
- Financial incentives (e.g. up to €6,000 per residential building)
- Pilot projects

Impact: Encouraging the use of wood in construction, supporting circularity and reducing the carbon footprint.

Feasibility: Financial incentives and local collaboration reduce barriers to adoption.

7.10 Sectoral and industry associations:

Timber Construction Europe (TCE):

Objective: To promote timber construction and architecture across Europe.

Activities: Advocacy for harmonised standards, participation in EU policy and support for vocational training.

Impact: Strengthening the voice of SMEs, advancing sustainable building practices and ensuring regulatory clarity.

Practicability: A strong network and policy influence support consistent industry growth.

Wood Sector Alliance for the New European Bauhaus (Wood4Bauhaus).

Objective: Aligning wood sector innovation with the values of the New European Bauhaus.

Activities: Collaborating on sustainable, inclusive and beautiful design solutions.

Impact: Integrating wood construction into the broader green transition of the built environment.

Practicability: Cross-sector collaboration fosters creative, marketable solutions.

7.11 Education and training:

Erasmus+ Wood Education for Sustainable Construction (Wenus):

Objective: Modernise vocational education and training in wood and timber construction.

Activities: Joint curricula, training modules and international exchanges.

Impact: Building a skilled workforce ready to implement innovative wood construction techniques.

Practicability: Standardised training supports industry-wide upskilling and adoption of innovation.

General comments:

Programmes for wood, wood-based materials and construction across Europe are diverse and robust, spanning demonstration projects, digital innovation, regional incentives, industry advocacy and education. Collectively, these initiatives advance sustainable, circular and climate-positive building practices, establishing wood as a cornerstone of Europe's green transition.

Germany's public programmes for sustainable forestry and wood utilisation

Germany has implemented a variety of public programmes to promote sustainable forestry and wood utilisation, primarily funded by federal, "Länder" and EU sources. These initiatives aim to enhance climate resilience, support biodiversity, and develop the timber industry while addressing issues such as extreme weather damage and bark beetle infestations. Below is a summary of some key programmes:

Federal and EU-funded programmes

- ***BMEL Timber Industry Modernisation (2021)***
  Description: This programme comprises two initiatives: one providing €15 million for utilising damaged wood and promoting wood construction; and the other providing €20 million for timber industry consulting, with a focus on digitalisation, robotics and AI.

  Advantages: Directly reduces greenhouse gas emissions (e.g. wood construction cuts emissions by 56%) and incentivises innovation.

  Challenges: The scope is limited in terms of addressing large-scale forest deterioration caused by droughts and pests.

  Application: Via BMEL channels; details are not specified in the sources.

- ***Climate-Adapted Forest Management (2022):***
  Description: €200 million from the Climate and Transformation Fund (KTF) to boost the climate resilience of private and municipal forests.

  Requirements: Prioritises natural regeneration, native tree diversity, deadwood/habitat tree retention, and soil/water conservation.

  Advantages: Targets long-term forest stability and links funding to ecological practices.

  Challenges: Strict compliance requirements may limit accessibility for small-scale owners.

  Application: Through BMEL; specific process not detailed.

- ***EU State Aid for Forest Adaptation (2024–2026) (in Germany as MS).***
  Description: A €200 million EU-approved scheme to promote climate-adapted practices (e.g. planting native tree species and protecting the soil).

  Advantages: Enhances carbon sequestration and biodiversity.

  Challenges: Subject to rigorous EU state aid rules.

Application: The German authorities manage distribution, but the exact mechanism is unspecified.

- ***Forest Expert Programme***
  Description: BMEL-funded traineeships for global forestry professionals, focusing on transferring knowledge about sustainable management.

  It can be seen very positive to build international capacity ~10 fellowships per year

  Challenges:Limited scale (one-month stays only).

  Application: Via the German Forest Society (NIWA network).

Research and development initiatives:

- ***Holzwende 2020plus***
  Description: A federal project (2017–2020) developing sustainable wood markets for construction and refurbishment.

  Positive aspects: Fostered industry collaboration and market innovation, but it was time-bound with no active funding.

  Application: The project has concluded, but its methods are available through concept transfer.

Regional and supplemental programmes

- ***Gemeinschaftsaufgabe "Verbesserung der Agrarstruktur und des Küstenschutzes" (GAK/EAFR)D funding***
  Description: EU/country co-financed support for private and corporate forest transformation, including disaster recovery.

  Positive aspect: Flexible implementation across German states.

  Challenges: variable uptake (many owners forgo applications).

  Application: Through state-specific agricultural and environmental agencies.

- ***Extreme Weather Response (GAK, 2018–present).***
  Description: Federal and state funds for the remediation of drought, fire, and bark beetle damage.

