



# The Forests Dialogue

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ENGAGE! EXPLORE! CHANGE!

## CPFP Field Dialogue on Mass Timber, Finland

11-14 September 2022 | Finland

### Co-Chairs' Summary Report

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## 1. INTRODUCTION

The Forests Dialogue (TFD) Climate Positive Forest Products (CPFP) Initiative seeks to build agreement amongst stakeholders around opportunities, challenges, and knowledge gaps related to utilizing forest products as climate solutions, using mass timber construction materials as an entry point. Mass timber is a newly developed category of wood products (including cross-laminated timber (CLT), laminated veneer lumber (LVL), glued laminated timber (GLT), plywood, and others) that enables construction of large buildings with wood. The initiative engages with topics across the full value chain from sustainable forest management to the potential impact of mass timber construction practices on regions where housing booms are predicted.

In September 2022, the Forests Dialogue (TFD) convened a CPFP Initiative field dialogue in Finland to explore key themes in the context of the mass timber value chain in Europe. The Field Dialogue followed a Scoping Dialogue in May 2021, which explored a range of stakeholder perspectives at the global scale and addressed questions about the positive and negative impacts that scaling up mass timber construction practices might have on climate and forests.



Dialogue participants.

The Finland Field Dialogue included 41 participants from forestry, architecture, conservation, and construction sectors representing private sector, landowners associations, research, academia, civil society, and government. Half of those that participated are from Finland while other participants came from wider Europe, Brazil, India, Singapore, South Africa, and the United State of America. The dialogue was held over two days of field visits and two days of plenary discussions and designed around the following goals:

- ➔ To build a collective understanding of stakeholder perspectives and concerns, knowledge and research gaps, and priorities related to using ‘mass timber’ construction practices to mitigate climate change, while identifying areas of disagreement and agreement, especially as these issues relate to forests.

- ➔ To foster collaboration across stakeholders that are involved in the mass timber value chain, allowing forest owners, timber producers, policy makers, NGOs, and architects/developers to learn from one another and synthesize the current scientific knowledge on the topic.
- ➔ To co-create an actionable plan that presents a path forward towards mobilizing stakeholder networks.

A background paper<sup>1</sup> provides information on the wood products value chain focusing on European and Finnish contexts including current practices in forest management, mass timber manufacturing, and construction as well as relevant policy and knowledge gaps in social and environmental safeguards.



Dialogue participants visit a production forest in Kouvola region.

## 1.1 Field visit overview

Participants in the field dialogue visited five key sites reflecting the forest-to-product value chain. These included:

- ➔ a production forest in the Kouvola region managed by UPM;
- ➔ a protected forest set-aside managed by UPM;
- ➔ a family forest managed for multiple values;
- ➔ a manufacturer specialized in the pre-fabrication and assembly of CLT and LVL elements (Timberpoint, Loviisa);

<sup>1</sup> [https://theforestdialogue.org/sites/default/files/tfd\\_cpfp\\_finland\\_backgroundpaper\\_2022.pdf](https://theforestdialogue.org/sites/default/files/tfd_cpfp_finland_backgroundpaper_2022.pdf)

- ➔ a completed wooden structure with CLT components that has been in use for nearly 10 years (Haltia – the Finnish Nature Centre, Espoo); and
- ➔ an active building construction site where GLT, CLT, and LVL components are being used (Event Centre Satama, Kotka).

During these visits participants explored questions around forest ownership and management practices and linkages to wood production, certifications, markets, pre-fabrication, construction with wood and climate.



Dialogue participants visit a protected forest set-aside managed by UPM.

### 1.1.1 Insights on Finnish forests

- ➔ 76% of Finnish land area is covered by forest (highest in Europe, average 35%).
- ➔ Nearly 10% of Finnish citizens are forest owners—600,000 private forest owners of a population of 5.5 million.
- ➔ The forest management company extension service provides forest management advice to family forest owners taking into account the owners' goals. In response to an increase in market demand, companies would most likely try to enroll more families in management plans/contract agreements.
- ➔ Through visiting a UPM production forest site we learned about forest management practices. They use an even aged stand forest management approach, on grounds that this mimics natural boreal forest cycles. Species are mostly Silver birch (and other broadleaves, 10% of forest area), Norway spruce (25% of forest area), Scotts pine (64% of forest area). Age diversity is maintained with mosaics at the landscape scale. Mosaics within UPM lands are called compartments with the average size of a few hectares.

