

universität freiburg

# ‘Sustainable Wood’

Learning from the Governance of the Past

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Professor for Forest and Environmental Policy at the University of Freiburg

Vice President IUFRO

Rome, 25 March 2024



# What to expect

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1. Setting the scene
2. International governance landscape and its critique
3. Learning from the past – the challenges for ‘sustainable wood’

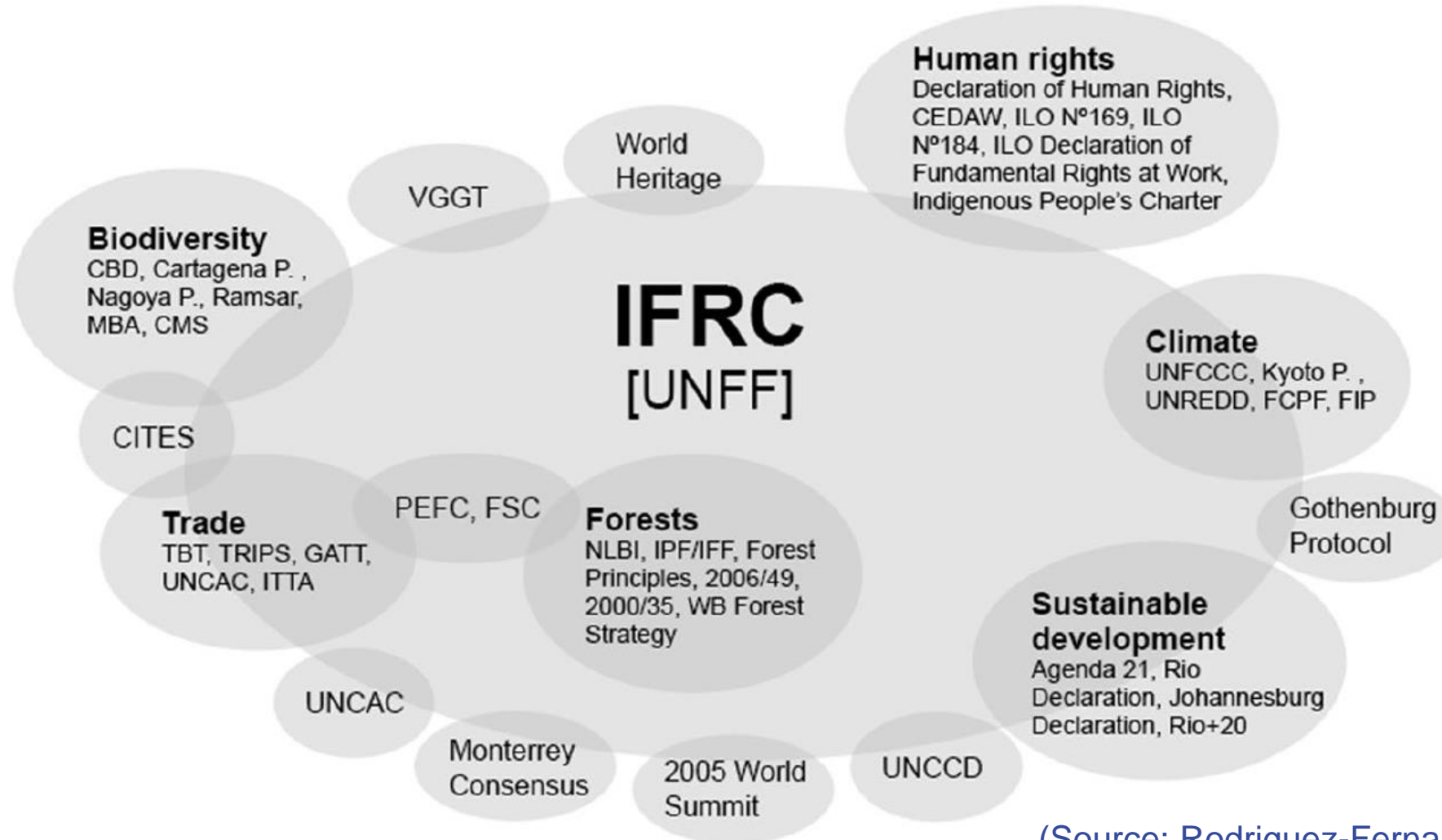
# Sustainability



# International Governance Landscape and its critique



# International Forest Regime Complex



(Source: Rodriguez-Fernandez-Blanco et al. 2019)

# International Forest Governance

Forests provide a multitude of goods and services and there is no single legally-binding intergovernmental agreement covering all of these.

Instead:

- Intergovernmental agreements on diverse forest-related policies (climate, biodiversity, human well-being, markets...)
- Private governance and hybrid governance
- Regionalization of governance

→ Limited effectiveness as well as incoherences and trade-offs between different governance levels, goals and instruments

