



The Forests Dialogue

Bioenergy From Forests Scoping Dialogue

27 February 2024



Welcome

Agenda



- 9:00** Welcome
- 10:00** Opening Presentations
- 10:45** Breakout Discussion I
- 11:45** Lunch & Report Back
- 12:45** Plenary Discussion
- 14:00** Breakout Discussion II
- 15:00** Report Out
- 15:30** Break
- 15:45** Prioritization and Path Forward
- 17:30** Adjourn
- 18:30** Dinner

Dialogue Co-Chairs



Ann Bartuska
Resources for the
Future &
Environmental
Defense Fund



Jason Funk
Conservation
International



Phil Rigdon
Yakama Nation
Dept of Natural
Resources



Sara Kuebbing
Yale Applied
Science Synthesis
Program



Gary Dunning
The Forests
Dialogue

+ Support from the TFD Team (Liz, Violet, and Steven)

Advisory Group Members

- **Mark Ashton**, The Forest School at the Yale School of the Environment
- **Ann Bartuska**, Resources for the Future & Environmental Defense Fund
- **Kyla Cheynet**, Drax Inc
- **Brandi Colander**, Enviva
- **Virginia Dale**, University of Tennessee
- **Sabina Dhungana**, US Forest Service
- **Matt Donegan**, Donegan Advisors
- **Zander Evans**, Forest Stewards Guild
- **Alice Favero**, Georgia Tech
- **Jason Funk**, Conservation International
- **Christopher Galik**, North Carolina State University
- **Treva Gear**, Concerned Citizens of Cook County & Dogwood Alliance
- **Brad Gentry**, Yale School of the Environment
- **Sara Kuebbing**, Yale Applied Science Synthesis Program
- **Jonathan Kusel**, Sierra Institute
- **Phil Rigdon**, Yakama Nation Dept of Natural Resources
- **Mark Wishnie**, BTG Pactual Timberland Investment Group

Dialogue Goals

- ☆ Build a collective understanding of **stakeholders' perspectives, concerns, and priorities** related to Bioenergy from Forests.
- ☆ Identify **areas of disagreement and agreement** related to Bioenergy from Forests, especially as these issues relate to forests and land use.
- ☆ Explore the question, if Bioenergy from Forests, **when, where and under what conditions?**
- ☆ Co-create an **actionable plan that presents a path forward** for further engagement to explore issues identified and prioritized by dialogue participants.

Dialogue Ground Rules

TFD operates under the Chatham House Rule

“Participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed.”

- Engage in the “spirit of dialogue”
- Practice active listening
- Participate as individual
- Take space, make space
- Help define and own the outcomes
- Use name tent in plenary





Participant Introductions

Participant Introductions



Name

Organization

Location

Dialogue Expectations



The Forests Dialogue (TFD) Overview

TFD Origins

Established in 2000 by NGO and Business Leaders in order to:

- **Reduce conflict** among stakeholders;
- Create an independent **international platform and process** to discuss key SFM and conservation issues;
- Build **mutual trust** and enhanced understanding and commitment to change.



TFD By The Numbers



TFD by the Numbers

- 1st dialogue in 2002 on Forest Certification
- 24 Initiatives dialogue in 2002 on Forest Certification
- 102 Dialogues
- 36 Countries
- 3000+ Stakeholders
- 100+ Publications
 - 3000+ Stakeholders
 - 90+ SC Leaders
 - 100+ Publications

TFD Initiatives 2000-2024

- **Ecosystem Restoration**
- **Tree Plantations in the Landscape**
- **Land Use Dialogues**
- **Bioenergy from Forests**
- **Climate Positive Forest Products, Mass Timber**
- **Understanding Deforestation Free**
- **Genetically Modified Trees**
- **REDD+ Initiatives (4 total)**
- **Food, Fuel, Fiber, Forests**
- **Free Prior and Informed Consent**
- **Investing in Locally Controlled Forestry**
- **Forests and Poverty Reduction in Rural Livelihoods**
- **Intensively Managed Planted Forests**
- **Illegal Logging and Forest Governance**
- **Forests and Biodiversity Conservation**
- **Forest Certification**





TFD Theory of Change

1. **‘ENGAGE’**: Identify key issues, build trust, share perspectives and information.
2. **‘EXPLORE’**: Seek agreement about challenges and opportunities to solve forest-related ‘fracture-lines’.
3. **‘CHANGE’**: Promote and facilitate actions that lead to solutions, with impact in policy and on the ground.

**See TFD Guide for step-by-step detail*



TFD's "Scoping" Dialogue

- Leaders in the field are asked to **share their perspectives**: listen, learn, and share broad range of knowledge and experiences.
- Advise on the **potential for positive change** through a multi-stakeholder dialogue initiative
- Focus on **key questions and opportunities for progress**.
- Not driving for solutions yet: **exploring interest** in collaborative solutions.

Identifying Fracture Lines

- A *fracture line* is an issue where there is conflict between stakeholder groups that, if not addressed, can cause a rift between sides.
- The metaphor illustrates that a dialogue issue may run through multiple disagreements or power imbalances.



Featured Videos



For More on TFD

TFD Videos



Available at: www.youtube.com/user/TheForestsDialogue

TFD Documents and Publications



Available at: www.theforestsdialogue.org



Follow us on Twitter: [@forestsdialogue](https://twitter.com/forestsdialogue)



Like us on Facebook: [the forests dialogue](https://www.facebook.com/the-forests-dialogue)



Email us at: info@theforestsdialogue.org

TFD Address and Phone

The Forests Dialogue

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Focus Group Discussion Summary

Focus Group Overview

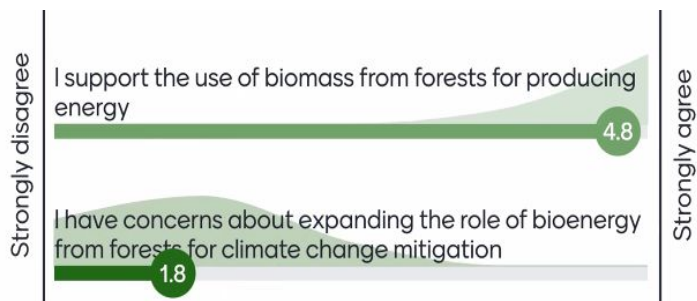
TFD convened a series of four focus group meetings between April-August 2023 with the goals of:

- Building understanding of stakeholder perspectives and knowledge related to the use of forest biomass for energy production.
- Discussing the potential for continued stakeholder engagement to explore areas of agreement, disagreement, and fracture lines.

