



The Forests Dialogue

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Scoping Dialogue on Climate Positive Forest Products

CONVENED VIRTUALLY

26, 29 April, and 3 May 2021

Co-Chairs' Summary Report

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Focus: Potential Climate Benefits, Challenges and Risks Related to Scaling up Mass Timber Construction Practices

ABOUT THE INITIATIVE

The Forests Dialogue (TFD) launched the Climate Positive Forest Products (CPFP) initiative in 2020. Using mass timber construction materials as an entry point, the Initiative aims to build understanding and agreement amongst stakeholders around the opportunities, challenges, and knowledge gaps related to utilizing forest products as a climate change mitigation tool. The Dialogue defined CPFPs as sustainably sourced materials that provide net climate benefits through (1) carbon sequestration, (2) carbon storage in woody biomass, and (3) carbon substitution benefits through avoided emissions.

As an integral part of this initiative's development, TFD co-convened a virtual "Scoping Dialogue" with the World Resources Institute (WRI) in partnership with the Climate Smart Forest Economy Program (CSFEP), with seed funding from Good Energies Foundation and support from Dalberg Catalyst. The program aims to generate and disseminate knowledge, inspire and raise ambition of critical stakeholders from the public and private sector, and support initiatives that demonstrate how the Sink, carbon Storage, and fossil-carbon Substitution (3S) functions of forests and forest products can be maximized for enhanced climate, social and economic benefits. Forest management that meets social and environmental safeguards (e.g., is sensitive to local needs, sustainable in the broadest sense, and informed by holistic land-use planning) is both a prerequisite for climate positive wood products, and a potential outcome of their increased uptake.

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The Scoping Dialogue explored a range of stakeholder perspectives at the global scale and addressed questions about the positive and negative impacts of scaling up ‘mass timber’ construction practices might have on climate and forests. Mass timber is a newly developed category of wood products (including cross-laminated timber (CLT), glued laminated timber (GLT), mass plywood, and others) that enables construction of tall buildings with wood. To help develop and implement this dialogue-based initiative, TFD brought together a committee of 18 advisors composed of actors representing the forest, building, and climate change mitigation sectors. The advisory group consisted of representatives from multinational organizations, companies, NGOs, academia, foundations, and civil society groups.

➔ **All materials related to this dialogue can be found digitally at:**

<https://theforestdialogue.org/dialogue/scoping-dialogue-climate-positive-forest-products-cpfp>

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Background on Forest Products with a Climate Benefit

Research indicates that climate positive forest products have potential to deliver significant climate change mitigation benefits when substituted for traditional resource-intensive materials, under specific conditions and with sustainable forest management and sourcing.

The building sector, and the use of mass timber was the Dialogue focus for three primary reasons: 1) Buildings are responsible for a large percentage of global emissions, 2) need for building stock will grow substantially this century, and 3) wood use has the potential to displace more emissions-intensive materials while storing carbon in its physical structure. The building sector currently accounts for approximately 39% of global greenhouse gas (GHG) emissions. Of that, emissions associated with construction material (referred to as “embodied carbon” in buildings), accounts for 11% of this sector. Maintaining so-called ‘business as usual’ practices will drive a dangerous emissions increase given that current estimates show global building stock is expected to double by 2050 – equivalent to adding a built area the size of Paris to the planet every week for the next 40 years. Limiting global warming to 1.5°C, as set out by the Paris Climate Accord, will require a rapid transition towards low carbon construction.

Because of mass timber’s potential building performance, environmental, and climate benefits, these construction practices are increasingly attracting attention from building sector professionals, forest managers, academics, and those engaged in climate and forest policy. Despite its promising potential,

disagreements remain on the key social and environmental impacts that an increase in demand for mass timber materials may have. Knowledge gaps persist when it comes to carbon accounting, assessing opportunities, and potential unintended consequences on forests and rural populations.

INTRODUCTION

TFD convened a Scoping Dialogue on Climate Positive Forest Products (CPFP), hosted virtually on 26, 29 April and 3 May 2021 with the aim of:

- ➔ Building 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.
- ➔ Fostering 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.
- ➔ Co-creating an actionable plan that presents a path forward mobilizing stakeholder networks.

Participants were invited from regions with ongoing efforts to sustainably scale mass timber construction (Europe and North America) and countries and regions where housing booms are predicted in the coming decades and thus mass timber construction practices have the potential to make significant impacts (India, Latin America, China, and across regions in Africa).