# Bioeconomy

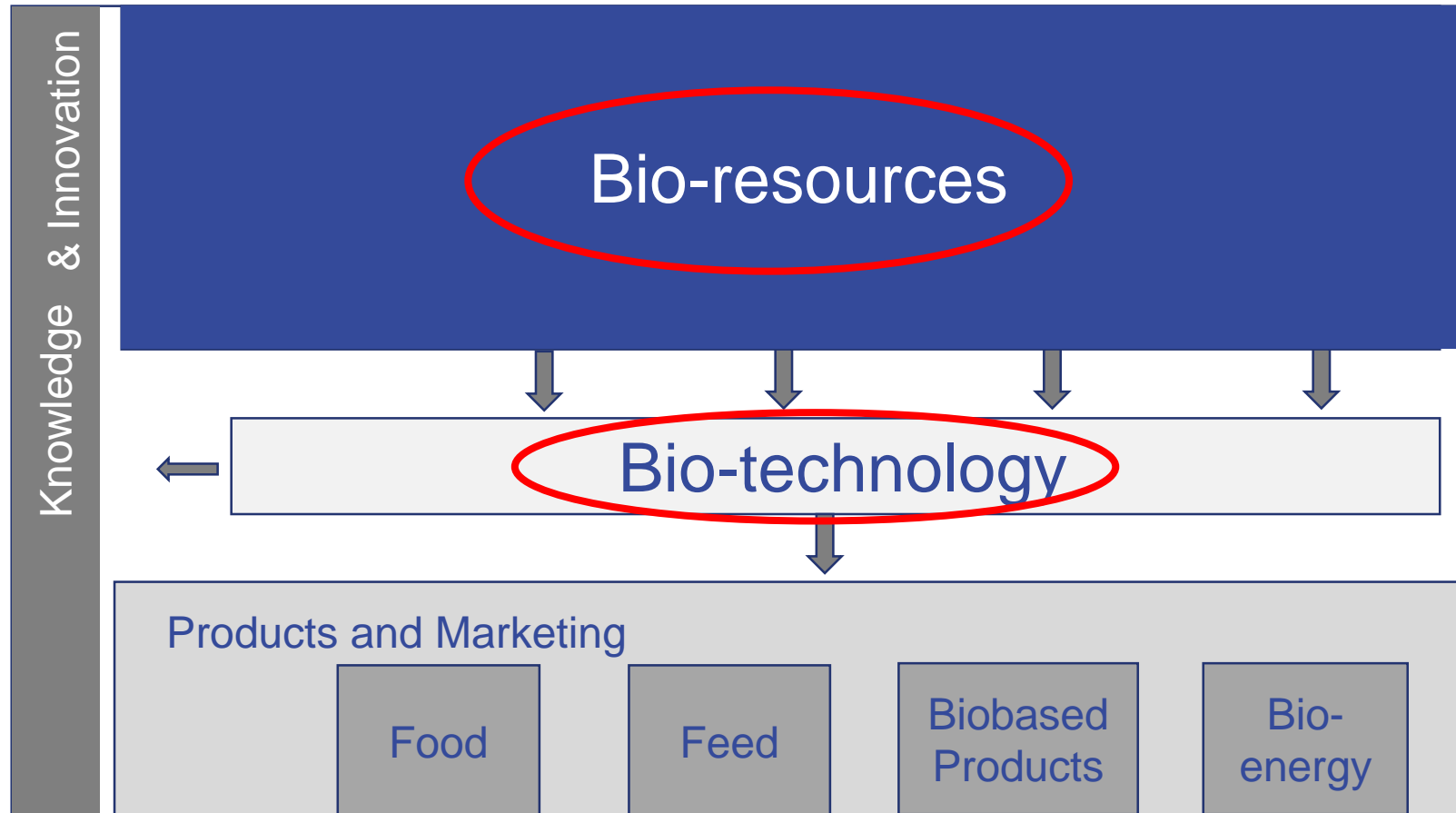


Figure adapted from Hüttl, 2013

# Bioeconomy Policy

The bioeconomy means **using renewable biological resources from land and sea, like crops, forests, fish, animals and micro-organisms to produce food, materials and energy**. Stronger development of the bioeconomy will help the EU accelerate progress **towards a circular and low-carbon economy.** (EU)

In Finland, bioeconomy refers to an economy that **relies on renewable, biological natural resources** in a resource-efficient manner to produce food, energy, products and services. (FIN)

The German Federal Government defines the *bioeconomy as the production, exploitation and use of biological resources, **processes and systems** to provide products, processes and services across all economic sectors within the framework of a future-oriented economy.* (GER)

# Diverse Goals in EU and African Bioeconomy Strategies

	EAC	EU	Finland	Germany	South Africa
Economic goals	<p>bio-based Industrial Development</p> <p>sustainable energy supply</p>	<p>managing natural resources sustainably</p> <p>reducing dependence on fossile materials</p> <p>competitiveness, securing and creating jobs</p>	<p>higher value added from the bioeconomy</p> <p>strong competence and technology base</p> <p>competitive operating environment</p> <p>usability and sustainability of bioresources and other ecosystem services</p>	<p>managing natural resources sustainably</p> <p>reducing dependence on fossile materials</p> <p>competitiveness and securing and creating jobs</p>	
Ecological goals	sustainable agriculture	combating and adapting to climate change		combating and adapting to climate change	
Societal goals	<p>ensuring food security</p> <p>health and well-being</p>	ensuring food security		ensuring food security	
Political goals					<p>development of (higher) education sector capacities</p> <p>government/ Ministry cooperation and coherency</p>
(Kleinschmit et al. forthcoming)					

# Critique of Bioeconomy Policies

- Difficult to evaluate sustainability: criteria and indicators are missing (rhetoric?)
- Focus on Economy rather than an encompassing sustainability
  - Intensified forestry and over-exploitation,
  - Increasing wood import with low sustainability standards
- Top down policy with limited participation of diverse sectors and civil society
- Limited Success Stories, weak management of intellectual property rights, missing technological knowledge and investment

# Legality Verification

## Objectives

Ensuring “sustainable” and legally harvested timber

## Critique:

- Weak efficiency - continued illegal logging
- Leakage Effects
- Market Protectionism
- post-colonial framing



# Forest Landscape Restoration

“...a planned process that aims to regain ecological integrity and enhance human well-being in deforested or degraded landscapes”



UNITED NATIONS DECADE ON  
**ECOSYSTEM  
RESTORATION**  
2021-2030



New York Declaration on Forests  
**GLOBAL PLATFORM**



# Potential for Global Forest Cover

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HOME > SCIENCE > VOL. 365, NO. 6448 > THE GLOBAL TREE RESTORATION POTENTIAL

REPORT



## The global tree restoration potential

JEAN-FRANCOIS BASTIN  , YELENA FINEGOLD, CLAUDE GARCIA  , DANILO MOLLICONE  , MARCELO REZENDE  , DEVIN ROUTH, CONSTANTIN M. ZOHNER .

AND THOMAS W. CROWTHER  [Authors Info & Affiliations](#)

SCIENCE • 5 Jul 2019 • Vol 365, Issue 6448 • pp. 76-79 • DOI: 10.1126/science.aax0848

“... how much additional tree cover could exist outside of existing forests and agricultural and urban land. Ecosystems could support an additional 0.9 billion hectares of continuous forest. This would represent a greater than **25% increase in forested area**, including more than **200 gigatonnes of additional carbon at maturity**. Such a change has the potential to store an equivalent of 25% of the current atmospheric carbon pool.”