  Positive: Rapid crisis support, but reactive rather than preventative.

  Application: Via the GAK 'Funding for Remedying the Impacts of Extreme Weather' framework.

  Key challenges and gaps:

  Small-scale forests: Support for private owners (less than 100 hectares) lacks clear objectives (e.g. wood production versus biodiversity), but funding accessibility: Complex application processes and variable state-level rules hinder participation.

  Climate pressures: Programmes are struggling to scale up amid worsening droughts and pests.

- ***How to apply:***
  Most programmes require engagement with the Federal Ministry of Food and Agriculture (BMEL), state forestry authorities or EU rural development offices (Länder). Specific portals (e.g. GAK) are used for state-level applications, though details often emerge via sector announcements. Private entities should monitor BMEL and EU tender updates for open calls.

  These programmes reflect Germany's integrated approach to sustainable forestry, balancing economic, ecological, and climate goals through targeted funding and strict sustainability criteria.

- ***Very good example from the Länder:***
  The Klimabündnis Bauen Rheinland-Pfalz is a strategic initiative aimed at promoting climate-friendly construction through the use of renewable and circular building materials, with a strong emphasis on wood. By supporting modular and serial construction methods, the programme fosters innovation, regional value creation, and CO_2 reduction. It plays a pivotal role in advancing wood construction across the state, aligning federal and regional efforts, and strengthening knowledge transfer between research, industry, and public institutions

Charta für Holz 2.0 (Charter for Wood 2.0) in Germany.

Charta für Holz 2.0 is a national dialogue and action platform initiated by the German Federal Ministry of Food and Agriculture (BMEL) to promote sustainable forestry and the efficient use of wood as a resource. It builds upon the Federal Government's Forest Strategy 2020 and aligns with broader climate and bioeconomy goals.

Main objectives

- ***Climate protection:***
  - Increase the contribution of sustainable forestry and wood use to climate change mitigation.
- ***Value creation:***
  - Strengthening value creation within the forestry and wood sector, particularly in rural areas.
- ***Resource efficiency:***
  - Promote the efficient and sustainable utilisation of wood to conserve finite resources.
- ***Dialogue and innovation:***
  - Foster dialogue among stakeholders from administration, industry and science to develop innovative solutions and policy recommendations.
- ***Biodiversity and ecosystem services:***
  - Support the development of climate-resilient, site-specific forests that protect biodiversity, soil and water, and provide recreational spaces.

Structure and approach

- ***Dialogue process:***
  - The Charter is a continuously evolving process that adapts to new scientific, political and economic developments.

Monitoring and evaluation:

- The Thünen Institute provides scientific support, monitoring and evaluation of the Charter's measures.

7.12 How to apply or participate?

Stakeholder engagement:

- The Charter is open to all interested parties, including forest owners, industry representatives, researchers, NGOs and policymakers. Participation mainly takes place through dialogue events, working groups and public consultations.

Dialogue events:

- Regular events and workshops are organised by BMEL and its partners. These are announced on the official Charter for Wood 2.0 website and through BMEL communications.

Working groups:

- Interested organisations and individuals can join working groups by expressing their interest to the Charter's secretariat or via the official website.

Research Collaboration:

- Researchers can collaborate with the Thünen Institute or other partners involved in monitoring and evaluating the Charter's initiatives.

General remark:

Charta für Holz 2.0 is an ongoing dialogue and policy development platform for sustainable forestry and wood use in Germany. While it does not offer direct funding, it provides a framework for collaboration, innovation, and policy recommendations. Participation is open to all stakeholders interested in shaping the future of sustainable wood use and forestry in Germany.

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Boosting Sustainable Forestry – Wood Value Chains in the Greater Region

Three cases for the next steps

Dr. Andreas Nikolaus Kleinschmit von Lengefeld
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1 Introduction and Purpose

This document presents a structured and concise action-oriented guide to support the next implementation steps of the W.A.V.E. project in the Greater Region (GR). It builds upon and complements previous work by HSE and S-WIN already delivered to the W.A.V.E. partnership by translating prior analyses and stakeholder feedback into a practical and actionable framework.

The document is intended to support decision-makers, project partners and stakeholders by providing clear strategic direction for aligning investments, governance approaches and innovation efforts with the development of resilient and sustainable forestry–wood value chains. Simultaneously, it functions as a flexible guide. The onus is on the W.A.V.E. partners to select, adapt and implement the proposed ideas according to their specific contexts, priorities and planned next steps within the project.