Participants took part in a remote, facilitated, multi-stakeholder dialogue. The dialogue built upon a background paper developed prior to the event that synthesized the best available research. Primarily discussion-based and stakeholder-driven, the event featured a significant portion of time spent in breakout groups. Each session built upon the last and participants were expected to attend all three days. The use of a digital platform due to the global pandemic created both opportunities and challenges. While participants did not have the chance to get to know one another outside the event and discuss in person, the dialogue hosted more participants than average for TFD events (66 individuals in this event), a result likely enhanced by the ability to join remotely.

Overarching Co-Chair Synthesis

The Co-Chairs convened before, during, and after the event. During the event, Co-Chairs prepared a synthesis between each session to maintain continuity between the three days. This also provided an opportunity to assess the rich data from multiple breakout groups which has fed into this Summary document. Major takeaways on mass timber as potential climate solution included:

- ➔ Multiple scales of innovation needed
- ➔ Urgency due to the climate crisis
- ➔ Need for investment in forests, communities, and landscapes

- ➔ Obligation to identify and mitigate negative unintended consequences to forests and society
- ➔ Optimism in potential for diverse partnerships across value chains and geographies
- ➔ Opportunity to stimulate conversations and positive outcomes for people and the environment

Overall, operationalizing a sustainable mass timber solution will involve overcoming global and local challenges. Identifying bridges and points of communication between scales will be central to successfully implementing mass timber building technology while limiting negative impacts.

Pillar Framing

Due to the complex and interdisciplinary nature of the topic, participant expertise and breakout discussions content was highly diverse. As such, the Co-Chairs found it relevant to identify overarching pillars to lead discussions in the event and to support drafting of this report. These pillars represent major intersecting axes and were deemed essential framing to consider connections between mass timber and climate. The pillars are as follows:

FORESTS	CLIMATE	SOCIAL	URBAN/ BUILDING
Forest management, forest protection (from degradation and land use change), increasing pressure for wood resources and other land uses	Pressing challenge of climate change, carbon storage and substitution, and mass timber as a climate mitigation tool	Societal preferences and perceptions influence choice of building material and welfare of urban and rural communities	Building technology and design, a functioning bioeconomy, and urban decision-makers such as planners and policymakers

Fracture Lines

The Co-Chairs identified the following ‘fracture lines’ – defined as sources of points of disagreement and uncertainty between stakeholders – throughout the event. These are not dissimilar to those identified in the original scoping paper:

➔ **Whether increased demand for timber in construction is ultimately good or bad for forests**

Some participants expressed concern that an increase in mass timber use will result in overall increase in wood products demand, which could in turn drive deforestation, illegal logging, and/or an increase in quantity or frequency of harvesting in natural forests. Others argued that demand for timber from well-managed forests could drive investment in improved forest management, reforestation and restoration, and/or agroforestry.

➔ **Whether more use of wood is rarely or mostly good for the climate**

On the one side are those that believe industry advocates hide behind life cycle analysis (LCA) assumptions and accounting methodologies (e.g., “forestry is carbon neutral”) to overemphasize carbon storage in buildings and substitution for materials with a high carbon footprint (such as steel and concrete). Others are wary of overemphasizing forest climate benefits to promote

increased management and harvest at the detriment of currently stored carbon, old growth forests, and other forest ecosystem services like habitat provisioning. On the other side are those confident in carbon storage and substitution benefits and anticipate limited or no negative impact in forests.

➔ **Whether to ramp-up use of construction timber now or to first build evidence for positive impacts**

Some participants favored a precautionary approach – such as waiting for better data and evidence to become available on positive forest and carbon impacts and societal benefits before promoting uptake of wood in construction at scale. Others emphasized the urgent need to immediately reduce construction’s carbon footprint as it will take time to overcome path dependencies and other barriers to uptake.

CROSS-CUTTING THEMES

This section explores emergent dialogue themes that cut across the four pillars of Forests, Climate, Social and Urban/Building including: Forests and forest management; Public perception of wood use; Supply and demand; Safeguards / Avoiding negative consequences; Policy and decision makers; Human capacity and Benefit sharing; and the Built environment.

For each theme, we present Key Insights, Concerns, and Knowledge Gaps sections. Key Insights are intended to provide context, perceived opportunities, and central challenges, Concerns capture shared doubts and well as points of disagreement or misunderstanding, whereas Knowledge Gaps capture data, network, and communication limitations.