# Critique of FLR

- People “behind the pixels” are forgotten (leaving the most vulnerable behind)
- Sustainability concerns mainly address ecological issues (Climate Change)
- “Olympics” of pledges and targets
- Limited effectiveness

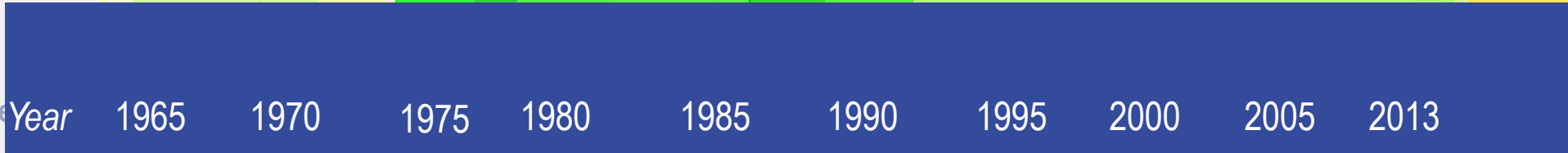
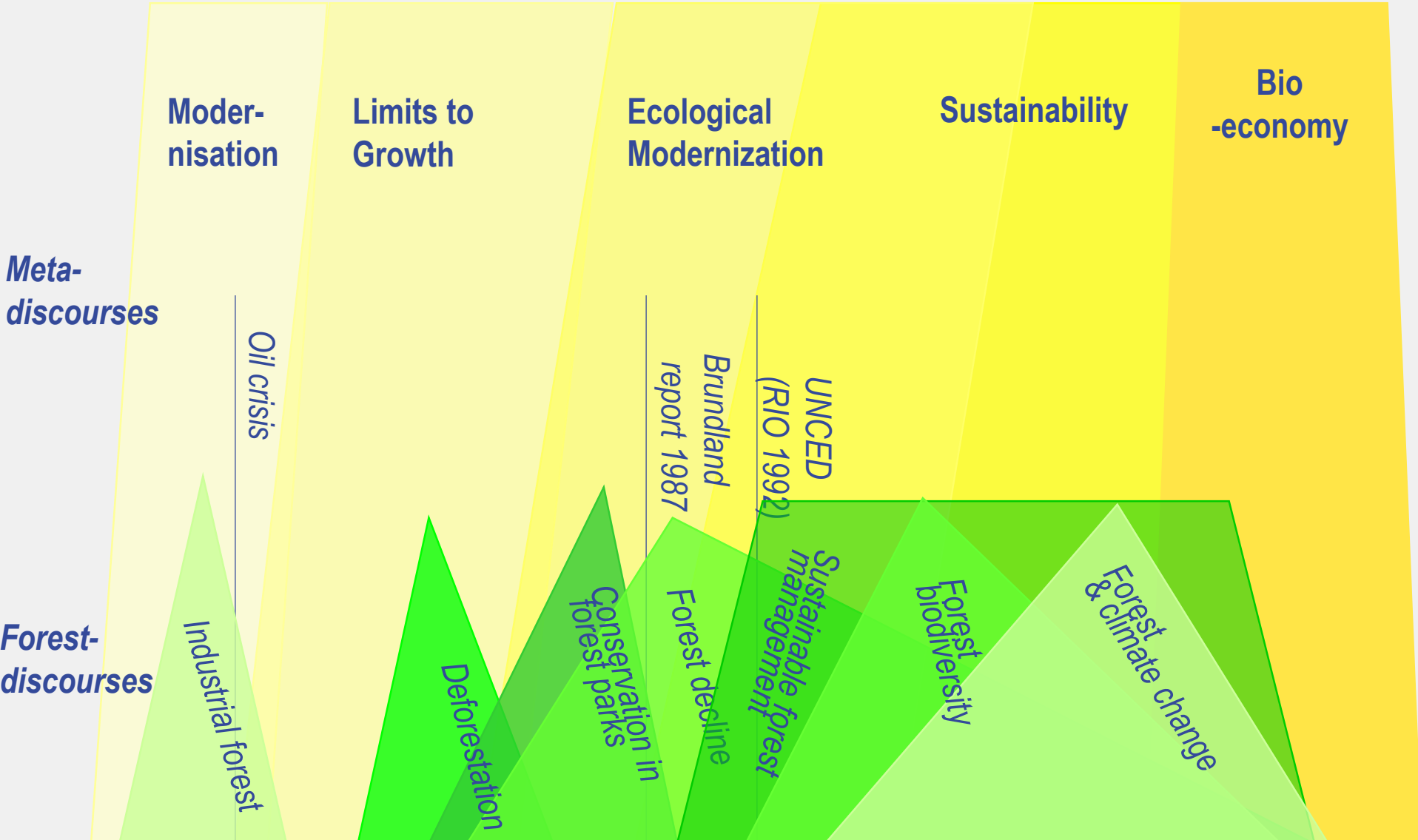


# Scientific critique of the international forest governance landscape

- Increasing complexity of the forest-finance landscape with financial interest gaining more direct control over how forests are governed internationally and depoliticizing issues
- Climate change appears as a “managerial discourse” and is prioritized against other goods and services and thus leads to a “climatization” of forest discourses
- Issues of justice, exclusion and tenure rights often accompany international goals and instruments but needs to be solved at the national level

# Learning from the past - or the challenges for 'sustainable wood'

# Global Discourse



# 2

## saving the world by construction

Hans Joachim Schellnhuber

(In: Earth et al. 2023)