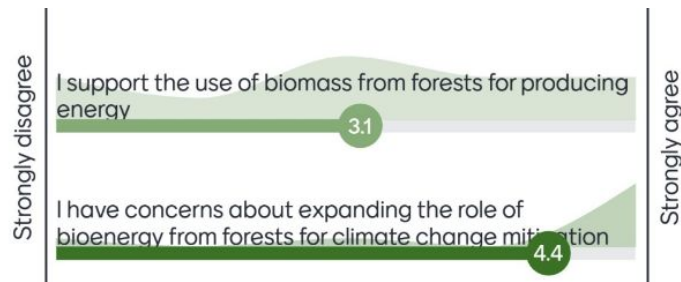
Focus Groups	
Forest Owners or Managers 6 Participants	Civil Society Organizations 10 Participants
Research and Academia 10 Participants	Wood Pellet & Energy Producers 9 Participants

Temperature Check: Support & Concerns

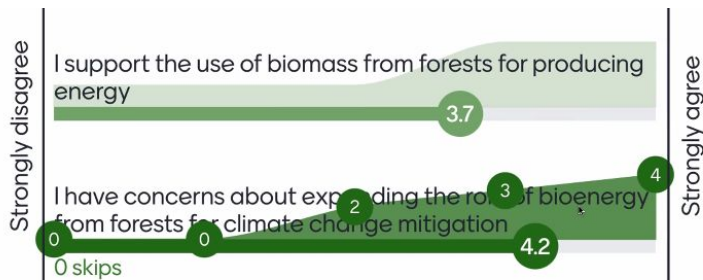
Forest Owners or Managers



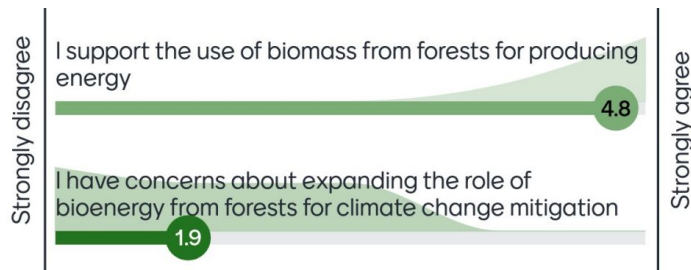
Civil Society Organizations



Research & Academia



Wood Pellet & Energy



Focus Group Example Questions

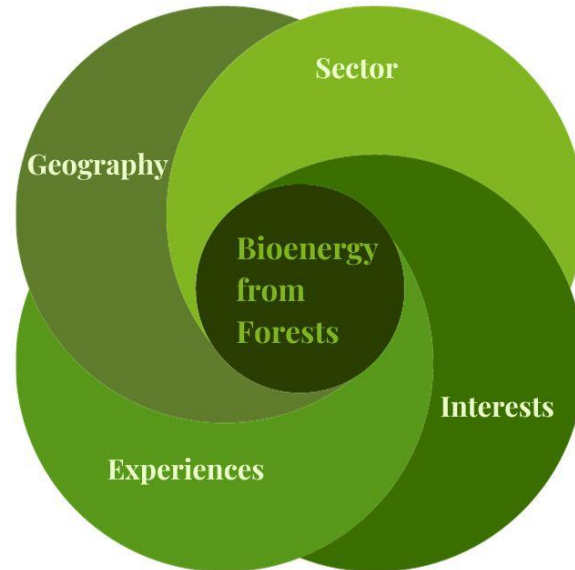
WHAT ARE THE
CONDITIONS, IF ANY, FOR
A SUCCESSFUL AND
SUSTAINABLE BIOENERGY
FROM FORESTS SECTOR?

1. Under what conditions do you recommend bioenergy be produced from U.S. forests? When, where, and with what practices?
2. What are your key considerations for a viable bioenergy from forests sector?
3. What safeguards or assurances to meet these conditions would be needed or have you seen work well?



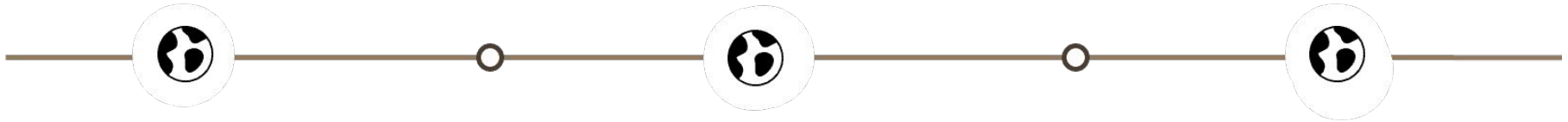
Stakeholder Entry Points to BEF

One of the key dynamics of BEF is that it intersects a wide range of expertise, experiences, geographies and interests. Understanding the range of entry points help illuminate various perspectives on what is **in and out of scope** of conversation, and **motivations for engaging** in a dialogue process.



Conversations Spanned Three General Dimensions

While nuanced, stakeholder discussions can be broadly categorized into three general dimensions:



The **sourcing** of biomass and the **social and ecological conditions** around its production

- Forest management
- Impacts on ecosystems and people
- Fire resilience

BEF in the context of the **wider markets** of forest products and energy

- Integrated forest product supply chain
- Woody biomass feedstocks
- Energy infrastructure: environmental and social impacts

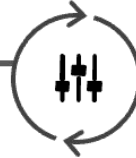
Climate impacts

- Potential role in net zero GHG emission pathways
- GHG accounting
- Forest & climate change resilience and mitigation

Areas For Further Discussion & Dialogue Recommendations

Areas for Further Discussion

- How to understand sustainability of biomass for BEF: traceability & different interpretations of sustainability
- The meaning of community risks and benefits
- Suggestions and cautions for regulatory and market mechanisms for BEF
- Appropriate scale for BEF as a nature-based solution to climate change