Forests and Forest Management

Key Insights

Participants agreed on the need to maintain and enhance forest health among other values (e.g., biodiversity) but diverged on the roles of forest protection versus forest management to achieve this. They acknowledged that protection and management are not necessarily opposing ideas but have different roles to play in maintaining forest cover. The potential risks associated with promoting CPFs, particularly in areas with weak forest governance, were flagged. Participants emphasized the need to ensure a focus on “climate positive” forests do not mean “*exclusively* climate positive,” but captures broader benefits provided by forests, such as water provisioning and biodiversity.

Finally, participants discussed that mass timber currently uses predominantly plantation softwood lumber. Through product innovation, however, mass timber producers could potentially use both hardwood and softwood to enhance or maintain a diversity of native or well-adapted species and provide greater flexibility in meeting global needs with local sourcing.

Concerns

Opinions diverged on whether additional demand for forest products would drive investment in improved forest management and reforestation or simply result in more logging and degradation of forests. The broadest consensus is that the outcomes will be based on specific circumstances and geographies. However, stakeholders agreed that wood use in construction should be coupled with safeguards to ensure wood is sourced from well and sustainably managed forests.

Forest governance in supply countries and regions is critical. Current mass timber production capacity is largely in Europe and North America, and while these regions are not without issue, expanding to regions with ongoing forest loss and degradation is a dominant concern. Some developing countries have suffered from a legacy of poor governance in their forest management regimes, including suboptimal concession and ownership structures, unclear tenure, unacknowledged customary land rights and practices, and predatory international investors. These issues influence which forests are logged, how that logging takes place, and the level of transparency in tracking chain of custody, which is essential for third-party certification. Participants stressed the importance of strong forest governance to support stability, accountability, and sustainability in a forest industry focused on adding value rather than the traditional boom-bust log export cycles.

Knowledge Gaps

Regional impacts of global trade on forest supply for building materials are not well understood. Assessments of forest trends, health, and species types as they relate to mass timber are needed in every region, along with assessment of mass timber demand as a CPF. A key question is the unit of analysis best suited to a landscape-level and system-level understanding of forest management and forest product climate impacts.

Participants discussed which forests are suited for producing wood that can be used for mass timber, and which forests should be conserved and/or managed for other purposes. While there was acknowledgement that how individuals respond to each question is based in their values, participants identified context-specific factors that influence the answers such as carbon impacts over time, alternative land uses, substitution considerations, and ecosystem functions of forests. Further, participants explored how CPFs can be an asset for encouraging adaptive, regenerative forest management practices rather than leading to more extractive forestry. Lessons learned and evidence drive practices towards the former rather than the latter.

Significant uncertainty remains around carbon accounting and the counterfactual scenarios that affect the overall footprint of mass timber and other CPFs. There is a need to credibly connect forest management to specific product sustainability and climate profiles for builders and end-users. It is also important to clearly define system boundaries for the unit of analysis such that these impacts can be fully understood over the relevant time period. Adaptation concerns, and the impacts of the climate crisis on forests themselves, must also be considered.

Public Perception of Wood Use

Key Insights

Dialogue participants identified public perception as having a critical role in informing public policy, investment decisions, design decisions, aesthetic values, and ultimately adoption. Central challenges in public perception include public trust, social license, and negative perceptions of wood use and wood use in construction (e.g., cultural preferences for concrete in some regions). There is also a need to fill knowledge gaps, including those identified across the themes presented here, and disseminating that knowledge.

Participants identified opportunities to change perception of wood products, focusing on a need to boost understanding of a distinction between sustainable timber production and global deforestation and degradation concerns. Participants identified that communication to the public, through key channels that influence the public (e.g., conservation NGOs, governmental actors, builders, and developers), will provide an immense value to promoting sustainable wood use, including in mass timber application.

Concerns

A primary concern is misinformation and the limits of current assurances to provide adequate information about sustainability. Participants discussed research showing that many people believe forest product use is a major driver of deforestation and exploitation (e.g., that US national parks and forests are used for wood). Contradictory information from industry and NGO actors confuses the public and creates a lack of confidence to move forward with mass timber. Furthermore, international news about forest and biodiversity loss drives concern about wood use.

Knowledge Gaps

Research is needed on public perception, the adequacy of current assurances in boosting trust, and network analysis of global and local networks of influencers and decision makers who could be influential in understanding and promoting mass timber.

Supply and Demand

Key Insights

Supply and demand related issues featured heavily in discussions exploring opportunities and challenges of scaling up mass timber. Participants highlighted that increasing demand in mass timber does not necessarily result in a 1:1 increase in timber demand as there is significant elasticity in the supply/demand relationship, as well as many opportunities for improved efficiency and replacement in the use of forest products. Participants suggest that CPFPs should consider lifecycle climate impacts and focus on the “cascade” of products used to maximize those benefits. For example, the largest and highest quality timber should be used for the best carbon storage and market value, while products of progressively lower storage benefit should be matched to the most appropriate end uses, including re-use and recycling.