- ➔ Depending on land and soil quality, a rotation period of 60-100 years is the typical management approach. Thus, forest product markets have limited influence on forest management practices because long rotation times limit the influence short-term markets signals can have.
- ➔ UPM typically does two thinnings before a final clear cut harvest. The first thinning will remove 50% of stems which go towards pulpwood. The second thinning removes 50% of stems which go towards pulpwood and some timber. Harvests are sorted by species and by diameter for pulpwood or timber. In final harvesting, large diameter bottom logs are for timber and small diameter top logs are for pulp.
- ➔ Typically, all the standing dead wood is left to the forest to increase biodiversity.
- ➔ The EU is driving discussions on best use of forests via goals related to regeneration, biodiversity, and carbon values.
- ➔ There are few old-growth forests in Finland, especially in southern Finland. Compared to relatively young forests in some National Parks in Finland, some set-asides can have values unique to more mature forests.
- ➔ Climate change, intensifying heat and drought have had noticeable impacts on forests for over a decade. Bark beetle has been a pronounced issue since 2012.
- ➔ To combat climate change impacts in the forest tree variety is increased in the forest. Typically, 20% of broadleaves are added in spruce and pine forests.



Participants discuss forest management practices in Finland.

### 1.1.2 Insights on raw materials and manufacturing

- ➔ Logs are utilized for the timber and veneer products in the process. Raw material is optimized in production processes to gain most value from the log.
- ➔ Mass timber products are manufactured based on customer demand. Elements are usually prefabricated in production to support easy and fast assembly.
- ➔ Mass timber producers can also help customers on technical design (building physics, fires, acoustics, environmental impacts) on mass timber structures.
- ➔ Generally, production of mass timber products including LVL/CLT is more expensive than

conventional materials by volume, but construction time and some related costs are lower.

- ➔ Leftover cuttings and scraps are used for energy. Also, alternative solutions are investigated for recycling.
- ➔ Environmental impacts of the construction products are communicated via Environmental Product Declaration (EPD). The EN 15804 standard provides guidance on how to make and communicate on EPD, and in total 36 different environmental indicators and parameters are reported. In practice, despite the standardization manufacturers need to provide different EPDs for different countries.

### 1.1.3 Insights on building construction and design

- ➔ **First building visit:** The design used a hybrid model, using mass timber and wood in many areas but with a preference for concrete and steel in certain parts of the building. Concrete was preferred for building foundations, and steel trusses were a cheaper alternative to wood at the time. In the construction process changes to the building materials were made, yet the building architects felt this did not change the building design or final appearance. For example, making the support beams out of GLT was obvious because they are lighter weight than steel beams, but building the roof out of wood was added after the design phase. Most structural wood will not be seen in the finished building, instead it will have an interior finish on surface wood for acoustics and external cladding will protect wood from elements.



Touring a building in construction with mass-timber components.

- ➔ **Second visit:** An existing Nature Centre building with 10 years active use by visitors. Building appearance, should that building was well designed and serve its purpose well in use. Almost all structural parts (CLT) were visible and created interior.
- ➔ The use of wood was desired for sustainability considerations but also for design – the wood interior will be inviting when compared to the cold weather, wind, and water outside.
- ➔ Regulations with buildings and fire codes are country specific. Improving to promotion of wood in construction has taken place by regulations, earlier regulations were discriminating wood as construction material for taller buildings.

- ➔ Although there exists a political desire to build public buildings with wood to promote local development, there is a debate on the local need for such buildings since taxpayers bear the costs. One of the sites visited – a public building made from wood, CLT, and LVL – elicited such debate.
- ➔ Building level climate declaration (Life Cycle Assessment based) will apply in Finland by 2025.
- ➔ Questions were raised regarding the performance benchmarking and how construction phase emissions can be improved.
- ➔ In Finland, regulations and public opinion are encouraging material recycling and reuse. In practice waste legislation presents challenges for recycling. To improve wood recycling there would need to be operator pressure to ensure construction material circularity and recycling. The main challenges are the logistics between the companies and construction sites and large distances.



Dialogue participants visit a forest in Finland.

## 2. KEY THEMES

Dialogue discussions were designed to identify both specific challenges and opportunities in various parts of the mass timber value-chain as well as questions, strategies, and cross-cutting themes that apply to the value-chain as a whole and its potential role in climate change mitigation. The following sections reflect the groupings of the value chain used for discussions and include identified challenges and opportunities for each theme and prioritized strategies to address challenges and barriers.

### I. Forests and land use

*Priority 1: Public perception and social license to operate in forests*

### II. Raw materials and manufacturing

*Priority 2: Increasing use efficiency of engineered wood*

### III. Design and the built environment

*Priority 3: Future city*

### IV. Cross-cutting themes

*Priority 4: Definition scoping: Terms and definitions for wood in building*

*Priority 5: Coalition of the committed*

## 2.1 Key theme: Forests and land use

### 2.1.1 Forests thought experiment

The dialogue convened a ‘thought experiment’ to prompt dialogue participants to think about forests and the connection to value chains in a new way. The co-chairs posed the question:

**How might we turn the model of forests for wood production on its head through envisioning what forests would look like without harvesting goals?**

Participants were asked to imagine how future wood products and raw material needs might be met as a byproduct of healthy managed forests. Participants discussed how might we reimagine the current production models through looking at challenges and issues from the forest’s point of view; what mix of forest management approaches would be used if managing for biodiversity and/or for carbon storage and sequestration. Viewpoints expressed during this discussion included: that most non-timber values of forests would likely be enhanced with continuous cover forest management, rather than clear-cuts; because most forests in Finland are highly modified and not in a climax or old growth state, management measures such as thinning, could assist the succession of forests to a more natural composition; timber harvests associated with such management might tend to be smaller stems with some larger softwood timber removed to make space for native hardwoods; all of this needs to be set in the context of revenue earning expectations of family forest owners.