Recommendations for Dialogue

- Specific framing around appropriate uses for biomass, energy sources, and carbon-capture technology
- Inclusive of non-research participants (Do not presume or rely on technical expertise)
- Desire to hear from critics of BEF
- Importance of engaging communities and learning about environmental justice concerns directly
- Debates and confusion over terminology
- Interest in learning from diverse BEF contexts
- Not appropriate venue to resolve highly technical academic debates



Background Paper Presentation

Bioenergy From Forests: Background paper

Weier Liu¹, Miaohan Tang², Sara Kuebbing¹

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*1 Yale Applied Science Synthesis Program (<https://synthesis.yale.edu>)
The Forest School at Yale School of the Environment, Yale University*

*2 Environmental System Analysis Group
Department of Chemical Engineering, Northwestern University*

Setting the stage

Section I: Life cycle of bioenergy from forests

- Overview the current state of knowledge, objective

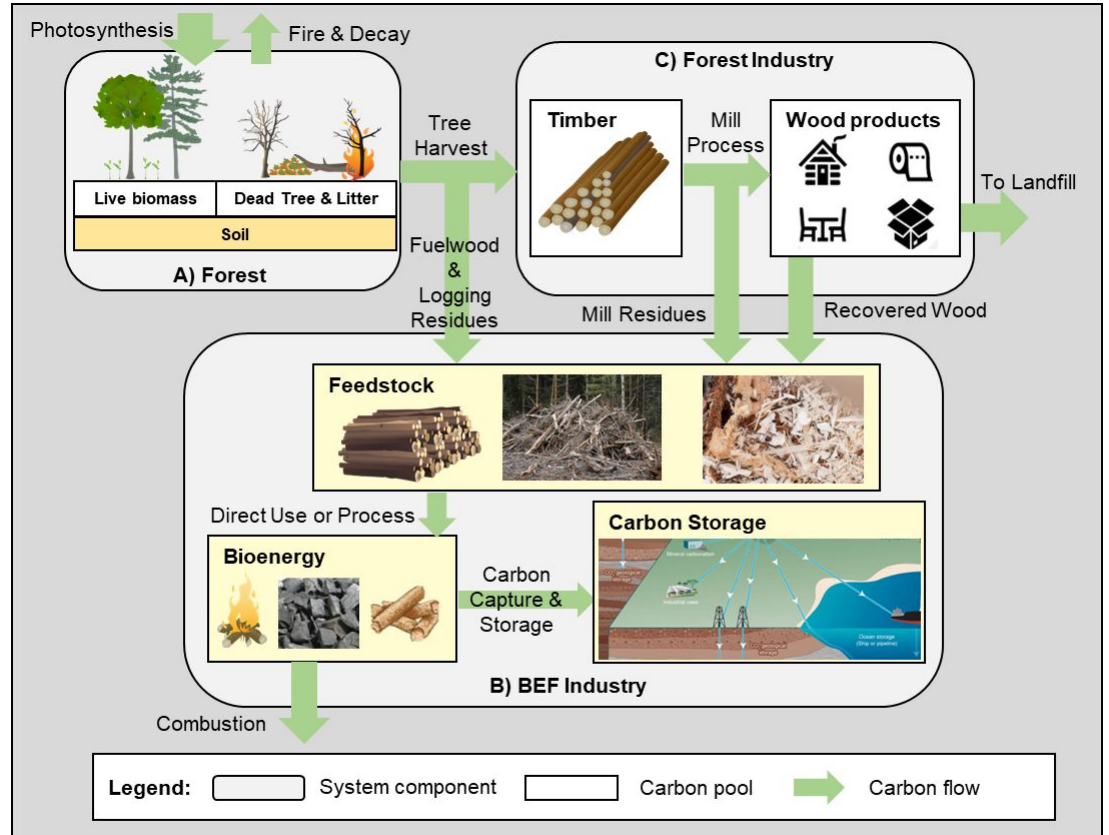
Section II: Areas of concern and disagreement

- Understand why there are different opinions, subjective

Dialogue on a common ground

Life-cycle framework

**BEF is a
multidisciplinary
system**

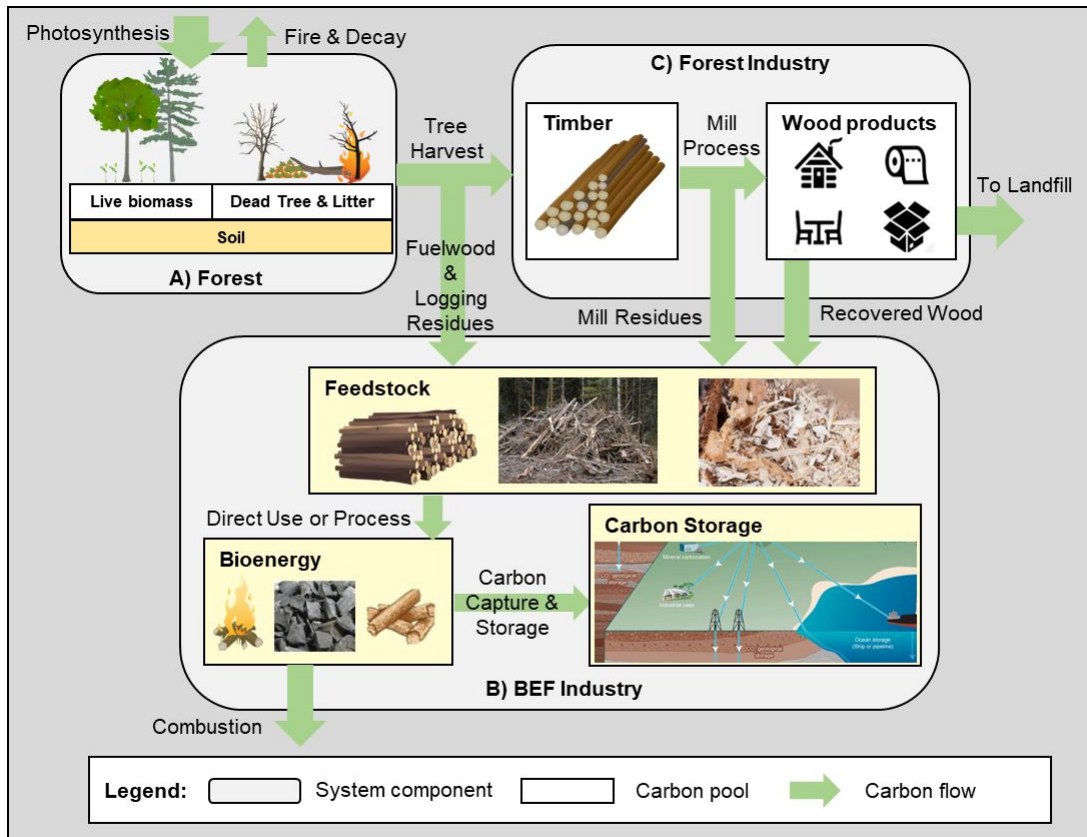


* Photo and icon credits: Giuntoli et al. 2022; University of Maryland Center for Environmental Science; U.S. Forest Service, 2017. How much logging residue is left behind?; IPCC, 2005. Special report on carbon capture and storage.