On the topic of global trade, participants unpacked the current context of construction needs in the global south and production of mass timber primarily in the northern hemisphere. Discussions explored how building needs, processing capacity, and material availability could be aligned within a geography, with potential to contribute to long-term sustainable development. For instance, there is opportunity to transform wood use in Africa from an energy source to producing more value-added products in terms of carbon storage. Participants discussed the complexity of this transition, highlighting how new models of forestry and forest economies are needed to produce materials required for mass timber production as well as formalize the forest sector and markets in many cases.

There was a common interest to explore how increased production of sustainable mass timber could be achieved with limited increase in overall demand from forests, for instance by identifying transformative options for efficiency, wood reuse, sustainable forest production, freeing up current material streams, and expanding forests by restoring landscapes. Some participants highlighted the potential for increased demand to have spillover benefits for forest adaptation to climate change (e.g., in fire-prone regions). While participants pointed out that forest management is not necessary in all forests for health, there was optimism in the potential of sustainable mass timber to pioneer larger transformation towards growing forest economies, funding restoration, maintaining forest cover, and adapting to climate change.

Concerns

There is a supply/demand concern around the potential negative impact on forests of rising demand for mass timber. From the supply/demand perspective, participants expressed the potential for increased demand to result in displacement to other markets for the same wood. There was a split between those that believe market dynamics and forest governance will mitigate negative impacts on forests, and those that are more skeptical and envision mass timber demand as stimulating increased, unsustainable forest harvesting.

Additionally, participants highlighted the potential for countries with high reliance on timber imports to 'outsource' environmental impacts to countries with weaker governance and safeguards also emerged as an area of concern. Relying on imports will be risky for many countries trying to guarantee sustainable sourcing. Use of such products could contribute to a more regenerative system, or it could continue to contribute to historical trends of inequity and over-exploitation of natural resources. On the other hand, there was concern that actors often 'left out' of market opportunities, like indigenous communities (e.g., in US and Canada), may not be invited to participate or have sufficient access.

Knowledge Gaps

Further discussions are required to consider in more depth issues and opportunities related to supply and demand across all relevant spatial scales (local, national, regional, global). Specifically, in regional differences and in balancing domestic with international markets.

Also, given the coexisting nature of the forest sector and raw material flows, supply and demand of mass timber materials cannot be considered in isolation from all other materials and products derived from

forest resources. For instance, if society pivots significantly to mass timber as best use of wood, it will also be important to consider the cascading impacts on other forest-based materials (e.g., paper, packaging) so that optimum pathways can be ensured.

Safeguards / Avoiding Negative Consequences

Key Insights

The Dialogue uncovered a broad concern about the adequacy of safeguards and existing assurances to ensure that increases in demand for mass timber do not create negative impacts or have unintended consequences on forests, nor harm the environment and society. Safeguards are assessments and actions taken to limit or eliminate negative social and environmental impacts. The importance of safeguards was not questioned, and there was agreement that safeguards be practical, strategic, and implementable; ideally leveraging and expanding on existing efforts to manage forests sustainably and assure sustainable and just development.

Participants emphasized that regional timber markets, particularly in developing countries, should ideally rely on local wood sources to ensure benefits are flowing back to communities and rural actors, and that mass timber and other wood products are designed and manufactured to meet local needs and preferences. Others highlighted the need to consider global mass timber supply and demand dynamics in terms of carbon and the highest and best use of forests from a global scale.

Concerns

Forest governance presents a risk in many countries, as sufficient protections are often not in place. There is also the potential for negative impacts on indigenous communities across developing and developed country contexts, for example by either leaving them out of the benefits of new markets, or by increasing pressure for forest products on their land, or degrading lands near their territory and negatively affecting species or ecosystem services. Furthermore, there was concern countries with advanced processing facilities receive most of the value of sophisticated timber products, while relying on cheap timber imported from countries in which poorly governed forestry activities (e.g., unsuitable logging practices or expansion of plantations) are resulting in negative social and environmental impacts.

Knowledge Gaps

Participants identified a need to understand the landscape of assurances and protections in place. It was pointed out that we currently do not know the likelihood that negative impacts will happen, pointing to the need for risk-based analyses. Furthermore, participants expressed the need for more widespread understanding and awareness of the potential negative impacts on local communities, in particular marginalized and indigenous communities.