Co-chairs Rod Taylor and Ana Bastos introduce a forest thought experiment.

### 2.1.2 Key insights on forests and land use

Participants reflected the many values and purposes for which forests are managed a in response to diverse stakeholder expectations, while recognizing that forests cannot be the solution to everything. While the starting point for the dialogue was the potential roles for forests and forest products in mitigating

climate change, the field visits illustrated how the same forests are expected to meet production, biodiversity, habitat, cultural, and livelihood needs. These conflicting goals in the management and use of forests create political and social tensions.

Participants described approaches for managing forests as a carbon sink such as extending carbon cycle through storage in long-lived wood products, as well as opportunities to minimize carbon emissions in forest management practices. Participants noted advances in understanding and tracking the impact of various forest management practices as well as remaining gaps and needs for knowledge exchange. Yet, participants urged that we must make use of the knowledge we have now. We should not wait to have the perfect knowledge before acting and thus policies should be frequently updated to keep pace with advancing knowledge. In practice, long-term forest management planning involves ecological landscape plans and biodiversity assessments to identify, conserve, and restore ecosystems and to maintain the ecological and carbon sink properties of growing forests.

Media attention on forests, and therefore public perception, tends to associate forest management with extraction from or abuse of forests and downplay potential positive impacts and sustainability of production forestry. Some participants expressed that forestry is too narrowly focused on economic returns over ecological considerations that would require extending rotation lengths, increasing species diversity, or closed canopy management. They called for safeguarding mass timber construction with safeguards for forests management including biodiversity, social and sustainability considerations. Participants also pointed out the increase in population and increased demand for wood products globally, and their impacts on forest use.

Despite these different perspectives, participants were in broad agreement that sustainable forest management practices and positive public perception and social license is key to advancing the use and management of forests. People's connection to forests and forest products presents opportunities to increase public understanding, as does the positive health implications of wood, trees, and forests; open availability of data in many countries for forest management planning; cooperation between public and private entities; and locally recognized certification schemes with checklists.

### 2.1.3 Priorities related to forest and land use

#### **Priority 1: Public perception and social license to operate in forests**

Participants identified public and building industry perception of forest management as a priority theme to advance in order to increase the use of wood in buildings as a climate change mitigation strategy. Participants recognized that current messaging and communication strategies are either ineffective or lacking a concise message. They noted the presence of different actors with different messages that are sometimes conflicting or fragmented. The public and those outside the forest sector are often confused and unable to identify credible sources. To reduce the fragmentation of voices and conflicting information, participants suggested a systematic messaging approach.

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**Priority 1: Public perception and social license to operate in forests** *(continued)*

Messaging on forests and wood could be driven by the key message to “use wood wisely.” Wise use includes environmental, social, and economic aspects of sustainable wood use and captures the ethos of the whole value chain discourse. Participants noted that the unique cultural and social characteristics and challenges of different regions requires regionally adapted messaging. For example, in some locations demand for wood is driven by perceptions of affordability, which will require specific messaging.

Participants recommend that the forest sector adopt a simplified and streamlined narrative that combines emotional and technical content. The shared narrative can then be adapted to regional objectives and diverse audiences. To help the public understand the positives of sustainable forest management the narrative needs to make forestry and forest management attractive, interesting, fun, positive through using social media, trendy visuals, and photos, and trusted (and trust-able) storytellers. Participants encouraged the use of a personal message, applying a value-based lens, and tackling emotional aspects of cost, feeling, health and aesthetics. There is a need to share knowledge outside the sector through engaging public, industry, and NGOs in dialogue.

## 2.2 Key theme: Raw materials and manufacturing

### 2.2.1 Key insights on raw materials and manufacturing

The second grouping in the mass-timber value chain covered the processing of roundwood through to mass-timber component manufacturing. Participants discussed the interconnectivity of wood product markets such that only part of a single log will go into creating a mass-timber element while other wood will be diverted to other wood supply chains. Wood material is optimized for production processes of different wood products, CLT was developed to use lower value sawn goods to create more value from them. CLT is an innovation to provide new kind of solution for buildings and great value from wood.