Life-cycle framework

- How does the wood (and carbon) flow?

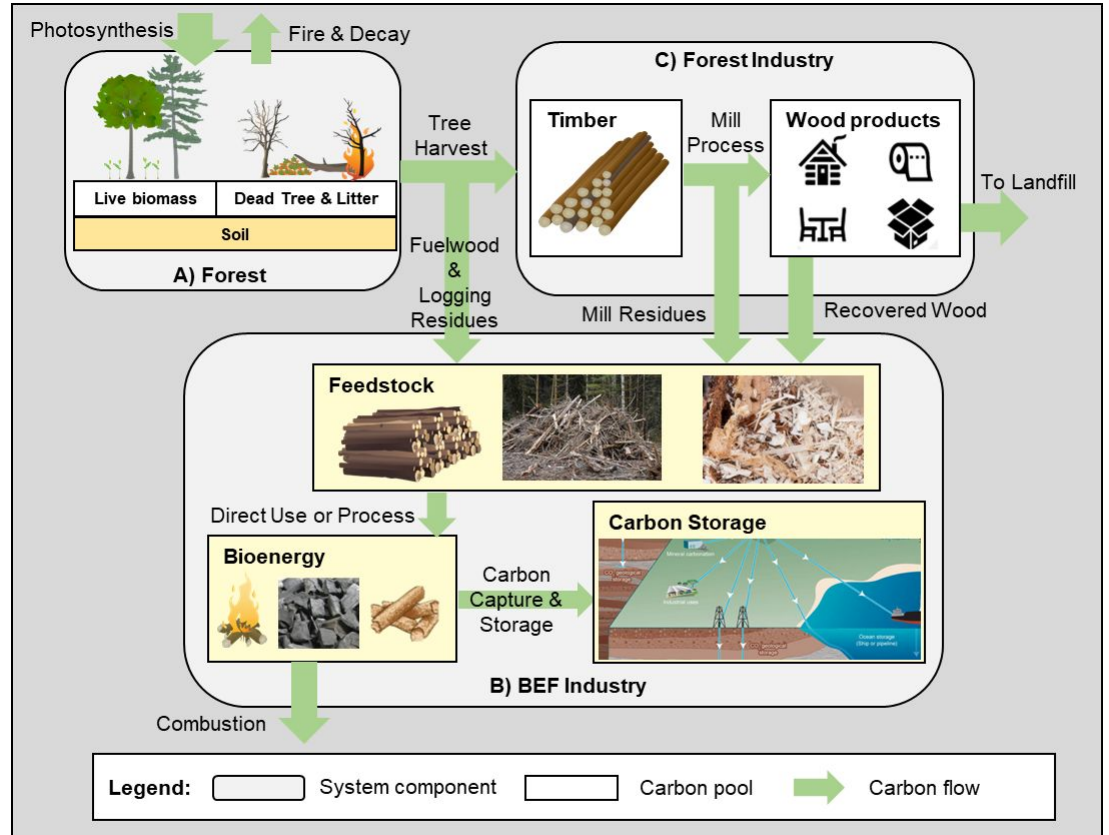
- *Forest carbon cycle*
- *Forest industry*
- *Energy industry*



* Photo and icon credits: Giuntoli et al. 2022; University of Maryland Center for Environmental Science; U.S. Forest Service, 2017. How much logging residue is left behind?; IPCC, 2005. Special report on carbon capture and storage.

Life-cycle framework

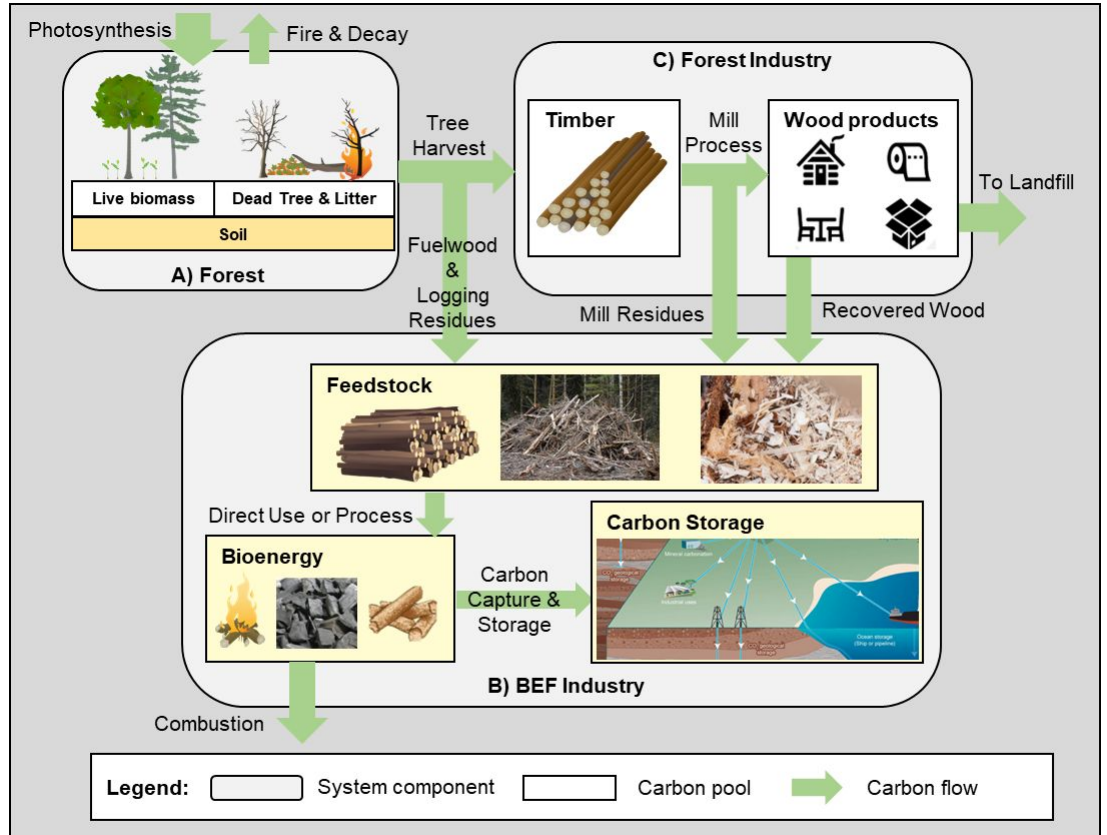
- How does the wood (and carbon) flow?
- **What changes the flows and how?**
- *Impact of global change*
- *Human activities*
 - *Forest management*
 - *Production technologies*
 - *BECCS*