✔ Strategic Context

The Greater Region is home to significant forest resources and is experiencing a growing demand for climate-neutral construction and energy-efficient renovation. This unique combination creates strong potential for transforming the forestry–wood sector into a key driver of sustainable economic development. However, unlocking this potential requires coordinated action among W.A.V.E. partners.

✔ Overall Objective

The overarching objective is to develop innovation-driven forestry–wood value chains that are supported by artificial intelligence, cross-border cooperation, and coordinated funding mechanisms. The implementation approach is structured around pilot applications designed to test and demonstrate concrete solutions.

The Greater Region (Saarland, Rhineland-Palatinate, Grand Est/Lorraine, Wallonia, and Luxembourg) combines a high forest cover with strong market demand for affordable housing, climate-neutral construction, and energy-efficient renovation. By strategically leveraging public funding at the EU, national, and regional levels, this forest resource can be transformed into high-value, climate-positive products and services, while strengthening rural economies and innovation capacity.

✔ The following key challenges have been identified

The initial phase of the study has identified three central challenges:

1. The objective is to enhance the sustainable use of hardwoods and other underused resources in construction and renovation.
2. The aim is to mobilise and connect key actors who are committed to developing affordable, high-quality timber-based solutions that are aligned with the New European Bauhaus principles.
3. The partnership are committed to the advancement of logistics, storage, and digital planning across the supply chain through the application of artificial intelligence and advanced analytics.

Please find below the pilot cases for implementation.

In coordination with the W.A.V.E. project leadership and partners, three pilot cases have been selected to demonstrate how organisational, financial and innovation mechanisms can support this transformation. These cases are intended as practical examples that can later be adapted and scaled across the Greater Region:

- **Case 1 – Saarland:**

The wood sector will be integrated into existing federal and (inter-)regional programmes and structures. For example, there will be alignment with Charta Holz 2.0, cooperation with neighbouring clusters in Bavaria and Baden-Württemberg, and links to academic ecosystems such as Southwest-X.

- **Case 2 – AI-Based Innovation Hub (Wallonia/Luxembourg)**

The development of a business park near Luxembourg as an AI-enabled innovation hub for the Greater Region is underway. This initiative will facilitate the testing of new building concepts and related innovations.

- **Case 3 – New Logistics and Storage Concepts:**

The establishment of AI-supported logistics and storage systems (inspired by RELEX[1]-type solutions) as a cross-cutting infrastructure for wood value chains, with scalability across the region.

[1] RELEX Solutions is a Finland-based provider of advanced supply chain planning and optimisation software, specialising in AI-driven demand forecasting, inventory management, and logistics solutions for retail and industrial sectors. https://www.relexsolutions.com/fr/

2 Case 1: Saarland

2.1 Targeted result: In the Saarland case study, the presence of a highly interconnected ecosystem is observed, comprising investors, a cluster, and a regional framework. This framework is characterised by a coordinated agenda and a well-developed promotion system

The Saarland forestry and wood sector is characterised by the following features:

- The territory is small, but it is noteworthy for its significant forest cover, which consists of a mixture of hardwoods and softwoods.
- A limited number of local processing and construction companies, many of which are SMEs, demonstrate strong potential. However, they are constrained by scale, visibility and fragmented support.
- There are several emerging initiatives in this field, including the **Holzbaucluster Saarland**, and analytical work on regional timber supply chains led by research organisations such as **IZES** and the **University of Saarland**.

2.1.1 Framework

Conversely, Germany's national framework offers potential benefits that Saarland has not yet fully exploited.

1. The Saarland Climate Protection Concept[2] provides a comprehensive strategic framework guiding the state's transition towards climate neutrality, including a broad set of sectoral measures across energy, industry, buildings, mobility, and forestry. It defines particular, implementable actions supported by monitoring mechanisms and regular updates to ensure progress and accountability. [saarland.de]

   It therefore offers an important policy alignment opportunity for integrating forestry–wood value chain initiatives into existing climate, innovation, and funding structures within Saarland.

2. The Charta für Holz 2.0 [3]is a comprehensive framework that establishes wood as a pivotal element in the fight against climate change, promoting the creation of value and enhancing resource efficiency. It delineates a range of action areas, encompassing climate-friendly construction, material and energy efficiency, and the digitalisation of the value chain.

[2] https://www.saarland.de/mukmav/DE/portale/klima/informationen/klimaschutzkonzept
[3] https://www.charta-fuer-holz.de/

3. Neighbouring federal states such as Baden-Württemberg[4], Bayern[5] and Rheinland-Pfalz (Klimabündnis Bauen)[6] have established powerful cluster structures and coordinating units for forestry and wood-based construction, and are moving quickly on industrialised timber building, hardwood utilisation and circular construction.