# Win-win Narrative or simple solutions for (super) wicked problems?

Limits to  
growth  
discourse



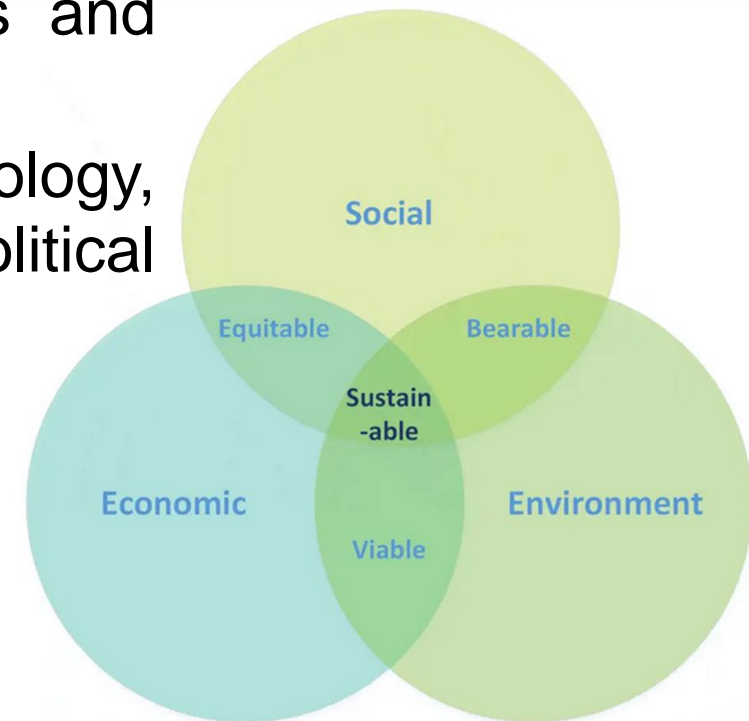
Ecological  
modernisation



Sustainability

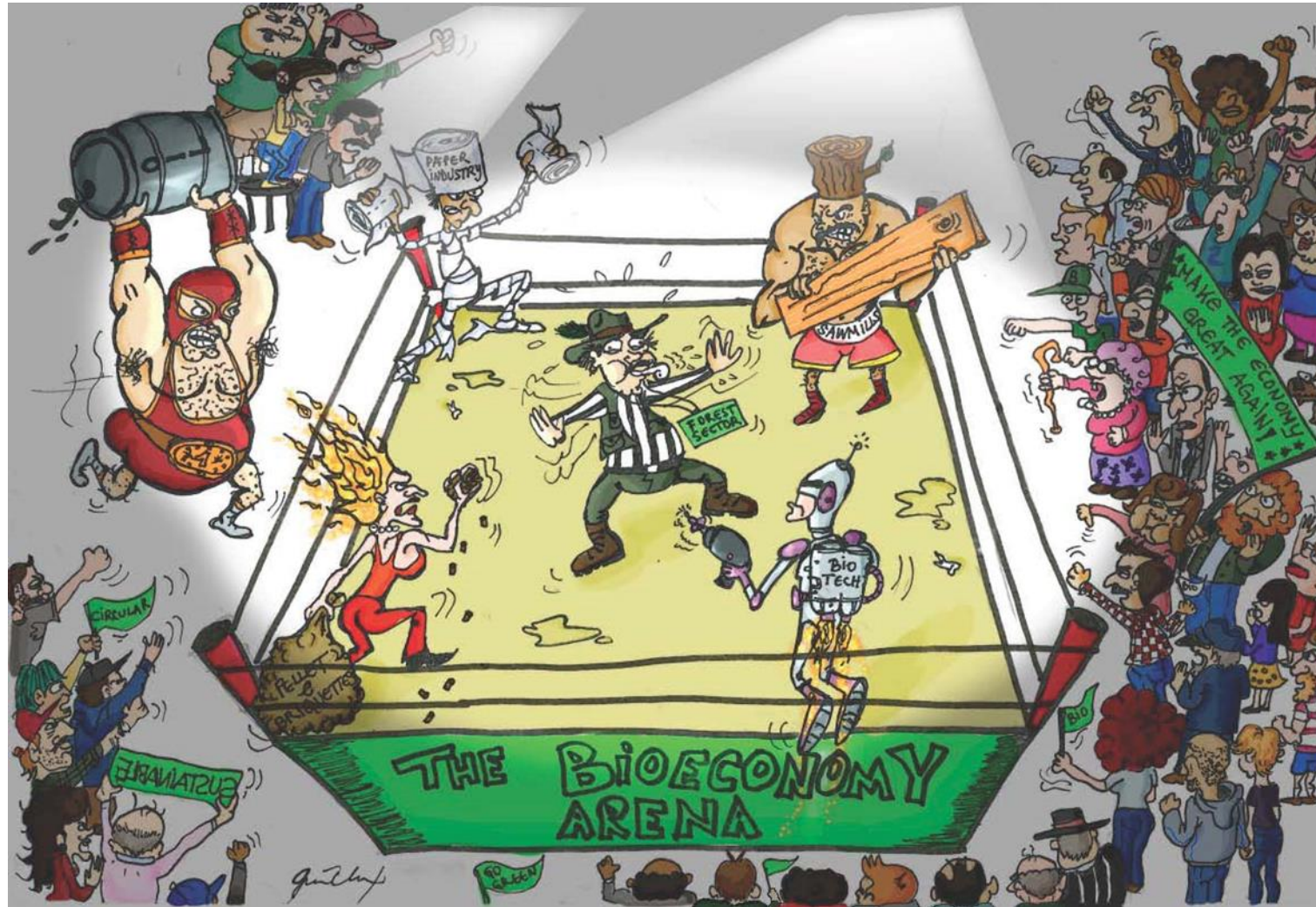
# Challenges for 'Sustainable Wood'

- Addressing all facets of sustainability, going beyond economic and climate aspects;
- Taking into account unintended effects - in particular those that might effect human wellbeing, local and vulnerable people
- Recognizing differences in defining problems, solutions and setting political priorities
- Making use of diverse forms of knowledge on ecology, technology, economy but as well on social and political challenges





# Thank your your attention!



Mode of Governance

Private

Hybrid

Public

### Production logic:

*Forest plantations and bioeconomy to meet international demands*

State facilitating business interests

Deregulation and market as solutions

Colonial (commercial) tree planting

Commercial tree planting

Private sector commitments to avoid deforestation

### Sustainability Logic:

*Planting Trees to meet international challenges*

State and markets serving society

Carbon sinks, sequestration, offsetting

Buying time for change through offsets

### Community Logic:

*Restoring or creating forests for local livelihoods and fostering empowerment*

State serving society

Tree planting as social and environmental movement for local governance and rural wellbeing

Planting local species (ecological restoration) to restore forested landscapes

Time



# Sustainable Wood Supply To Meet the Needs of the Bioeconomy: Trends and Pathways

**Ewald Rametsteiner**  
Deputy Director, NFO



**Policy Dialogue**  
Advancing sustainable wood policy  
and science for carbon-neutral and  
resilient economies

Monday, 25 March 2024  
09.30-17.00 CET

# Roundwood Needs in 2050

## Business as usual

- Consumption of primary processed wood products projected to rise by **37%** by 2050, from **2.3 billion m<sup>3</sup> RWE** in 2020 to **3.1 billion m<sup>3</sup> RWE** in 2050.

Veneer/plywood: +102%

Particle/fibreboard: +72%

Sawnwood: +30%

- Projected wood fuel consumption is expected to rise by approximately **30%**, reaching a range of **2.3 to 2.7 billion m<sup>3</sup>** by 2050.

- Pulp and paper consumption will stabilize or slightly decline.





# Roundwood Needs in 2050

## Bioeconomy

- Increased adoption of mass timber and man-made cellulose fiber (MMCF) could lead to:

Up to **6%** increase in consumption of primary processed wood products compared to BAU outlook (additional 98 to 272 million m<sup>3</sup>).