* Photo and icon credits: Giuntoli et al. 2022; University of Maryland Center for Environmental Science; U.S. Forest Service, 2017. How much logging residue is left behind?; IPCC, 2005. Special report on carbon capture and storage.

Life-cycle framework

- How does the wood (and carbon) flow?
- What changes the flows and how?
- **What are the impacts?**
 - *Climate effect*
 - *Resource consumption*
 - *Pollution*
 - *Biodiversity*



* Photo and icon credits: Giuntoli et al. 2022; University of Maryland Center for Environmental Science; U.S. Forest Service, 2017. How much logging residue is left behind?; IPCC, 2005. Special report on carbon capture and storage.

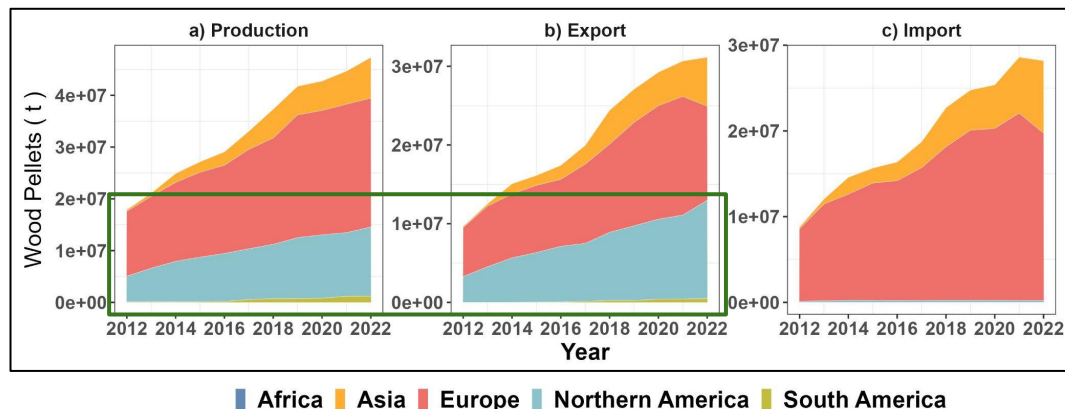
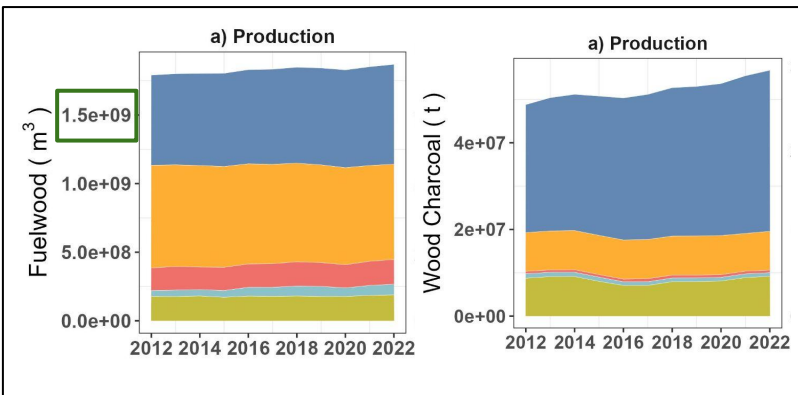
Current state - statistics

Bioenergy is the largest renewable energy source

(55% of all renewable, 6% of global energy supply)

Traditional bioenergy BIG

Pellet GROWING



■ Africa ■ Asia ■ Europe ■ Northern America ■ South America

Areas of concern and disagreement

Discussion about BEF is challenging because the system is complex.

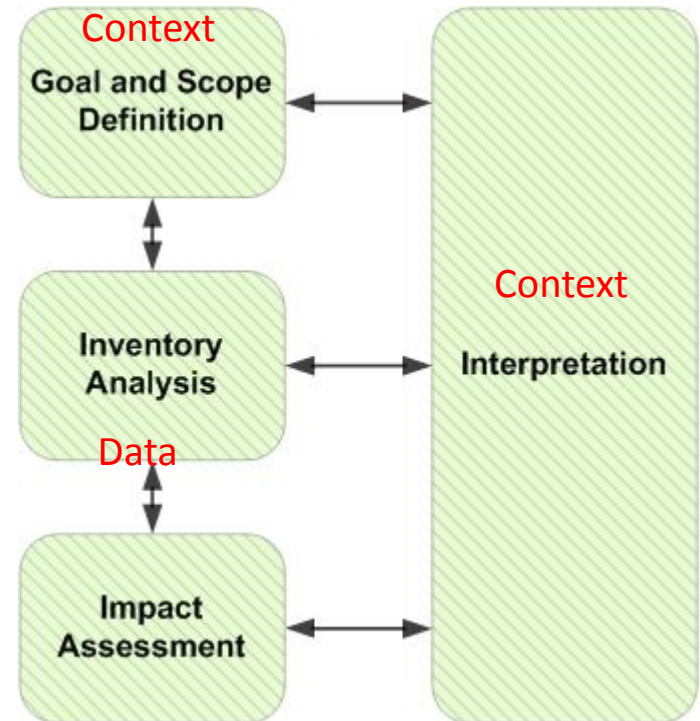
The CONTEXT of specific use cases of the system varies greatly.