4. The New European Bauhaus[7] and EU projects such as TIMBERHAUS[8] demonstrate how wood-based construction can be linked to aesthetics, social inclusion and circular design, offering a narrative framework with which Saarland can align.

5. The Southwest-X Startup Factory at Saarbrücken [9](EXIST Startup Factory) is dedicated to fostering the growth of high-potential, deep-tech and green-transformation start-ups in Saarland, as well as in parts of Rhineland-Palatinate, Luxembourg and France. The initiative aims to establish a pipeline of several hundred start-ups over a decade, with a focus on translating scientific knowledge into industrial applications.

2.1.2 A proposed Vision for Saarland's forestry and wood boosting transformation.

The vision for Case 1 is to establish Saarland as a model region for **innovative, cost-effective**, **climate-neutral, affordable housing** and **renovation solutions**.

- The Bundesland will make intelligent use of regional hardwoods and mixed forests by developing new innovative sustainable construction materials and products.
- The deployment of simple, robust construction concepts, such as "Gebäude Typ E[10]" and "Einfach Bauen[11]"-inspired solutions, is a key aspect of the project and serve as guiding principles.
- New European Bauhaus and TIMBERHAUS principles (beauty, sustainability, inclusion; circularity; well-being) should be considered in pilot projects.
- Southwest-X is utilised as a dedicated engine for wood-related start-ups in digitalisation, AI, new materials and circular construction methods and concepts.

In this vision, public funding could be used to de-risk the first generation of demonstration projects, innovation cycles and cluster building efforts, while private investors and sponsors will be attracted by clear business models and a credible pipeline of scalable projects from research to the market.

[4] https://www.cluster-forstholz-bw.de/de
[5] https://cluster-forstholzbayern.de/de/
[6] https://klimabuendnis-bauen.rlp.de/
[7] https://new-european-bauhaus.europa.eu/index_en
[8] https://timberhaus.eu/
[9] https://startup-factories.de/en/factory/southwestx/
[10] https://www.bmwsb.bund.de/SharedDocs/pressemitteilungen/DE/2025/11/gebaeudetyp-e.html
[11] https://www.einfach-bauen.net/

2.1.3 Governance: Saarland is identified as a key node in the Charta Holz 2.0 framework, with reference to regional clusters.

To establish connections between the Saarland' wood sector and national and transregional programmes, a specific governance structure should be set up.

Proposal: Set-up of a Saarland Charta Holz 2.0 Forum
A Saarland Charta Holz 2.0 Forum would serve as a centralised platform that:

- Brings together the relevant ministries (environment, economy, housing), forest owners, the wood industry, architects and planners, housing associations, research institutions and the Holzbaucluster. It could be discussed if the later one can organise it within its structure.
- Translates its actions into a Saarland-specific roadmap, which includes greater hardwood utilisation, climate-smart forest management, modern timber construction, resource efficiency and digitalisation.
- Manages the preparation of project proposals for federal funding lines and EU programmes and oversees their implementation. (if the Holzcluster or another organisation will be mandated)

N.B. The Forum can be anchored administratively in a ministry or in the cluster organisation, but it needs high-level political backing and a clear mandate to develop and implement a multi-year action plan.

2.1.4 Connections to clusters in Baden-Württemberg and Bavaria.

It is suggested that Saarland establish formal connections with active wood clusters in Baden-Württemberg, Bayern and the Klimabündnis Rhineland-Palatinate, who are currently engaged in the following projects for potential scaling up this framework to the GR:

- Timber construction using industrialised methods, including hybrid and modular systems.
- The use of hardwoods and underused species (including reuse and recycling) in structural applications.
- Training and ongoing educational programmes for architects, engineers and craftsmen to develop new skills needed.

The following distinct measures could be executed:

- A "Cluster-to-Cluster Agreement" to define the exchange of expertise, joint events, staff exchanges and joint project development.
- A regular "Greater Region Timber Summit" could be held on a rotational basis between Saarland, RLP, Baden-Württemberg and Bayern to discuss legal national and regional framework conditions and matching programs.
- A joint participation in New European Bauhaus-related calls and demonstrator projects.

2.2 Saarland programme and project portfolio ideas

2.2.1 Hardwoods for Affordable Housing and Renovation

Saarland is well-positioned to serve as a model region for the development of innovative timber construction solutions, with a focus on cost-effectiveness, affordability and simplicity.