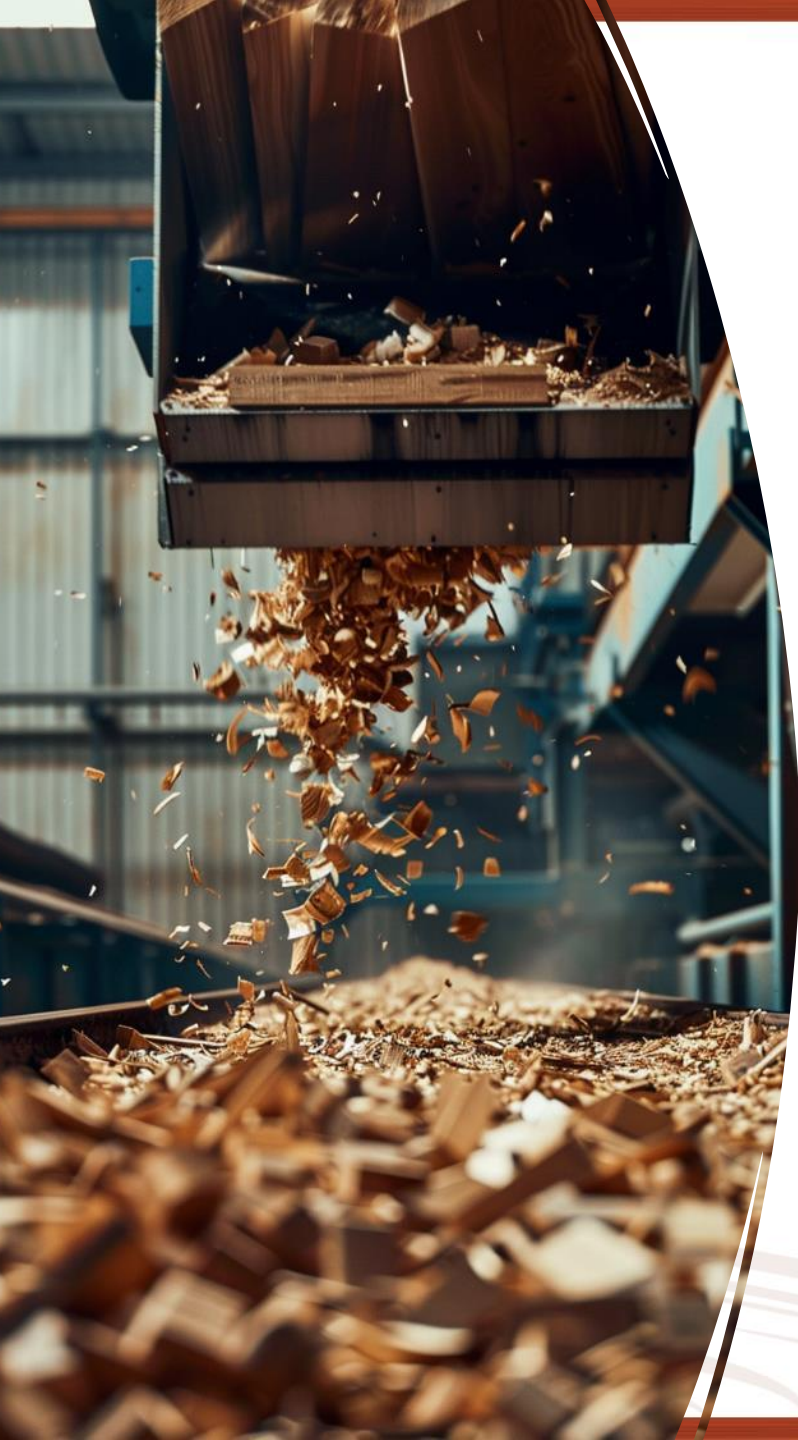
Up to **3%** increase in industrial roundwood compared to basic outlook (additional 45 to 199 million m<sup>3</sup>).



# Pathways to meet wood demand in 2050

## 1. Material efficiency and value added innovations

- Wood loss and waste along value chains
- From short-to long-lived products
- Cascading/circular use





# Pathways to meet wood in the bioeconomy demand in 2050

## 2. Restoration productivity of degraded lands (2.2 bn ha)

- Planting forests (min. **33mil** ha to meet additional demand)
- Planting trees - agroforestry/smallholder farms
- Improving productivity of planted forests
  - **7%** of the world's forests provide **50%** of roundwood
  - Trop/subtrop. productivity needs to grow from **2.7** to **7.2** m<sup>3</sup>/ha/yr to meet additional demand



# Opportunities and Challenges

- Climate solutions: low-carbon, greening cities
  - Nature-based solutions & circular bio-economies
  - UN Decade of Ecosystem Restoration
- 
- Awareness, evidence, consensus-building
  - Incentives, incl. for innovation, investments
  - Climate resilience & biodiversity safeguards







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# Thank you.

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# SUSTAINABLE WOOD POLICIES

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GARY BULL AND ERICA DIGIROLAMI

MARCH 25, 2024

FAO, ROME



# BROADEN THE SCOPE OF PRODUCTS

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- Solid wood – building materials, furniture
- Additional traditional commodities - Pulp – paper, packaging, first generation of biofuels and energy
- Bioproducts – emphasis on new product development in bio-composites, biochemicals, Next-Gen wood products.
- Bioenergy – second generation of energy and biofuels.



# OBJECTIVES

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1. Undertake a global stock-taking and review of proxies for 'sustainable wood policies' and importantly, practices, initiatives, and programs.
2. Expand the scope of the discussion for the development of sustainable wood policies, with working definitions, literature and case studies
3. Identify the critical issues preventing the full development of sustainable wood policies and some of the opportunities available to address them.



# #1 GLOBAL STOCK TAKING

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- Many **Policies, Legislation and Agreements** exist but they only indirectly hinting at sustainable wood policies
- Many **Practices, Initiative and Program** exists but are either just beginning, aimed at part of the wood supply chain, such as mass timber, or do not exist.



# #2 - WORKING DEFINITIONS, LITERATURE AND CASE STUDIES

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- **Sustainable wood policies** are those based on the premise of **sustainable forest management** as a supplier of raw material, since it can both expand the sustained use of wood into a wide array of products (solid wood, traditional commodities, bioproducts and bioenergy), and substitute for fossil fuel-based products. The aim is to encourage and support a **sustainable forest bioeconomy**.

- It may be possible with negotiations to expand the definition to include business and governance.