Areas of concern and disagreement

CONTEXT:

- **Modeling tool (impact assessment including climate effect)**

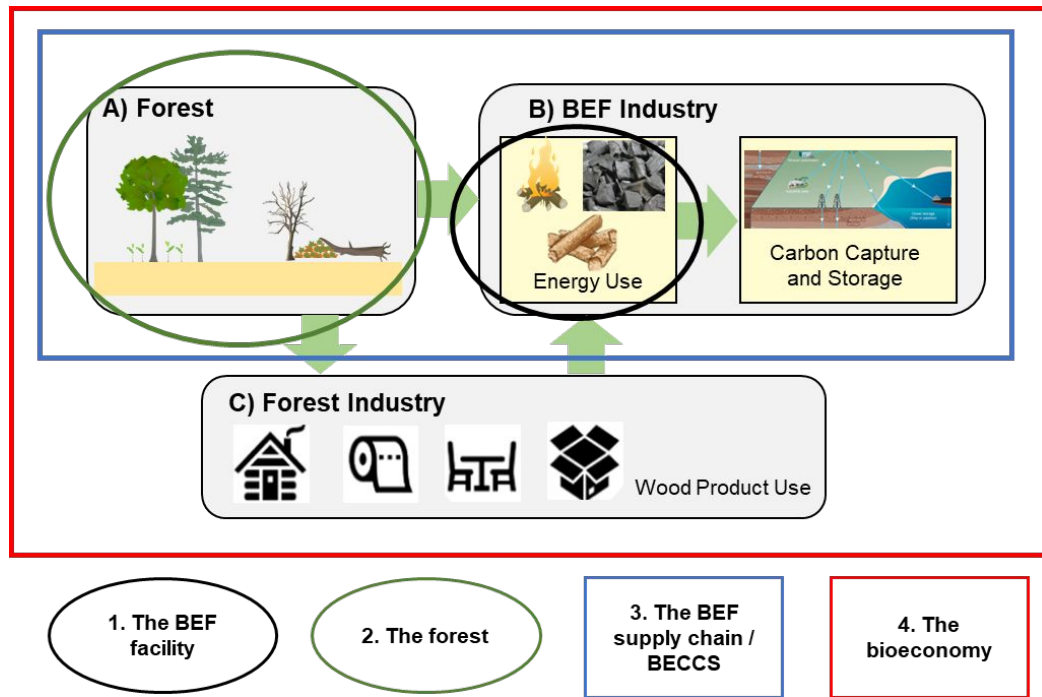
Life-Cycle Assessment (LCA) framework



Areas of concern and disagreement

CONTEXT:

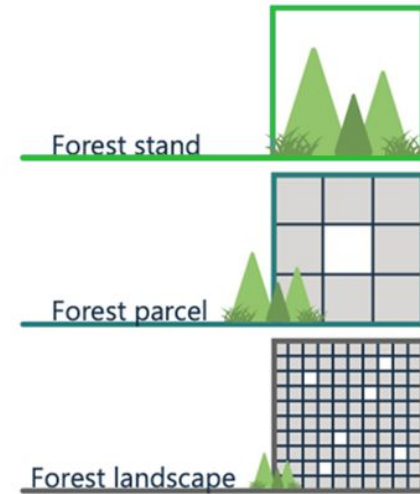
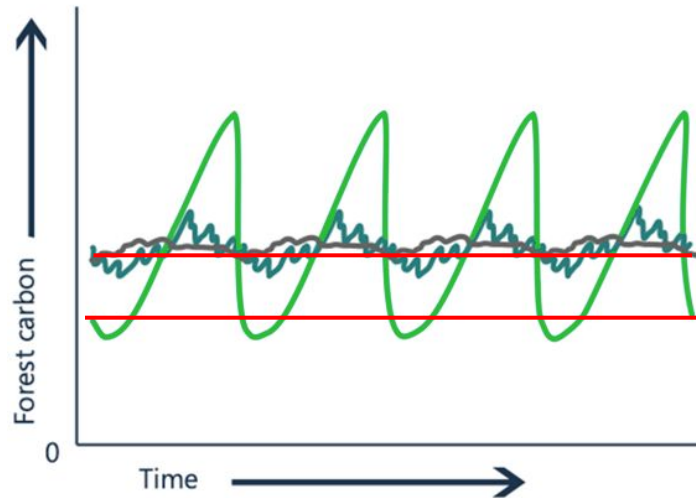
- Modeling tool (impact assessment including climate effect)
- **System boundary (what to include, at what scale)**



Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- **System boundary (what to include, at what scale)**



Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- System boundary (what to include, at what scale)
- **Counterfactual (what scenarios are we comparing to)**