- Gebäude Typ E (simple, standardised building types) and the lessons from the "Einfach Bauen" research houses in Bad Aibling (TUM) should be used as models for low-complexity, robust timber structures with minimal layers and clear material logic.
- A primary focus is on small to medium-scale social housing projects, additions to existing buildings, and serial renovation of multi-family housing.
- In order to develop a "Saarland Timber Housing Catalogue", a collaboration with universities, architectural schools and industrial partners should be engaged. This catalogue will contain a range of standardised, pre-approved solutions that use regional hardwoods wherever possible.
- Circular design principles should be integrated into the process, for example via the use of modular prefabricated elements that can be dismantled, reused or recycled.
- Public funding can cover the costs of feasibility studies, prototyping, performance monitoring and documentation. Once proven, such building concepts can be scaled by housing associations and municipal housing companies.

2.2.2 The Southwest-X Forest & Wood route

Southwest-X offers an ideal framework for a dedicated Forest & Wood Track.
In collaboration with Southwest-X an annual call for forestry-wood-related start-ups could be established. The use of artificial intelligence in forest monitoring, digital inventory and risk models, the production of new engineered wood products using hardwoods, the creation of design platforms for circular timber interiors, the development of renovation planning tools and the establishment of circular construction marketplaces are just some of the ways to lead the way in sustainable timber production.

An inspiration or even a close collaboration with design-oriented partners such as K8[12] and the e.g. Circ-2-Zero initiative[13] for wood products. Such a strategic partnership aims to promote the adoption of circular product-service systems and design for disassembly, aligning a commitment to sustainability and innovation.
The programme includes the following elements:

- Access to mentorship from experienced entrepreneurs in the wood sector
- Legal and financing advisory services
- Access to laboratory facilities at the university and its cluster partners

[12] https://k8.design/
[13] https://interreg-baltic.eu/project/circ-2-zero/

The involvement of private sponsors (sawmills, construction companies, housing providers) as early adopters and co-investors could be foreseen when suitable.
Investor benefits include early access to innovation, visibility in a high-impact climate and housing theme, and the option to scale successful concepts beyond Saarland into the Greater Region, Germany and Europe.

2.2.3 Three incentive systems

There are three incentive systems that could be combined and coordinated through a Forum and the cluster.

1. The Regional/Interregional Innovation Fund for Wood is a valuable resource for businesses in the timber industry.

A modest yet adaptable grant programme is available for SMEs and start-ups, offering funding for feasibility studies, prototypes and pilot projects (with budgets ranging from €50,000 to €200,000 per project).
The project is co-financed by the Land, ERDF and potentially INTERREG, and is open to partners from neighbouring regions in France, Luxembourg and RLP.

2. Partnership with Technikum Laubholz

A partnership can be established with the Hardwood Technology Center in Göppingen (https://technikumlaubholz.de/) to identify, promote, and implement innovative, sustainable, and market-relevant technologies for the use of hardwood in the regionally based economy.

3. A partnership with Swiss Timber Startup Incubator14.

A strategic collaboration with a specialised timber start-up incubator in Switzerland could be elaborated. The aim of this collaboration is to adapt their methodology and investment logic to the Greater Region and open up for new ideas and business developments.
This could lead to following upcoming events and initiatives:

- Joint demo days
- Start-up support with joint experts
- Co-investment in promising start-ups
- Cross-border testbeds

2.3 Investor benefits and risk-sharing

Attracting private investors and sponsors requires clearly articulating the benefits of a project.

[14] https://timber-startup.ch/en/home-en/

From an economic perspective, there are several key benefits to consider. Firstly, there is the higher added value per cubic metre, which is significant in terms of potential revenue. Secondly, new business models are being developed, such as those offering services, data and circular solutions. Thirdly, access to growing markets in climate-friendly construction and renovation is now a reality.

A company must position itself strategically at the outset in relation to an emerging European regulatory and funding landscape. This landscape is the perfect place to find low-carbon materials and circularity.

Risk management: public co-funding reduces technology and market risk in the early phases; cluster support and interregional partnerships offer diversified markets and knowledge.

Please note: the intention of these elements is to stimulate discussion and provide inspiration. It is vital that they are subject to a critical review, adapted accordingly, and aligned with the specific needs, priorities and operational contexts of the W.A.V.E. partners.

3 Case 2 – Greater Region Wood Innovation Hub Collaboration of the Ideluxe-Galaxia (Libin[15]) parc and the Luxembourg AI-strategy[16].

The concept is clear: strengthen existing infrastructures in Wallonia (Ardenne Bois cluster and Durabilis platform in Arlon) as a coordinated innovation hub. The hub integrates physical facilities, testing environments and digital infrastructure, while connecting to Luxembourg's AI and logistics capabilities.