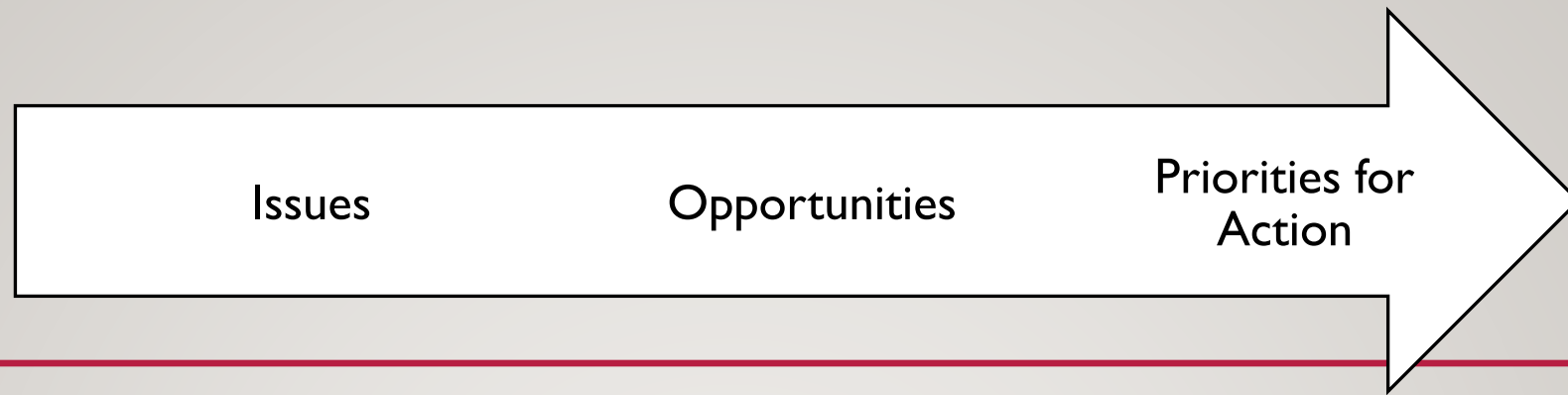
## Other Allied Definitions:

- Sustainable forest management
- Sustainable forest bioeconomy
- Sustainable production and consumption

## Literature Review:

- Helped us identify the issues and opportunities for the development of a sustainable wood policies.
- Was supplemented by an online survey to stakeholders (1 response) and follow-up targeted emails.
- Was supplemented by case studies

#3



1. Invest in monitoring and data infrastructure
2. Develop and promote sustainable wood products
3. Establish and strengthen partnerships
4. Promote certification, standards, global framework and a global wood policy platform
5. Engage in policy forums to integrate sustainable wood policy
6. Enhance education, communication and awareness



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# Advancing sustainable wood policy and science for carbon-neutral and resilient economies

Monday, 25 March 2024  
09.30-17.00 CET





# Wood for Globe

**Towards a Global Wood Policy Platform:  
Sustainable Wood for a Carbon-neutral  
Bioeconomy**

Janice Burns, IUFRO

Thaís Linhares-Juvenal, FAO

Monday, 25 March 2024  
09.30-17.00 CET







# WOOD FOR GLOBE

## Objectives

- Facilitate creation of policy networks and platforms
- Leverage knowledge exchange and good practices
- Promote scientific evidence dissemination and uptake



# Towards a Global Wood Policy Platform for a Carbon-Neutral Bioeconomy

Activities	Outputs
Stocktaking of policies and initiatives globally	<ul style="list-style-type: none"><li>• Global sustainable wood policy review</li><li>• Audience and media consumption analysis</li></ul>
Mobilizing expertise of policy makers and scientists	<ul style="list-style-type: none"><li>• Syntheses of latest scientific innovations</li><li>• Raising awareness aligned with SW4SW</li><li>• Fostering interaction with society</li></ul>
Exchanging knowledge, experience and good practice	<ul style="list-style-type: none"><li>• Global and Regional Policy Dialogues</li><li>• Stakeholder consultations on sustainable forest-based bioeconomy</li></ul>





# Why Sustainable Wood Policies?



- **Decarbonizing Material Use.** Helps carbon sequestration, reducing emissions.
- **UN SDGs Alignment.** Addresses clean energy, climate action, and life on land goals.
- **Forest Health & Livelihoods.** Supports healthy forests, creates job opportunities, and conserves biodiversity.
- **Innovation & Collaboration.** Encourages innovation and requires collaborative stakeholder efforts.



# Main Findings: Innovations for scaling up sustainable wood use

- Scaling up **production capacity for regionally sourced** materials
- Creating **new products** from underused residues such as bark, saw dust or pinecones to optimise material use
- Embracing methods like **prefabricated mass timber construction**, bamboo utilisation or **reclaimed wood**
- Adopting sustainable practices in production of **packaging and textiles**, e.g. shifting from viscose to lyocell
- **Integrated resource policy** optimising provision of ecosystem services and goods including wood



# Main Findings: Policy review

## 1. Lack of Consensus Definition for Sustainable Wood Policy:

1. The absence of a universally agreed definition leads to inconsistent practices and hampers progress in sustainable forestry.

## 2. Inadequate Data Sharing:

1. The lack of a systematic framework for collecting and sharing wood-related data impedes informed decision-making and policy development.

## 3. Absence of Direct Linkages to Sustainable Forest Management:

1. Sustainable wood policies often fail to directly align with sustainable forest management practices, posing challenges to long-term wood resource sustainability.

## 4. Need to Improve Linkages to Financial Services:

1. Enhanced connections with the financial services, pension funds, and insurance industries are essential, as they manage significant institutional investments.





# Main Findings: Policy review

## 5. Lack of Integration with Forest Bioeconomy:

1. The absence of direct connections between sustainable wood policies and the forest bioeconomy can hinder efforts to optimize forest resource value and minimize waste.

## 6. Need for Improved Climate Change Linkages:

1. Sustainable wood policies require better integration with climate change discussions and greenhouse gas reporting frameworks to acknowledge forests' crucial role in carbon sequestration. Emphasizing responsible wood utilization can unlock forests' carbon-storing potential, essential for achieving a carbon-neutral bioeconomy.

## 7. Need for Ongoing Efforts to Communicate the Merits of Wood Products:

1. Despite years of effort, significant doubts persist within civil society regarding the sustainability of tree harvesting and its contributions to society through various products and services.