Given that the demand for mass timber products and the market



Visiting a manufacturer specialized in the pre-fabrication and assembly of CLT and LVL elements.

situation are constantly changing, participants reflected on the new developments in the manufacturing process. The supply chain in Finland involves multiple specialized points from manufacturing, further processing, and pre-fabrication of wood components. Participants identified the current nature of the manufacturing industry as highly customized with different manufacturers producing engineered wood products tailored to the specifications of their clients. It was concluded that the current nature of the mass timber products and markets will be different from what will be seen in the future due to these dynamic, highly customized demand and supply trends.

New product innovations and product developments promote greater material and energy efficiency and value in wood products production – as well as in the entire value chain. Participants noted the Life Cycle Assessment (LCAs) and Environmental Product Declarations (EPDs) as tools to identify opportunities for increased efficiency and circularity of wood materials and processes over the product life cycle or several life cycles. In total environmental impacts are evaluated and improved systematic. The LCA demonstrates product carbon storage which can be included in the building level assessment.

Participants noted some changes in workforce dynamics and demand associated with a shift to mass-timber. Given that wood components/elements are prefabricated, the size of workforce needed on construction sites is reduced, and the skillset required to install mass timber can be very specific – often different from skillset required for general building construction.

In thinking about future scenarios and the progress needed for raw materials and manufacturing, participants explored whether small tree stems can be used in the production of climate smart engineered wood products. The use of small diameter stems that are currently used for pulp, fibre boards and energy could drive greater climate benefits as a long-lived wood product. Further development is required to introduce new wood species. Participants highlighted the opportunity for engineered wood, such as CLT, to use damaged and salvaged trees, such as those killed by bark beetles, yet currently this is not a large part of wood flows.

## 2.2.2 Prioritized strategies related to raw materials and manufacturing

### **Priority 2: Engineered wood, increase use efficiency**

Responding to the current wood use efficiency, maximizing the use of raw materials through efficient and effective manufacturing processes was identified as an important focus area to deliver on the potential of mass-timber. Some calculations estimate that when considering wood material for CLT, typically 30% of a tree will become CLT, while the remaining material will go into other uses such as chips or pulping, sawn dust for fibre boards or pellets, bark for bioenergy. Participants believe it is important to recognize wood as a material with different sub-uses that are best suited to specific situations, especially softwoods and hardwoods. Participants raised key questions related to risk and the current use of biomass in CLT manufacturing.

Participants suggest crafting a vision for the future where efficiency is re-imagined. That is, considering efficiency as a whole system that puts into account efficiency of trees, wood products and buildings. Bioregionalism allows us to think about solutions in a wider perspective. This new vision will inspire others to actually use wood to save the forests – reducing fire risk while using resources efficiently and optimally.

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**Priority 2: Engineered wood, increase use efficiency** *(continued)*

This means understanding efficiency as using fibre in the best way within the structural element. For example, in glulam technology components are designed and manufactured specifically to the building design. The components are manufactured to maximize fibre quality efficiency by matching the structural integrity and strength needs at specific points in the component.

Participants suggested increasing CLT efficiency by putting more biomass into CLT and using larger diameters of timber. Participants note that damaged trees with structural supports can also be used as raw materials for CLT. If technology advances to use smaller diameter trees, mass timber can provide demand for biomass removed through thinning. Also, alternative wood species beyond the two to three species typically used for mass timber should be investigated via technological possibilities. To minimize wood wastes, particularly from demolition, re-using woods as fibre was also suggested as a strategy to optimize resource efficiency.

To increase mass-timber use, participants note that different sizes and geometries of CLT used in buildings should be explored and accepted. Also, there needs to be an alignment of technologies and efficiency by using standardization to drive systems of efficiency such that we find a sweet spot for different products. This will then help in lowering the amounts of wood per unit.

**2.3 Key theme: Design and the built environment****2.3.1 Thought experiment: Biocities**

The dialogue convened a second ‘thought experiment’ around the idea of “bio-cities.” To explore this experiment, the co-chairs asked participants to

**Imagine a sustainable future city – the perfect bio-city and the role of wood in that mix.**

Participants then considered how concrete, and steel can be replaced with wood and what the manufacturing process would look like. In thinking about a future bio-city, participants were drawn to consider what the forest would look like, and whether having the chance to think about other approaches would give the opportunity to think about different inspiration and aspiration in the near future.

**2.3.2 Key insights on design and the built environment**

Discussions on design and the built environment centered around the challenges and barriers in the use of wood in buildings. Participants noted the role of perceptions in shaping material use amongst the public and building construction stakeholders, particularly architects, designers, and engineers. The social perception of wood influences building designs and wood use. For example, there is a perception of wood in some tropical areas and in the global south as a poor man’s material that is cheaper than concrete.