Wallonia could take into consideration the planning of their business park dedicated to the wood sector to be part of the activities at the Ideluxe-Galaxia (Libin) site. This site is earmarked for use as a specialised innovation and business area, complete with laboratories, workshops and office space for companies and start-ups operating within the wood value chain.
In parallel, Luxembourg has developed a strong profile as an AI-enabled logistics hub, combining large logistics operators, digital innovation infrastructures, and high-performance computing capabilities. This background is highly relevant for the wood sector, which faces challenges including fragmented supply, volatile demand, and limited digitalisation.
The Business Parc can therefore be positioned in the GR as:

- The establishment of a physical and digital gateway between forest resources in the Greater Region and international markets as a key objective.
- A living lab could be established to develop AI-based logistics and storage solutions that are tailored to the wood sector. (link to Case 3)
- This forms a complementary part of the GR innovation ecosystem, along with enlarged Southwest-X and respective regional clusters. (link to Case 1)

3.1 The park concept encompasses infrastructure and services.

3.1.1 Physical infrastructure

State-of-the-art laboratories and pilot lines for wood processing and product development should be developed. These facilities include hardwood lamination, surface treatments, digital grading and sensor-equipped storage.

- Launching of new-Prototype Workshops. These workshops are designed for the construction of components, renovation modules, interior elements and furniture.
- Co-working zones for a range of business types, including start-ups, design firms, IT companies and cluster organisations.

[15] https://www.idelux.be/fr/parc-dactivites-economiques-libin-galaxia
[16] https://gouvernement.lu/en/dossiers.gouv2024_smc+en+dossiers+strategy-ads2030+strategy-ads2030.html

Outcome could be: demonstration buildings are constructed using innovative wood construction systems. These buildings serve as showcases for investors, policymakers and the public. Inspiration for these buildings can be drawn from NEB demonstrators or hybrid timber projects.

3.1.2 Digital Infrastructure

A high-performance data infrastructure connected to Luxembourg's AI and HPC[17] assets is enabling large-scale simulation and optimisation of regional wood flows.
It is essential to establish secure platforms for the purpose of facilitating data sharing between forest owners, processors, traders and construction firms. Such platforms may take the form of data trusts, standardised interfaces and governance rules.
Access to AI development environments is then and now available for start-ups and SMEs. These environments include tools for demand forecasting, routing, inventory optimisation and predictive maintenance.

An outline of the latest developments in AI-based logistics and storage concepts.
The primary added value of the case is the transfer of an AI-based logistics concept to the wood sector.

3.1.3 Current challenges in the field of wood logistics

The case can describe typical challenges:

- The supply is seasonal and event-driven, with high uncertainty due to external factors such as storms and beetle outbreaks.
- The current system of logging and processing timber is too costly and complicated. This results in suboptimal allocation and partly high levels of waste or underused resources.

"We are currently experiencing high inventory levels at various points in the supply chain, including forest depots, sawmills and stockyards. This is having a detrimental effect on our capital and there is a risk of degradation.
There is a lack of integration between forest planning, sawmill production, intermediate storage and construction site demand. "

➔ ***Solution ? Idea could be that a logistic platform is integrated to the IDLux parc ?***

[17] https://luxinnovation.lu/fr-lu/news/nouvel-appel-a-projets-pour-stimuler-l-innovation-dans-les-domaines-du-hpc-et-de-l%E2%80%99ai

3.2 AI-enabled global solutions to structure the GR logistic, anticipate demand and local production

Inspired by RELEX[18]-type solutions and the logistics know-how of W.A.V.E. partners, AI can be applied to:
Demand forecasting involving the process of accurately predicting future demand for a range of wood products:

- This forecast is based on careful analysis of key indicators, including housing and renovation programmes, policy changes, and macroeconomic trends.

3.2.1 Inventory optimisation

- The process of calculating optimal stock levels by product, location and time, with the objective of reducing overstock and stock-outs while maintaining service levels.

3.2.2 Routing and transport planning:

- The optimisation of routes and loading for trucks and trains is a process that takes into account weight, volume, moisture, product mix and customer priorities.
- Dynamic allocation involves the continuous reallocation of logs and sawn timber between depots and customers, as new information becomes available.

The park is well-suited to hosting pilot projects where regional stakeholders can share data and test AI algorithms on actual flows, with clearly defined KPIs (such as inventory reduction, service level enhancement, waste reduction, and emission reductions).

The Belgium Business Park should be positioned as part of a broader Greater Region innovation corridor, connecting:

- Saarland is home to the Southwest-X, Holzbauclusters and several research institutes.
- Luxembourg has a number of well-developed business parks, , as well as national innovation agencies. + the Luxembourgish AI ecosystem and AI factory, + Meluxina supercomputer.19
- The Rhineland-Palatinate, Wallonia and Grand Est regions have a strong focus on the forestry and wood industries, with well-developed clusters and active research sectors.