# Main Findings: Forest-based bioeconomy policies and networks in Latin America and the Caribbean (LAC) region

Four key features shaping bioeconomy development in the region:

1. Fragmented Participation:
2. Emerging Avenues:
3. Divergent Focal Areas
4. Tensions Between Industrial and Socio-bioeconomy Approaches





# Main Findings: Forest-based bioeconomy policies and networks in Latin America and the Caribbean (LAC) region

Strengthening bioeconomy networks and policies in the LAC region can be achieved by:

1. Emphasizing subnational/local policies
2. Integrating technological advancements with nature conservation
3. Harmonizing with other sustainability frameworks
4. Enhancing data-driven decision-making
5. Safeguarding community interests



# Main Findings: Audience and media consumption analysis

1. **Median age of public** shows noticeable differences, with Africa in the 20s, Asia in the 30s and the EU in the 40s. These translate to different habits in media consumption and general outlook.
2. **Media consumption** is primarily conducted via mobile devices, with a predominance of video content.
3. There is generally **greater optimism towards environmental and economic issues** and prospects in African and Latin America than in the rest of the world.
4. **WhatsApp** emerges as the most popular communication platform, especially across African regions.



# Upcoming activities

1. Regional stakeholder consultations
2. Ministerial event on the margins of COFO 27: Sustainable Wood Call for Action
3. COP29 : Policy and science exchange networks and platforms to support scaling up contributions of sustainable wood to the bioeconomy



# Next Steps

Keep updated by visiting the Wood for Globe webpage and following **#WoodForGlobe** and **#SW4SW** on social channels

<https://www.iufro.org/science/partnership-projects/wood-for-globe/>





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**Thank you.**





# Advancing sustainable wood: Opportunities, gaps, synergies, and trade-offs

*Supplying sustainable wood to meet the needs of the bioeconomy*

Sheam SATKURU  
ITTO Executive Director

Monday, 25 March 2024  
09.30-17.00 CET



# ITTO's mission – DUAL mandate



- Promote the **sustainable management and conservation** of tropical forests.
- Promote the **expansion and diversification of trade** in tropical wood from sustainably managed and legally harvested forests.

The **International Tropical Timber Organization (ITTO)** is **THE SOLE** inter-governmental organization focused entirely on tropical forest resources.

- 76 members (37 producers & 39 consumers) covering **80% of global tropical forests** and accounting for **90% of trade in tropical forest products!**



# SFM of tropical forests—crucial for carbon neutrality

- **Tropical forests** - a major source of building materials, food, energy and livelihoods - still crucial for economies & populations in the tropics.
- **Wood** - environmentally friendly and carbon neutral material, **PROVIDED:**
  - **HARVESTED FROM LEGAL & SUSTAINABLE SOURCES**, adhere responsible production.
- Developing sustainable wood-based supply chains in the tropics to achieve carbon neutrality presents challenges and opportunities. **POTENTIAL SOLUTIONS** include:
  - ADOPT SFM practices - balance ENVIRONMENTAL & SOCIO-ECONOMIC needs.
  - Energy/construction needs - forest plantations in degraded/vacant lands.
  - Production of wood pellets/use of wood waste for electricity and heat in power plants and homes.
  - Energy generation from logging residues and wood processing waste.
  - Improve energy security and reduce GHG gas emissions.
  - Promote use of sustainably produced tropical wood in construction.
- Contribute to **SDGs 7, 8, 9, 11, 12, 13, 15, 17** and several others!





# SYNERGIES - ITTO's work on sustainable wood use



Furniture production in Indonesia for domestic market. Photo: Kharizandi



## POLICY BRIEF

Encouraging greater domestic use of legal and sustainable tropical wood

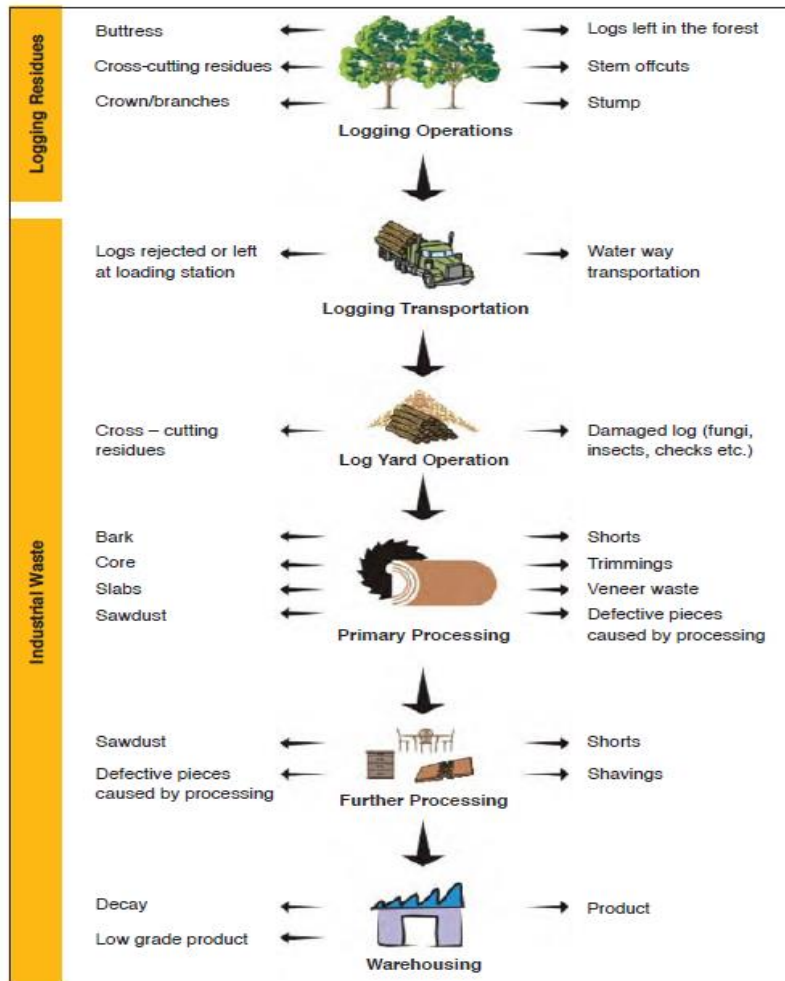
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Lessons from experiences in Southeast Asia

- **Promote sustainable wood use, encourage synergies across its members:**
  - Promoting domestic markets through projects (supported by Japan) in Southeast Asia: Indonesia, Thailand, and Viet Nam. India and Malaysia (about to start).
- **The projects on capacity building aims to improve:**
  - Domestic strategy/policy.
  - Production capacity.
  - Community forest enterprises' skills.
  - Assortment of wood products.
  - Educate consumers/raise awareness on the advantages of using wood products vs other substitutes.
- **Projects' outputs:**
  - Strengthen sustainable wood value and supply chains.
  - Enhance social, economic and environmental benefits from production to consumption.
  - **Support SW4SW initiative! More such projects needed!**



# Opportunities (selected examples): bioenergy



- Substantial volumes of wood residues in timber industry operations in the tropics (around 50%), could be used to generate energy:
  - In Brazil, for example, logging residues amount to 600 million tonnes/year.
  - Could generate 36 000 megawatts of electricity.
  - Equivalent of three large hydropower stations.
- Wood-based bioenergy (wood and woodchips) have an advantage over agriculture-based bioenergy (biofuels, biogas) in terms of CO<sub>2</sub> mitigation performance.