Other issues identified by participants focused on regulations, scales of construction and traceability in terms of source of wood and building material. There are path dependencies in the construction and design sectors linked to the labor force and material use. Users, from builders to consumers, tend to stick to what they know

and avoid risks. Furthermore, a barrier to the adoption of wood in buildings is a gap in training and skillset of designers, engineers, and builders. Participants noted that building with concrete is taught by default and builders need to take the initiative to build with wood rather than just concrete.

Sustainability of wood sourcing requires firm commitments and guiding policies. In particular, clarity on, and processes for traceability and recyclability require more attention. For example, there remain gaps in the current tools that track carbon from raw materials up through construction. In terms of regulations and policies, participants discussed how governments can set long term goals to drive businesses to make long term investments and decisions. Participants noted that the public sector can stimulate the demand for wooden buildings, for example wood cities and buildings in Helsinki, Finland. Yet, participants highlighted the importance of communicating clear messages in the use of flagship buildings so that the sector does not get stuck within a specific type of building (for example single story or student housing), which will not help bring the sector to scale.

Participants highlighted the importance of embracing a hybrid model, as is being done in Finland, substituting wood for other materials to make construction more sustainable and build familiarity and acceptance of using wood in new ways. Participants discussed opportunities to further advance the Finland supply chain by increasing the level of industrialization and standardizing solutions through, for example, increasing efficiency to benefit the whole value chain. Participants pushed each other to think beyond building with wood to also think about retrofitting with wood, which is especially important in the global north.



Walking into a mass-timber building under construction.



Co-chair summary of field visits.



Co-chair Lauri Linkosalmi facilitating a breakout discussion.

### 2.2.3 Prioritized strategies related to design and the built environment

#### Priority 3: Future cities

As a priority theme, participants explored the idea of a future city as a focus for wood centric construction and implementation. They idealized the city of tomorrow as a focus of policies on designing and building with wood with a focus on regionality and geographic specific strategies on implementation. In these future cities, participants suggested the adoption of accessory dwelling unit (ADU) housing for increasing densities.

For the future city to be fully functional, participants emphasized the need for durability of wood for construction and housing affordability in general. Participants also considered issues around liabilities and how all three factors – durability, affordability, and liability – will shape our understanding of future cities. Participants identified examples of new sustainable practices in Sydney, Australia and Glasgow, United Kingdom, such as bicycle-based densities. They emphasized the role of developers and urban planners at the center of discussions, bridging across all stakeholders, and focused on understandings of liveability based in lived experience and academic research.

Participants identified several strategies to help materialize the idea of a future city where wood centric construction and implementation become a reality. In a broad sense, they recommend an overhaul of the building standards, noting that regulations and policies on housing standard require a coalition of the willing and effective governance and administration. Participants further noted that to achieve carbon neutral goals, performance based on whole life carbon/embodyed carbon incentives need to be introduced. To properly facilitate the development of a future city, both in terms of where and how to start, participants suggest that the geographical characteristics, including climate, local resources, demographics social perceptions/acceptance, political will, and current infrastructure be carefully considered.

In more specific terms, participants propose the adoption of flexible buildings that are designed to be reconfigured, moved, expandable and contracted. Physical and social infrastructure should be driven by innovation and social media should be used to understand public perceptions and optimize communication and education on wood use. To help improve the acceptance of smaller spaces, participants recommend that new designs include tiny houses and sheds for urban edge in backyard. Participants believed this approach will also help with refugee housing.

Because housing affordability is a key determinant in the success of a future city, participants note that the questions around prefabrication and efficiency in supply chain needed to be answered. They emphasized the importance of waste management and material reuse, including considerations for end of life, material reuse in manufacturing. Prefabricated wooden elements can promote energy efficiency, reduce greenhouse gas emissions, and improve the quality and attractiveness of the existing building stock. By extending the lifespan of existing buildings, such solutions retain the materials in existing buildings and the carbon they store. To achieve a truly sustainable and liveable city, transportation, health, affordability, aesthetics, durability of the future must cater for all demographics, including the aging population.

Some of the suggested solutions are already in effect in some places and participants noted some examples. In terms of building types, participants noted the example of two- to three-story buildings with mass timber added to six story concrete in downtown Sydney, Australia – a true hybridization with strong focus on using mass timber. In London many roof top extensions and retrofits are made from prefabricated wood elements. Participants also draw upon examples from China, India, and Africa where local resources such as bamboo are used in buildings. Participants noted there are already incentives in place for building density and reducing the pressure for rural development, for example Transfer of Development Rights (TDR) in Washington state, USA.

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### Priority 3: Future cities *(continued)*

There are other solutions happening elsewhere. For example, there is research on best urban design and uses by urban planners at MIT, ETH Zurich; future cities laboratory in Singapore; decarbonization efforts – transportation in Finland; Copenhagen’s make biking easy which allows people to participate; “20-minute neighbourhood” which started in France and implemented in Paris, brings village concept to the city for new but also reconfiguring existing cities. There is also the forum on “biodivercities” in Singapore which aims at making space for nature/accessibility in urban areas and making space for rooftop gardens. In addition to the above solutions, private and think-tank initiatives such as Bauhaus’ built by nature, Unleash’s work on Sustainable Development Goals (SDGs), and urban planning are also common exemplar for what is possible.