Policy and Decision-makers

Key Insights

Participants highlighted the transformational potential of strategic policy interventions promoting mass timber that meets social and environmental safeguards. Beyond the immediate aims of increased use of mass timber, policy interventions present opportunities to increase efficiency of wood use, utilize waste material (including recycling wood at end-of-life), and improve assurances and transparency. Further, potential points of policy intervention include carbon verification for construction, expansion of LEED certification to include mass timber, building code changes, and regional development targets.

Participants discussed a need for international agreements for wood production and supply that can support industry development and create jobs across neighboring countries.

Concerns

Lack of available information for policy makers and their constituents represents a substantial challenge. An immediate concern is how to overcome a vast knowledge gap from policymakers while boosting functional knowledge on the topic.

Knowledge Gaps

There is a need for comprehensive policy assessment to advance mass timber that spans building codes, forest management standards, international trade agreements, economic incentives, urban and regional planning, and workforce development. Further, more research on how policies can promote a bioeconomy while addressing social issues of equity, health, environment, and inclusion can increase confidence in mass timber.

Human Capacity and Benefit Sharing

Key Insights

Dialogue participants explored themes around workforce development and sharing benefits of mass timber across the value chain. In order to scale effectively, a need for skilled professionals with expertise in mass timber was identified in several fields (e.g., forest management, manufacturing, building/construction, architecture/design). Participants further explored historic inequities by asking if those that undertake the forestry work and provide the natural resources receive adequate benefits in return. In other words: Can the economic benefits flow back to the people working in and managing forests?

Concerns

Major concerns included the cost of training (e.g., construction, manufacturing, sourcing) and required inputs to effectively transition from the status quo in wood procurement and use. It was pointed out

there is currently a disconnect between needs for building development and current capacity to 1) provide sustainable and transparently sourced timber, 2) plan and build with mass timber, and 3) process and create mass timber products (facilities limitations).

Knowledge Gaps

There is a need to better understand the current capacity, where future processing facilities could be situated, and how to ensure equity in benefit distribution to communities and actors that produce the input materials.

The Built Environment

Key Insights

There is a need to understand the regionality of the construction sector. Housing booms are expected in developing regions (e.g., across Africa and in countries like Brazil, China, India) and expertise and manufacturing capacity is currently concentrated elsewhere in developed regions (e.g., US, Europe).

Participants identified a need to further innovate mass timber application, for example in modular building, to support reuse and flexible configuration. Increasing efficiency (e.g., reducing waste), increasing biomaterials in manufacturing (e.g., fuels and glues), and tightening connections between rural landscapes and the built environment represented central points of innovation. Further innovation in mass timber science could diversify the species used in construction, for example by mixing hardwood and softwood to support a native species mix in some regions.

Participants emphasized that modular building materials can increase adaptability of mass timber. Making wood into a brick-like unit that people are already familiar with and can incorporate in existing building systems may expedite uptake.

Concerns

Manufacturing mass timber is an energy intensive process, and various national and sub-national requirements will influence the net benefit of mass timber use. While still presumed to be less energy intensive than steel or concrete, assurances and uncertainty about current metrics and their applications in different regions, with different materials, and different transportation needs limit confidence. Further, confidence in the dominant forms of measurement and inquiry, such as certification, life cycle analyses (LCA), and environmental product declarations (EPD), need to be strengthened and better understood to support confident decision-making from outside of the sector.

The current incentive structure for buildings, including green building certification, does not currently encompass mass timber. There remains a need to better align incentives to promote resource conservation and use of renewable materials in city planning recommendations.

Knowledge Gaps

Current evidence is based on available information, but more data is needed to create appropriate expectations of mass timber climate benefits in the built environment. It is also unclear which scales are the most appropriate for boosting mass timber in the built environment (e.g., building, city, or regional scale). There is a need to clarify which issues are best addressed at which scales and where we have a lack of data or a discrepancy in data or methodology. We need to learn what scale of resolution is needed to communicate to designers, policymakers, planners, and other actors the benefits of mass timber, advancing building codes and green standards, and how mass timber can contribute to climate strategies.

STRATEGIES FOR ACTION

Participants identified the following strategies for actions to encourage use of timber in construction if and where it provides climate benefits and meets social and ecological safeguards.