[18] Finnish company
[19] https://luxembourg.public.lu/fr/investir/innovation/meluxina-superordinateur.html

3.3 The following funding scheme could be developed for the park and its projects, and could be replicated the GR.

- Potential funding sources to be outlined: National Luxembourg funding for regional development, innovation and logistics modernisation. (to check again if it's really this storyline considering it's Wallonia)
- The European Regional Development Fund (ERDF) and the Interreg programme provide funding for cross-border infrastructure and innovation projects.
- Horizon Europe calls for the development of artificial intelligence (AI), digital twins, circular industries and smart logistics, while Digital Europe is promoting the establishment of AI testing and experimentation facilities.
- Private investment from logistics companies, timber groups, and financial investors seeking exposure to green infrastructure and digitalisation.

To adapt the case to the GR, a phasing is proposed:

1. The planning and design phase encompasses governance, concept development, design, and partner mobilisation.
2. Construction and initial fit-out. ?
3. A pilot phase should be initiated with a selection of companies and start-ups.
4. The next stage of the project is to scale up and integrate with the wider Greater Region ecosystem.

4 Case 3: Artificial Intelligence (AI) in the Management of Logistics and Storage in Wood Supply Chains

Across the Greater Region, wood supply chains are fragmented and under-digitalised. They face strong volatility in both supply (climate risks, pests, storms) and demand (construction cycles, renovation waves, policy changes).
AI-based logistics and storage solutions, similar to those offered by RELEX solutions[1] in the retail and supply chain sectors, have the potential to significantly improve performance by reducing inventory, waste and stock-outs, and by enhancing responsiveness and resilience.

The objective of Case 3 is to design a cross-border innovation initiative, entitled "AI for Wood Logistics & Storage", that will:

- Provide a shared digital platform and AI tools for forecasting, inventory and routing across the Greater Region.
- Integrate forest data, industrial data and market data into a single adaptive system.
- Enable the changes described in Case 1 and Case 2.

4.1 The architecture of the AI solution

The case should present a modular architecture that is comprehensible to both technical and non-technical stakeholders.

4.1.1 Data layer

- Forest data: This includes information on species composition, stand age, planned harvest volumes, health indicators and damage reports.
- Industrial data: This includes sawmill capacities, product ranges, production schedules, stock levels and order books.
- Market data: housing and renovation programmes, tender pipelines, price indices, macro indicators.

Logistics data: transport capacities, routes, depot locations, handling costs and emissions.

N.B. All data must be harmonised and stored in a secure, interoperable data space with clear governance rules (i.e. who can see what, and under which conditions).

4.1.2 Analytics and AI module

The forecasting module utilises historical data and external drivers to predict demand for different wood products, by region and time horizon.
The inventory optimisation module is a key component of the system, responsible for calculating target inventory levels for each product and location. It also sets reorder points and simulates the impact of different strategies, providing valuable insights for optimising inventory management.
The routing and transport module has been developed to optimise dispatching and routing under constraints (time windows, capacities, product compatibility).
The scenario and risk module is designed to simulate unexpected events (e.g. storms, pest outbreaks, policy changes) and evaluate resilience options (e.g. alternative suppliers, reallocation of stocks, flexible contracts).

4.1.3 User-friendly tools

Dashboards tailored to the specific needs of forest owners, sawmills and traders as the data is shared (4.1.1). These dashboards provide a comprehensive view of stock levels, flows and key KPIs.
Planners' workspaces are where experts can adjust AI suggestions and document decisions.
Comprehensive APIs for seamless integration with existing ERP and planning systems within corporate environments.

4.2 Roadmap for the pilot implementation in the Greater Region.

To make the concept tangible, it is suggested that the case propose a phased pilot approach.

4.2.1 Phase 1 – Preparation and Design (time is weeks, months, years?)

The establishment of a Greater Region AI Wood Logistics Steering Group is recommended, comprising representatives from clusters, companies, logistics providers, research institutions and administrations.
Please select a limited number of pilot partners (e.g. 2–3 forest districts, 2 sawmills, 1–2 timber construction companies, 1 logistics company in each participating region).
Please define the use cases and KPIs (i.e. inventory reduction, service levels, CO2 emissions, response time to shocks).
+ data collection aspects ? + Needs and expectations, governances etc

4.2.2 Phase 2 – Prototyping and testing (time is weeks, months, years?)

The first version of the data platform and AI modules should be implemented on a limited scope, covering selected products and routes.

To assess the effectiveness of the new system, it will be necessary to run it in parallel with the existing planning methods for a defined period. This will allow a comparison to be made of the performance of the two systems. (to the forest scall the comparison could take years)
It is essential to collect feedback and refine models, user interfaces and business rules.