Creative enforcement strategy for standards such as the “material passport” in The Netherlands where developer gets incentive for material passport ‘above average’ measured by embodied carbon, and regional partnerships for nature-based solutions in Glasgow, UK, and British Columbia in Canada are great examples of how solutions can be localized. Also, bioregional certification scheme for development by One Planet Living sustainability framework is a proof that bioregional policies and guidelines can help facilitate standardization in future cities.

To achieve this vision of the future city, all stakeholders need to be willing to adopt new ideas. For example, city officials need to be willing to ratify these solutions and be connected to know about innovation opportunities. Urban planners should be present in every city and region, and they should maintain and exchange knowledge transfer. They should be trained in climate adaptation, mitigation, and biodiversity and the need to design for a changing demographics. Educational training is needed across all categories (architects, engineers, builders, manufacturers, transporters). Other stakeholders that must be engaged include NGOs, media, insurance industry, communication, investors, land managers, foresters, researchers (nature science, social science, technical science, health science), end users (people in the buildings), and end-of-life/reuse innovators.



Author of the background paper, Edie Sonne Hall, facilitating a breakout session.



Dialogue co-chair, Mai Suominen, in plenary discussions.

## 2.4 Cross-cutting themes

### 2.4.1 Key insights from a cross-cutting perspective

To ensure discussions were not siloed within different parts of the value chain, one session of the dialogue focused on opportunities and challenges from a cross-cutting perspective. Those in the session identified the following needs and insights:

- ➔ Design, prefabrication, and construction were the “Bermuda Triangle” of building with wood because they need to be tightly integrated, while in practice each is a mystery to the other.
- ➔ A shift is needed to cross value chain education. This could enable a more coordinated agenda to improve knowledge transfer across different stakeholders and regions globally. It could involve multi-disciplinary education – from hard science to philosophy – across sectors. This holistic approach could foster prompt knowledge sharing across the whole value chain.
- ➔ Better transparency and data are needed all around, along with better education in how to use and interpret data.
- ➔ Mandatory disclosure of environmental impacts and values would raise education, build trust, provide incentives for more use of low carbon and ethical materials, and improve background data and methods.
- ➔ More evidence and research are needed to define and quantify carbon smart construction.
- ➔ Systems for use of wood in buildings must embrace diversity – in the forest, in wood products, in building types – and the related co-existence of materials and narratives.

### 2.4.2 Cross-cutting priorities

#### **Priority 4: Definition scoping: terms and definitions for wood in building**

The discussion on priority 4 focused on scoping and clarifying the shared language we use around the use of wood in the built environment. The conversation focused on both identifying the terms that stakeholders would like to build momentum around as well as terms that need clear definitions. Participants highlighted the importance of many types of wood products and other bio-based materials, beyond engineered wood, in decarbonizing the built environment.

Participants deliberated on the advantages and disadvantages of focusing on specific products vs the system as a whole. Some participants noted the importance of focusing on long-lived wood products to efficiently store carbon in the built environment. Others see value in focusing on materials and construction practices that displace concrete and steel as well as reduce overall consumption. System approaches include the circular bioeconomy and regenerative economy as an engine of cyclical systems. Discussions included a focus on decarbonization as well as wood as a means to create systemic environmental benefits from end to end.

Participants agreed that timing is essential in decarbonizing the environment, highlighting the need for fast scaling near term implementation, as well as the importance of regionally tuned solutions. Discussions of regional solutions included clarifying terms with different meanings in different places (such as ‘dense’) and focusing on bio-regional economies based on locally appropriate and available materials.

### Priority 5: Coalition of the committed

A “coalition of the committed” could advance the agenda on climate positive use of forest products in construction by:

- Creating a clear coordinated and coherent message and plan of action across all stakeholders.
- Focusing on what we can agree on, presenting an urgent, coherent message on lines of convergence.
- Coordinating work of multiple actors on multiple areas to advance innovation, data, implementation, and education.
- Recognizing that focusing on one area will not overcome barriers in other areas.
- Not letting perfection be the enemy of the good, moving faster to scale.

The “coalition of the committed” on climate positive use of forest products in construction should not be a “closed club”. Rather it should encourage the participation of critical voices and the undecided. It needs to inspire new “converts” as well serving the already committed. The coalition needs to bring naysayers into to partnerships to find common ground.

The coalition should be “bottom-up” based on regional hubs. It should prioritize knowledge transfer, recognizing that this is needed along the value chain and across regions. It should embrace learning by trial and error and be ready to learn from failures due to the urgency of the agenda.

The coalition should be mindful of the need to build the next generation of supporters of the agenda, thinking about future needs and creating long term momentum.