→ **Assess region-specific impacts of production forestry within the context of the wider land-use mosaic**

Participants noted that forest management impacts are very context and location-specific with respect to the costs and benefits of protecting or logging a forest or using a given parcel of cleared land for urban development, farming, tree plantations or ecological restoration. Region-specific assessments of timber production impacts and use, whether in plantations or natural forests, should examine timber production within the wider mosaic of land-uses and needs in the region, and the relative balance between farming, forestry, and conservation. These could help stakeholders assess the merits of increased use of timber in construction and identify measures needed to ensure production forestry in each region meets relevant social and environmental safeguards.

Participants recognized that land competition is intensifying globally to meet the needs of a growing population and rising incomes, and the related need to increase food production within arable land constraints. However, participants also noted that the benefits and risks of increased construction timber use are difficult to frame or assess at a global scale because of geographically specific variables such as species type and processing facilities, which in turn are tied to regional supply and demand. While mass timber could help meet the global climate challenge, the production and application of mass timber is best considered in site-specific and regional contexts. As such, a systems approach is required at multiple scales to achieve a holistic understanding of the role of construction timber in climate mitigation.

→ **Leveraging restoration to invest in sustainable landscapes and support CPFs**

Participants expressed a broad preference for reforestation and restoration on degraded and marginal lands and for logging to be concentrated on secondary, low conservation value forests

and for primary or high conservation value forests to be protected. While large areas of land could be reforested for timber production purposes, strong concerns were raised around potential land grabbing and human rights violations against marginalized communities.

➔ **Assurances that construction timber is sourced from well-managed forests and provides climate benefits**

Participants working in downstream segments of construction value chains stressed the need for simple and reliable assurances that timber materials are sustainably and transparently sourced from well-managed forests and are generating positive impacts for local people, biodiversity, and the climate. Participants proposed development of an accessible evaluation framework and related decision-making tools that could be applied by architects, designers, construction companies, specifiers etc. to select wood-based materials responsibly and readily compare them to alternative materials. This could include better integration of forest management and building certification systems. The framework could draw on work already underway to update guidance under the GHG Protocol on accounting for land sector activities and CO₂ removals in corporate greenhouse gas inventories. Suppliers of construction timber and other materials could use these systems to provide clear information about the embedded impacts of their products. Participants also noted the potential reach and influence of the design community in advocating for progressive certification systems and standards.

➔ **Filling knowledge gaps and providing better data through new research and synthesis**

Participants noted that many challenges in assessing climate and other impacts of wood-based products (and comparing to those of other materials) are the result of both data gaps and a diversity of methodologies in impact assessment tools (e.g., Environmental Product Disclosures and Life Cycle Analyses). Forest product industry participants recognized the need to increase transparency, quality, and quantity of efficiency data from wood product manufacturing facilities. Participants saw a need for a basic analysis of relevant metrics, data sources, tools, and approaches to identify current strengths and weaknesses in data, carbon accounting methods, and the scope of analysis at different points along the value chain, including end-of-life and reuse options. Such analyses could identify critical priorities for better data or alignment of methodologies to assess and quantify impacts.

Participants also saw a need for more social science research around decision-making, values, and knowledge in the forest economy. This could provide useful insights on what drives behavior change, attitudes and opinions, and contextual information around forest governance, economic constraints, development, and inclusion. Such research could also foster dialogue on differences in the risks and benefits of increased use of wood products across various regions, and how benefits are shared along the value chain.

→ **Fostering inclusive dialogue and collaboration**

The concept of CPFPs and the role of mass timber reflects a highly interdisciplinary space with distributed decision-makers cutting across forestry, building design, urban planning, land use policy, trade, economics, and development. Because there are very few organizations with individuals working at every part of the mass timber value chain, collaboration between organizations is necessary. Sectors like building and urban development are seeking more information on sustainability metrics (forests, carbon, social impacts etc.) to communicate with clients. Ongoing learning exchanges between forest sector actors with a history of engagement on sustainable forestry and actors that are newer to the space will encourage joint learning and exploration.

Participants identified the following topics and issues as priorities for additional dialogue:

- Conflicting findings in the academic literature and life-cycle analyses on the carbon impacts of forest management and use of wood products in construction. Dialogue amongst academics and experts could help to pinpoint divergent assumptions and data points, (including those that are “hidden” in published papers and studies) to build a more coherent evidence base on carbon impacts.
- Identifying criteria and concerns for region-specific assessments of the impacts of timber production and use. This would include discussion on how to anticipate and foster innovation in material flows (e.g., highest and best use of wood for carbon benefits, material reuse, linking rural and built environments).
- Directly engaging rural actors, including indigenous communities, that stand to benefit from or be affected by changes in woody biomass use.
- Build trust-based coalitions to support solutions that have positive impacts in forest landscapes as well as the built environment. Such coalitions could bridge gaps between industry and forest protection advocates, or between upstream and downstream actors in the value chains, developing concise and transparent narratives around forest product climate benefits and actions needed to realize those benefits.
- Enable knowledge transfer, establish learning and demonstration sites to achieve “proof of concept” for untested ideas, engage decision-makers from multiple sectors and communicate a shared vision around use of climate positive forest products.