Counterfactual energy scenario



Substitution /
Displacement



fossil



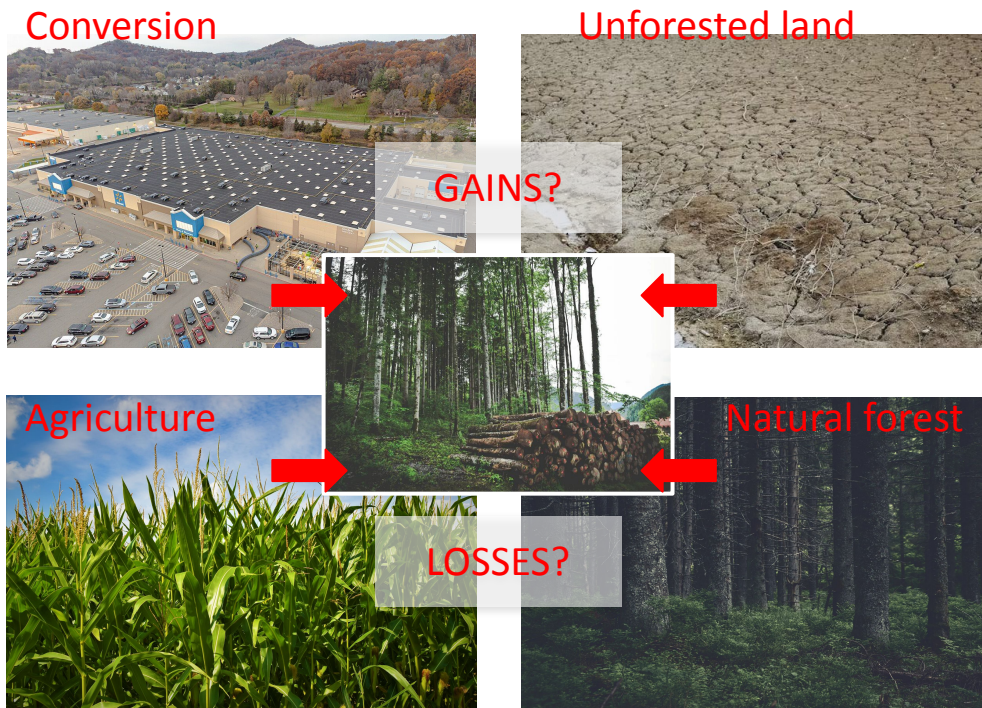
Other
renewables

Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- System boundary (what to include, at what scale)
- **Counterfactual (what scenarios are we comparing to)**

Counterfactual land use scenario



Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- System boundary (what to include, at what scale)
- Counterfactual (what scenarios are we comparing to)
- **Sourcing (where and how to get the biomass)**

Forest management

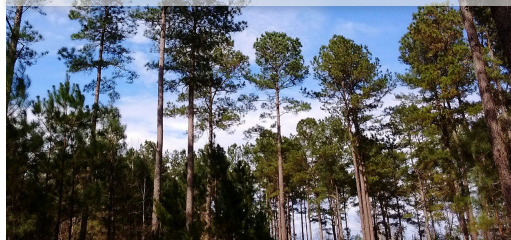
Intensive management?



Residue?



Sustainable management?



Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- System boundary (what to include, at what scale)
- Counterfactual (what scenarios are we comparing to)
- **Sourcing (where and how to get the biomass)**

International trade

Win-Win?

Leakage?

Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- System boundary (what to include, at what scale)
- Counterfactual (what scenarios are we comparing to)
- Sourcing (where and how to get the biomass)
- **Market change (supply and demand)**

How to supply the increasing demand



Land is limited



Wood is increasingly needed

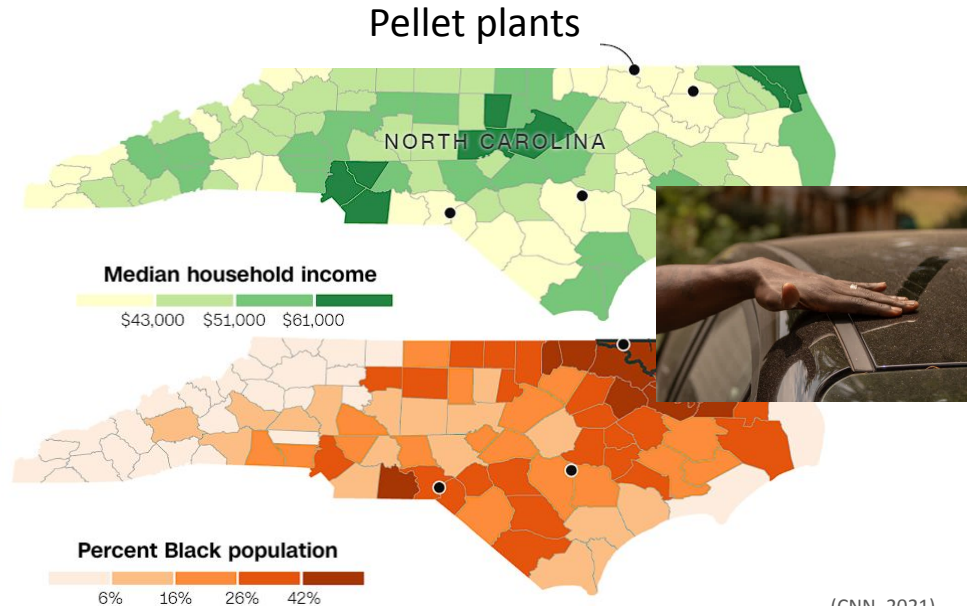


Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- System boundary (what to include, at what scale)
- Counterfactual (what scenarios are we comparing to)
- Sourcing (where and how to get the biomass)
- Market change (supply and demand)
- **Environmental justice and equity**

More negative impacts (pollution, noise, etc.) on the Environmental Justice Communities



Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- System boundary (what to include, at what scale)
- Counterfactual (what scenarios are we comparing to)
- Sourcing (where to get the biomass)
- Market change (supply and demand)
- **Environmental justice and equity**

Upstream engagement -
involve local stakeholders
(local communities, private
landowners, ...)

Integrated socio-economic
into the assessment - get
more and more equally
distributed co-benefits
(higher income, more jobs,
infrastructure, ...)

Areas of concern and disagreement

CONTEXT:

- Modeling tool (impact assessment including climate effect)
- System boundary (what to include, at what scale)
- Counterfactual (baseline scenarios)
- Sourcing (where and how to get the biomass)
- Market change (supply and demand)
- Environmental justice and equity

Be more specific about the context!

Thank you!

Questions? Comments? What did I miss?

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Breakout Discussion 1

Breakout Questions

What about the **Background Paper Areas of Concern** resonated with you? What was missing?

What do you see as the **principal challenges** related to Bioenergy from Forests?



Grab coffee and join your breakout group:

1	2	3	4
Sara Kuebbing	Ann Bartuska	Phil Rigdon	Gary Dunning
Thomas Harris	Mimi Okhuysen	Isabela Valencia	Anna Stemberger
Virginia Dale	Maggie Davis	Mark Ashton	Thomas Buchholz
Mike Ferrucci	Brad Gentry	Freddie Davis	Kyla Cheynet
William Moomaw	Heather Hillaker	Zander Evans	Justin Freiburg
Matthew Potts	Jonathan Kusel	Edie Juno	Jason Funk
Alicia Raimondi	Joe Taggart	Betsy Lesnikoski	Karen Gómez García
Olivia Rhodes	Bakul Wadgaonkar	Chenlin Li	Matt Sampson
		Liu Weier	



Lunch



Breakout Discussion 1: Report Back

Report Out: Group 1

What about the Background Paper Areas of Concern resonated with you? What was missing?