### Initial activities could include:

- ➔ Identifying the convergence lines within this agenda.
- ➔ Making strong use of pilot projects to tell the whole story through real-world examples. However, pilots should not be taken as simple blueprints for replication, but as part of broader scaling strategies. Some participants expressed caution that that scaling messaging should not be so dominant that it suggests expansion without limits.
- ➔ Thoroughly mapping the initiatives in this space and pulling them into the fold without duplication.



Participants share their key priority for the role of mass-timber as a climate mitigation strategy.

## What is already happening?

- ➔ TFD's planned **Climate Positive Forest Products**, Mass Timber Field Dialogue series (S/E Asia, Congo Basin, Brazil)
- ➔ **Climate smart forest economy program**
  - Breakthrough initiatives/projects
  - Regional value chain alliances
  - Coherent messaging
- ➔ **Built by Nature (Europe)**
  - Connecting front-runners
  - Cities based
- ➔ **Softwood Lumber-board**
  - American industry groups
  - Education for professionals, including architects, building owners etc.
  - Collaboration (working hand-in-hand) with US forest service and USDA
- ➔ **Urban Toolbox** for timber cities (**OOPEEA**: Architecture, Finland)
  - Set of architectural tools
- ➔ Emerging academic focusing on constellations of research (e.g., housing and mass timber)
- ➔ **World Green Building Council**: Works with businesses, organizations and governments to catalyze the uptake of sustainable and decarbonized built environments.
- ➔ **Circular Bioeconomy Alliance**: Provides knowledge-informed support as well as a learning and networking platform to connect the dots between investors, companies, governmental and non-governmental organizations and local communities to advance the circular bioeconomy while restoring biodiversity globally.
- ➔ **Wood4Bauhaus**: The Wood Sector Alliance for the New European Bauhaus is an open platform to reach out to the construction industry and all involved stakeholders.
- ➔ **Bauhaus – ERDE (Germany)**: An interdisciplinary think-and-do tank that convenes and connects thinkers, designers and policy makers from across the globe and, with them, pursue our goals through research, demonstration projects and political advocacy.
- ➔ **The Food and Agriculture Organization (FAO)'s Advisory Committee on Sustainable Forest-based Industries** (ACSFI) (forest economy and bioeconomy)



Yale School of the Environment Professor and background paper co-author Barbara Reck walking in the forest.

- ➔ **Canada Forest Products Innovations:** Private not-for-profit R&D organization that specializes in the creation of solutions that accelerate the growth of the Canadian forest sector and its affiliated industries to enhance their global competitiveness.
- ➔ **Sustain Nordic:** Nordic council of ministers that aims to promote sustainable cities and societies, as well as sustainable consumption and production, with a focus on sustainable building materials and architecture.
- ➔ **European Wood Policy Platform (woodPoP):** A discussion forum on multilateral exchange to facilitate sharing of best practices and coordinated approaches in developing policy solutions by the Ministry for Agriculture, Forestry, Regions and Water Management, Austria and the Ministry of the Environment, Finland.

### Potential stakeholder roles

- ➔ **CSFEP:** Can convene shared knowledge in Global South but needs partners in the North to do this globally
- ➔ **Potential Fulbright Forest initiative:** Boreal region and political and academic
- ➔ **Carbon Leadership Forum:** Creating a knowledge library
- ➔ **Ambassadors:** Rockstars
- ➔ **Funders:** They are all compartmentalizing individuals into their own projects. There is need for funders to loosen up deliverables to allow projects to work together.
- ➔ **Financial institutions:**
  - Innovative financial instruments to drive transitions
  - Resiliency in portfolios
  - Insurance to drive change – link to reduced risks
  - Need necessary education for financial institutions
  - Change can be driven by financial disclosure laws (EU)
- ➔ **Professional associations**
  - Communication and education
- ➔ **Policymakers and regulations**
  - Willing to use new technologies
  - Subsidizing risks of new technologies: Linked to 10–30 years building guarantees

### 3. NEXT STEPS

After a robust discussion on the key themes and a session to reflect on the dialogue and potential outcomes, participants were encouraged to deliberate on the next steps post-dialogue. Participants noted that it can be confusing to think about effective next steps because similar conversations and dialogues are ending up at the same conclusions, i.e., identifying gaps and fracture lines. That notwithstanding, this dialogue posed a key question, ‘what is needed to move into the next space?’ to which participants suggested the following next steps.



Dialogue participants visit a building being constructed with mass timber and other wood products.

#### 3.1 Next steps in Finland

- ➔ **Revisit the Finish example and practice of conducting LCA** for each wood-based multistory apartments and its connection with upscaling and sustainable sourcing.
- ➔ **Ownership of forests** as a focus when discussing forest management, given the amount of private forests in Finland. That is, broadening the scope of discussions particularly around practices and economic benefits to include those related to private owners instead of just public lands.