NEXT STEPS

Participants proposed next steps to maintain the momentum and enthusiasm on this agenda:

- ➔ The key insights, concerns and knowledge gaps that emerged from the dialogue should be captured in the Co-Chairs' summary, and communicated broadly to stakeholders through blogs, social media and other means.
- ➔ Participant organizations and related initiatives, such as The Forests Dialogue, the Climate-Smart Forest Economy Program, and Leadership Summit for Carbon, Wood and Forests should explore stakeholder interest in building a more permanent multi-stakeholder coalition to build trust and collaboration and take forward the strategies for action outlined above. Organizations involved in the development of this coalition should take stock of existing efforts and initiatives and align or collaborate with them as appropriate.
- ➔ Inclusive dialogues should be convened in specific regions to explore stakeholder perspectives on the potential impacts and benefits of increased use of timber in construction in those regions. Such dialogues could serve as a first step towards deeper assessments and development of strategies to realize identified potential benefits while avoiding harm.
- ➔ Advance research by identifying key research questions, existing data, full literature assessment of existing work.
- ➔ Implement pilot projects and case studies to 1) identify key criteria and parameters to be assessed and 2) to communicate those to others.
- ➔ Support safeguard analysis including specifying existing standards and sources of information for different decision-makers.

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Finally, we appreciate support from the Good Energies Foundation for making this event possible.

APPENDIX

Participant List

The following individuals participated in the CFPD Dialogue.

Marcelo Aflalo	Núcleo da Madeira
Mohammad Asfour	World Green Building Council
Mark Ashton	The Forest School at the Yale School of the Environment
Ana Belizário	Amata SA
Paul Brannen	European Confederation of Woodworking Industries
Jacob Bukoski	Conservation International
Lyndall Bull	Food and Agriculture Organization (FAO)
Stephanie Burrell	World Economic Forum (WEF)
Stephanie Carlisle	Carbon Leadership Forum (University of Washington)
Kerry Cesareo	World Wildlife Fund (WWF)
Galina Churkina	Potsdam Institute
Caitlin Clarke	The Nature Conservancy (TNC)
Kylie Clay	Michigan State University, Forest Carbon and Climate Program
Lauren Cooper	Michigan State University, Forest Carbon and Climate Program
Annette Cowie	New South Wales Department of Primary Industries
Salmaan Craig	Peter Guo-hua Fu School of Architecture at McGill University
Jad Daley	American Forests
David Diaz	Ecotrust
Gary Dunning	The Forests Dialogue (TFD)
Ara Erickson	Weyerhaeuser
Kathryn Fernholz	Dovetail partners
Tyler Freres	Freres Lumber Co., Inc.
Angela Graham-Brown	World Business Council for Sustainable Development (WBCSD)
Nathalia Granato Loures	Indústria Brasileira de Árvores (Ibá)
Andrew Heald	Andrew Heald Consultant
Jim Heyes	Criterion Africa Partners
Susan Jones	atelierjones
Ben Kaiser	Kaiser + Path
Jamie Lawrence	Good Energies Foundation
Lauri Linkosalmi	Stora Enso
Pekka Leskinen	European Forest Institute