- Framing the Background Report
 - There are areas of agreement to highlight
 - The role of “land sparing” approach to allocate area of production and areas of reserve for potentially non-compatible priorities (biodiversity)
 - The need for active management in certain regions to mitigate risk
 - What are forests for?
 - Climate mitigation
 - Climate regulation
 - How do we manage forests, and pay for management
 - Markets for harvested wood
 - Bioenergy is a relatively small compared to other products
 - Scale and context
 - Regional difference in US forests and how they are harvested and utilized
 - Connection to global demand especially European markets

What do you see as the principal **challenges** related to Bioenergy from Forests?

- Challenges
 - Tradeoff between people’s health, jobs and wellbeing
 - Where, when, how much?

Report Out: Group 2

What about the Background Paper Areas of Concern resonated with you? What are the principle challenges?

- Address the issue at the right scale, with the regional Picture in mind.
 - Scale needs to look at a balanced intersection of sustainable forests, biodiversity, and communities.
 - Illustrated with case studies.
 - At the regional scale, what is the problem we are trying to solve?
- Engaging the community appropriately
 - Understanding the local conditions and speaking with communities

What was missing?

- Discussions about the appropriate accounting schemes at the right scale.
- The use of certification systems and BMPs to assure sustainable practices
- The need for a trained workforce

Report Out: Group 3

What about the Background Paper Areas of Concern resonated with you? What was missing?
What do you see as the principal challenges related to Bioenergy from Forests?

- Sustainable Forestry
- Emerging Markets
- Leakage Concerns
- How Energy Markets Played a Role in Viability
- Integrated Markets
- Small Landowners and Maintenance
- Policy Choices
- Loss of Forest Infrastructure
- Carbon Capture and Storage

Report Out: Group 4

What about the Background Paper Areas of Concern resonated with you? What was missing?)

- Clarification and contextualization, need for explicit definitions, and removal of biased language
- What might be missing from the paper:
 - Appropriate scale
 - What is required to scale up?
 - How will we regulate the growth?
 - Recognize regional differences and heterogeneity across contexts
 - Better understanding future demand
 - Factors that affect demand (social license)
 - Role of competing uses of wood and biomass (carbon markets)
 - Fuller treatment of controversies in LCAs
 - Lack of standardization/ variability in boundaries results in divergent outcomes

Report Out: Group 4

What do you see as the principal challenges related to Bioenergy from Forests?

- Shrinking and aging **forestry labor workforce**
- **Variability in the climate outcomes** based on regional context and **LCA methodologies**
- **Social license to operate** - impacts to local and Indigenous communities (air quality concerns, land use, community perceptions of harms)
- Impacts to **biodiversity**
- **Climate risks** present uncertainties in the availabilities of feedstock
- **Competitiveness** with emerging renewable energy technologies.
- **Market uncertainty** based on US energy policy, regulations, trade, carbon markets
- **Lack of tools** for analyzing future scenarios and planning biomass development.



Plenary Discussion



Breakout Discussion 2

Breakout Groups

1	2	3
Sara Kuebbing	Ann Bartuska	Phil Rigdon
Leah Snavely	Gino Rivera	Isabela Valencia
North East	South East	West

Breakout Questions

- What are the specific **challenges in your region?**
- What do you see as the **key opportunities and needs** to support social-ecological-climate sustainability of BEF?



Report Out: Group 1 (North East)

What are the specific **challenges** in your region

- Forest diversity
 - Across the region
 - Within stands
- Low growth, low stocking
- No market for low grade material
 - Mill infrastructure
- Public acceptance of industrial bioenergy
- Pest and pathogens
 - Reducing forest health and resilience
 - Reducing high quality material

What do you see as the **key opportunities and needs** to support social-ecological-climate sustainability of BEF?

- In the Northeast, we're solving for funding sustainable forest management
 - Support rural economies and labor
 - Build forest climate resiliency
- Urban/rural connection and access to markets
- Low growth, low stocking - makes BEF markets more economically viable

Needs:

- Community management

Report Out: Group 2 (South East)

What are the specific **challenges** in your region

- Difficulty of keeping the land as forests
- Lack of access to diverse markets for low-value forests products
 - Legacy markets moving away
 - Access to new markets
- Recognizing that there is a legacy in the industry and the communities
- Thinking more creatively
- Air pollution monitoring

What do you see as the **key opportunities and needs** to support social-ecological-climate sustainability of BEF?

- Access to diverse markets for low-value forests products
 - Industrial parks model, capacity for a diversified production
 - Biochar, SAF, Marine Fuel
- Circular bio-economy
- Effective stakeholder engagement: diversity, values, trust, listening, accountability and flexibility
- Certification approaches, building on existing systems

Report Out: Group 3 (West)

What are the specific **challenges in your region**

- **Climate effects** in the west are present, acute, and severe (wildfires, drought)
- **Climate impacts on forests will be significant.** How do we keep forests where possible?
- Lack of **workforce**: aging workforce, cost of equipment makes it difficult for new producers
- **Scale of operations**: needs to be highly localized, transportation is difficult and expensive. Localization can also lead to siloing
- **Federal ownership** of land: Forest Service is slow, generally slow permitting problems. Lack of continuity in projects because of federal delays
- **History of fire exclusion** has led to dense forests: risk to climate resilience, creates vulnerable ecosystems
- **Lack of infrastructure** or highly concentrated infrastructure (Southern California). Transportation is difficult

What do you see as the **key opportunities and needs** to support social-ecological-climate sustainability of BEF?

Opportunities:

- Severe wildfires have created support for improved forest management
 - Opportunity for infrastructure investment
- Stacking of forestry revenues and benefits
 - Could help overcome siloing, creating more resilient forestry systems with multiple revenue streams/community integration
 - Need more horizontal and vertical integration of production (idea of **wood-product campuses**)
- NEPA crews: supports **continual project work** and helps finance and justify infrastructure

Needs:

- Lots of “chicken and egg problems”: need demand for products before infrastructure can go into place, but need infrastructure for products to be produced
- Need for improved technology to deal with steep slopes, difficult landscapes



10 Minute Break



Breakout Discussion 2: Report Back



15 Minute Break



Prioritization and Path Forward



Co-Chair Reflections



TFD Next Steps