Dialogue participants visit a recent harvest site.

### 3.2 Next steps globally and elsewhere

- ➔ **A stakeholder coalition** (that will provide input) across a range of sectors and value chain may be the way forward. Possibilities around starting pilot projects as an example. In this regard, it is important to be committed to the development of, for example, technologies to aid forest management. Stakeholders will benefit from reaching out to collaborators for joint action to progress any pilot project.
- ➔ **Knowledge sharing** particularly across regions – Global North and Global South – and across projects. Stakeholders must realize that discussions around mass timber are happening around the world. As such, robust dialogue should be embraced because it is a unique opportunity to learn and share knowledge.
- ➔ **Holistic approach across the value chain** to consider building designs and construction with respect to wood supply and types of forests source.
- ➔ **Case studies to collaborate on and publish** cutting-edge up-to-date research on climate smart forestry projects – e.g., new information about wood sourcing with tribal communities and small forest organizations, Ecosystem services and carbon accounting research.
- ➔ **Explore the use of new technology** to drive better forestry to prepare the forest against unforeseen risks and to allow time needed for current forest management to adapt.
- ➔ **A new frontier to create financial business rationale** to people involved because there is money to be made. As a new frontier it should be disruptive by involving broader stakeholders including

promoters, investors, and private practitioners. Stakeholders should realize that the new frontier is a matter of urgency which requires equal urgency on the part of stakeholders.

- ➔ **Designing a participatory process** that helps understand the current process of wood production. The participatory process will empower stakeholders to think about the entire system/value chain and how we engage – should be radical, including moving around forests.
- ➔ **Balancing perceptions and remapping the mind of stakeholders** so that we are not assuming the need of stakeholders – that we know what is needed – instead mapping what they need and responding to the need.
- ➔ **A critical stakeholders' auditing strategy** to audit what is happening across regions in relation to partnerships, learning, case studies, and to build consensus from the bottom up. Adopting a stakeholder auditing strategy will allow us build consensus and effectively communicate what is being done to build convergence in specific regions.
- ➔ **Time scaling the products of the future and identifying the economic benefits** to communities/ forest owners, as well as the impacts and the needed management solutions.
- ➔ **Reimagining the productivity** of the built environment by reviewing the rate of progress in the sector, and the role of mass timber in driving further progress.
- ➔ **Understanding regional contexts and differences**, recognizing that regardless of collaboration, actions happen differently at different regional scales.
- ➔ **The need for a follow-up-call with dialogue participants** to explore and identify implementation plans and partners and to remotely follow-up on any progress regarding pilot projects.



Dialogue participants learn about forest management and harvesting practices.

## APPENDIX

### Full list of priority areas

The following is the full list of the key priority areas put forward by dialogue participants. Participants then voted to prioritize which ones to focus on further. The top five themes resulted in the five prioritized themes presented in the co-chair summary Key Themes.

VALUE CHAIN CATEGORY	PRIORITY	PARTICIPANT'S PRIORITY VOTING (NO OF VOTES/THEME)
FORESTS	Public perception and social license to operate	13
	Biodiversity in forest management	4
	Forest Safeguards	8
	Clarify human health implications	4
	Politics	11
MANUFACTURING	Engineered wood, increase use efficiency	12
BUILDINGS, URBAN ENVIRONMENT	Public perception of wood buildings	4
	Hybrid buildings	6
	Skills training	3
	Incentives to build with wood	4
	Future City: What is the city we want, dense traversable, modest in height and size. What is the density, interconnectivity, and scale of city that people in the future want	13
	Solid wood recovered from the log represents a small percentage of biomass. How do we increase the value or utility of the material?	0
	Global face for mass timber "Sanna Marin"	0
CROSS-CUTTING	Bermuda triangle of design, prefabrication, and construction – these are three needed elements of wood construction	6
	Cross value chain education	9
	Better transparency and data. And better education in how to use and interpret data.	1
	Mandatory disclosure of environmental impacts and values. Would raise education, build trust, incentive low carbon and ethical material, and improve background data and methods.	1
	How do we define and quantify carbon smart construction. Evidence is not clear enough yet.	1
	Need for diversity	4
	Coalition of the willing to move this agenda ahead	12
	Scoping definition of how we use wood in our built environment	13

## Dialogue participant list

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<b>Michael Budig</b>	Singapore University of Technology and Design
<b>Stephanie Burrell</b>	World Economic Forum
<b>Stephanie Carlisle</b>	Carbon Leadership Forum
<b>Kaipainen Cavadas</b>	Rogaciano Metsä Group
<b>Caitlin Clarke</b>	BTG Pactual
<b>Gary Dunning</b>	TFD
<b>Ismini Ethridge</b>	TFD
<b>Liz Felker</b>	TFD
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<b>Timo Lehesvirta</b>	Metsä Group
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