Simone Lovera	
Mokena Makeka	Dalberg Advisors
Steve Marshall	Mass Timber Strategy
Vincent Martinez	Architecture 2030
Silvia Melegari	European Organisation of the Sawmill Industry (EOS)
James Mitchell	BuildX Studio
Rodrigo Morales Vera	Universidad Católica del Maule
Anna-Liisa Myllynen	Stora Enso Wood Products
Ivone Namikawa	Klabin
Kevin Naranjo	USDA Forest Service
Will Novy-Hildesley	Mass.
Milagre Nuvunga	MICAIA Foundation
Jo O'Hara	FutureArk Ltd.; Institute of Chartered Foresters
Alan Organschi	Gray Organschi Architecture, Yale School of Architecture; Bauhaus der Erde
Rachel Pasternack	The Nature Conservancy (TNC)
Mireille Perrin	Good Energies Foundation
Sarah Price	Sappi
Lindsay Rasmussen	Architecture 2030
Barbara Reck	Yale School of the Environment
Kristin Slavin	Sidewalk Labs
Peggy Smith	Lakehead University, Natural Resources Management
Eddie Sonne Hall	Three Trees Consulting
Rod Taylor	World Resources Institute (WRI)
Nicolaos Theodorakis	Noah
Juan José Ugarte	Corporación Chilena de la Madera
Robyn van den Heuvel	Dalberg Advisors
Leo van der Vlist	Netherlands Centre for Indigenous Peoples
Margaret Vernon	One Acre Fund
Alexander von Bismarck	Environmental Investigation Agency
Devang Vussonji	Dalberg Advisors
Mark Wishnie	BTG Pactual Timberland Investment Group
Peter Wood	Canopy
Ana Yang	Chatham House
Yuan Yao	Yale School of the Environment

EVENT OVERVIEW

Session 1: Understanding Stakeholder Perspectives and Future Scenarios

Monday April 26, 10:00 – 13:00 ET

10:00 ET **Plenary Presentation: Dialogue Start and Introductions**

- Welcome, TFD and Initiative background
- Dialogue expectations and ground rules
- Overview of participants ‘in the room’

10:30 ET **Small Group Introductions: Dialogue Expectations**

10:45 ET **Plenary Presentation: High-level Overview of the Context and Need for Dialogue**

- Trends in Urbanization and the Built Environment: Alan Organschi
- Forests and Demand: Katie Fernholtz
- Global Emissions Projections: Barbara Reck
- Background Paper Overview and Findings: Edie Sonne Hall

11:15 ET **Breakout Discussion: Perspectives on Opportunities and Challenges**

12:00 ET **Break**

12:10 ET **Plenary Discussion: Breakout Groups Report Back**

12:40 ET **Plenary Presentation: Case Study**

12:50 ET **Wrap-up and Adjourn**

Session 2: Scoping Key Themes

Thursday April 29, 10:00 – 13:00 ET

10:00 ET **Plenary Presentation: Summary of Session 1**

10:10 ET **Plenary Reactions and Discussion**

10:40 ET **Breakout Discussion 1: Impacts on Forests, Climate Change, and Society**

- ➔ Drilling down on 4 key themes from session 1 (to be decided in each group)
 - Forest Health, Ecosystem services and Biodiversity Considerations
 - Forest + Landscape Management
 - Climate Change Mitigation (and projections)
 - Social Considerations

11:20 ET **Break**

11:30 ET **Plenary Discussion: Breakout Groups Report Back**

11:55 ET **Breakout Discussion 2: Mass Timber Supply, Demand, Markets and Barriers**

- ➔ Drilling down on 4 key themes from session 1 (to be decided in each group)
 - Regional Variation in Supply, Need, and Risk
 - Supply and Market Dynamics for Timber
 - Barriers to Scaling up Mass Timber Industry
 - Built Environment and Demand

12:35 ET **Break**

12:45 ET **Plenary Discussion: Breakout Groups Report Back**

12:45 ET **Wrap-up and Adjourn**

Optional Session 2.5 : Background Paper Feedback and Reflections

Friday April 30, 11:00 – 12:00 ET

11:00 ET **Discuss background paper findings, feedback, and future direction**

12:00 ET **Wrap-up and Adjourn**

Session 3: Cocreating a Path Forward and Mobilizing Action

Monday May 3, 10:00 – 13:00 ET

10:00 ET **Welcome**

10:10 ET **Plenary Presentation: Summary of Previous Sessions**

10:20 ET **Plenary Reactions and Discussion**

10:30 ET **Breakout Discussion: Co-creating Strategies and Actions**

➔ Generate solutions, strategies, and actions related to themes:

- Forests
- Climate Change
- Social Considerations
- Urban, Building + Demand

11:50 ET **Break**

12:00 ET **Plenary Discussion: Breakout Groups Report Back on Strategies**

12:20 ET **Plenary Discussion: Mobilizing Stakeholder Networks and Action**

12:45 ET **Plenary Discussion: Reflections and Next Steps**

12:55 ET **Wrap-up and Adjourn**

ENDNOTES

¹ United Nations Environment Programme (2020). 2020 Global Status Report for Buildings and Construction: Towards a Zero-emission, Efficient and Resilient Buildings and Construction Sector. Nairobi.

² Ibid.

³ https://theforestdialogue.org/sites/default/files/2021_29junebackgroundpaperclimate_interactive.pdf