4.2.3 Phase 3 – Scaling and Integration (time is weeks, months, years?)

The next step is to gradually include more companies and product categories, and to expand geographic coverage across the Greater Region.
The AI system should be integrated with the Business Parc infrastructure (Case 2) and the Saarland cluster structures (Case 1).
Developing training programmes for planners, dispatchers and managers in using AI-supported tools.

4.3 The following presentation will outline the business models and the role of RELEX[1] and business angels.

The case should examine viable business and governance models:

- Platform as a Service: A central provider (e.g. a consortium including a technology company such as RELEX, clusters and a public entity) offers the AI platform as a subscription service to participating companies, with tiered pricing.
- A public-private partnership is a collaborative arrangement between the public and private sectors, whereby the initial development and pilot operation of a project is funded by public programmes, and the long-term operation is financed through user fees.

Business angel model or VCs?

- A company such as RELEX may make an early investment as a strategic partner to co-develop a vertical wood solution. In exchange for this investment, the company would receive a share in future revenues or co-ownership of the IP.

The added value for such a partner lies in:

- Access to a new vertical (forest-based industries) with global scaling potential.
- Access to a variety of data sets for the training and improvement of algorithms.
- A compelling sustainability and climate narrative that will resonate with clients and investors.

4.4 Funding sources

Potential funding instruments include:
At EU level, Horizon Europe is the key initiative, with its focus on digitalisation of industry, circular and bio-based industries. There are also calls oriented towards the New European Bauhaus, promoting the climate-smart use of wood and digital tools, as well as programmes for AI and data spaces.
Digital Europe is committed to fostering innovation and development in the fields of artificial intelligence and advanced digital technologies by providing support for testing and experimentation facilities.
Interreg and ERDF provide funding for cross-border pilots, cluster cooperation and infrastructure.

National: Germany's programmes include digitalisation and climate-smart forestry; Luxembourg's support is for logistics innovation and AI; and there is potential for instruments from France and Belgium.

5 Conclusion: The development of a new European risk culture in the forestry and wood sector is a key priority.

The three cases demonstrate how public funding and strategic governance can enable a shift from isolated projects to a coherent transformation of forestry–wood value chains in the Greater Region. The following key elements characterise the emergence of a new "European risk culture", as illustrated by these examples:

5.1 Shared Experimentation and Learning

5.1.1 Public funding facilitates the creation of protected spaces that are conducive to experimentation.

Innovators can test new technologies, materials, and business models without bearing full individual risk, e.g the production of hardwood-based housing prototypes in Saarland and AI-driven logistics pilots will be implemented in Luxembourg.

N.B. This approach has the effect of transforming risk into a collective learning process.

5.1.2 The first point to consider is multi-actor governance and transparency.

Structured platforms, such as forums and steering groups, facilitate the convergence of diverse stakeholders: Forest owners, Industry, Research institutions, financial actors, Civil society,

These formats enable:

- A committed to transparent discussions about risks, including climate impacts, market volatility and technological uncertainty.
- A decision-making process regarding mitigation strategies will be collaborative.

N.B. In this business, risk is shared, openly discussed and jointly managed.

5.1.3 The integration of digital and material innovation is a key priority.

- Material innovation encompasses the following: Hardwood use, circular products, modular approaches.
- Digital innovation encompasses the following areas: smart logistics and data platforms

N.B. The combination increases resilience and flexibility, while requiring new skills and acceptance of data-driven decisions. The first point to consider is the establishment of interregional risk-sharing mechanisms.

5.1.4 Cross-border cooperation in the Greater Region facilitates:

- Shared funding instruments
- Joint incubators and platforms.
- The integration of markets and data infrastructures is of paramount importance.

N.B. This enables the distribution of risk across regions and stakeholders, and local shocks can be absorbed collectively, thereby strengthening overall system stability. The first point to consider is the cultural and social dimension.

Adherence to frameworks such as the New European Bauhaus assists in achieving the following objectives:

- It is vital that real societal needs are addressed, such as the provision of affordable housing, quality of life, heritage and landscapes.
- It is vital to increase public acceptance of innovation and experimentation.

N.B. This measure is designed to mitigate financial, social and political risks, so Innovation becomes socially grounded and widely supported.

6 Final conclusions

The forestry and wood sector in the Greater Region has the potential to become a model for a new European risk culture and the transformation to a circular bioeconomy zone:

- A culture that is not averse to risk.
- A network that encompasses the entire value chain and is not afraid to look beyond its own boundaries.
- The objective is to manage it collectively, transparently and intelligently.
- The objective is to use public funding to encourage private initiative and accelerate a climate-positive and just transition.