**Several ITTO members doing so!**

\*Source: ITTO. 2007. *Report of the International Conference on Wood-Based Bioenergy*. Hannover, Germany, 17-19 May, 2007. ITTO Technical Series No.31. Yokohama, Japan.





# Opportunities (selected examples): wood in construction

## Wooden Cities for a Sustainable Future:

Aims to promote sustainable wood use through increasing wooden building/housing construction in urban areas in selected economies in the Asia-Pacific region.

- **Output 1: “Development of wooden city strategy and policy”** - promote domestic consumption of sustainable wood in urban areas through construction of wooden buildings/houses.
- **Output 2: “Sustainable production and consumption of wood”—strengthen capacity to produce & consume legally and sustainably wood** to stimulate domestic market demands and needs.
- **Output 3: “Public-Private Partnership for wooden city development”—increase partnerships/incentives among selected city governments and leading wooden building companies in the region to advance skills and technology** on wooden building/house design and construction.



# Sustainable wood use contributes to climate-change mitigation



- Implementing SFM practices across wood supply chains can **lower emissions by improved timber harvesting and processing.**
- **SFM=improved carbon sequestration.**
- Wood products=a significant **carbon sink** and the most environmentally friendly material.
- Using **wood in construction reduces the carbon footprint** of buildings/houses in comparison to other materials.
- WOOD offers great potential to **transform the construction industry's GHG emissions** - economies progression on NDC commitments.
- Support ITTO members achieving **decarbonized societies.**



 **the future made from wood!**







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# Work with us!

***11-12 September 2024, Global  
Legal and Sustainable Timber  
Forum, Macao SAR, China***

***1-6 December 2024, ITTC 60***



# Advancing sustainable wood: What place for wood in the context of the circular bioeconomy ?

Vincent Gitz, CIFOR-ICRAF  
Director of Program and Platforms  
Director of Latin America

Policy Dialogue on Advancing sustainable wood policy and science for carbon-neutral and resilient economies

Monday, 25 March 2024, FAO

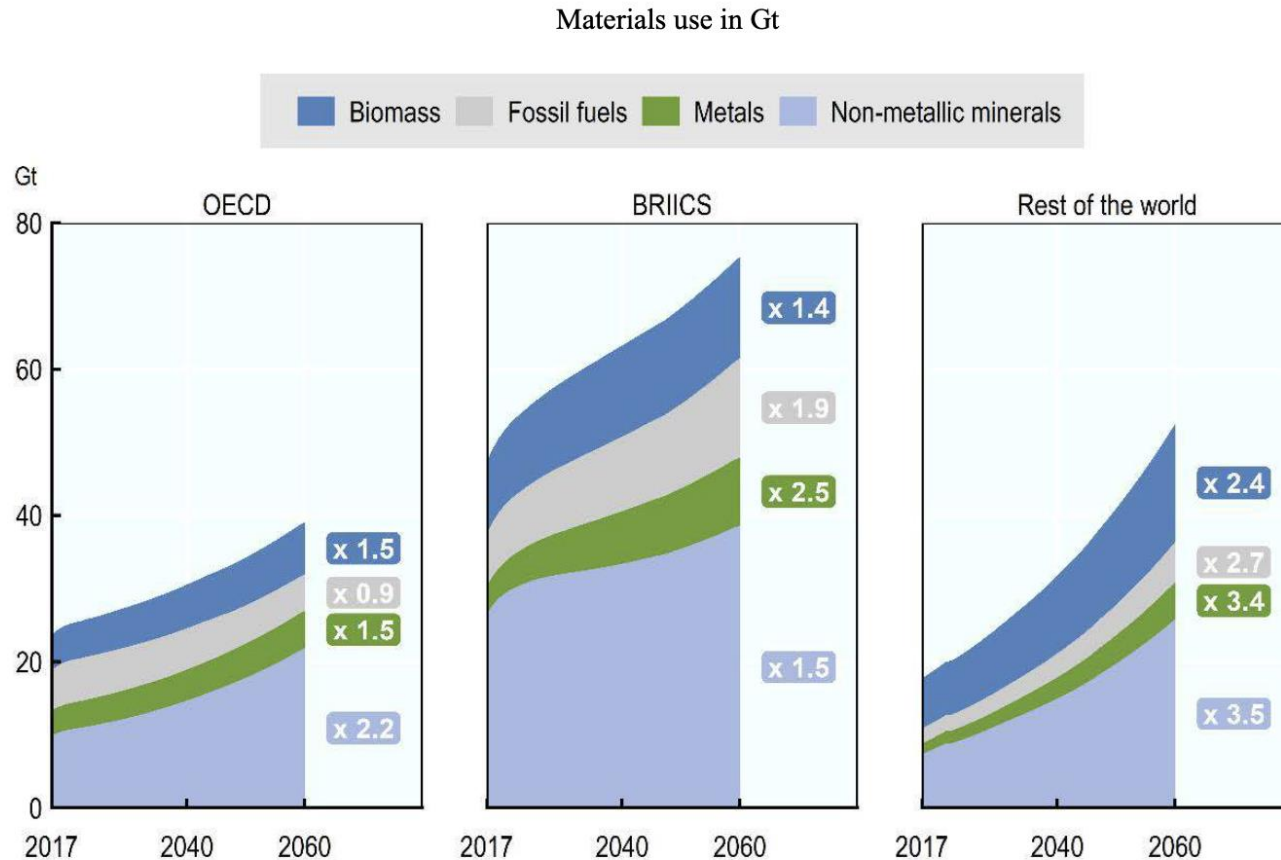
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# An increased demand for materials ...

Figure 1.4. Growth in materials use is projected for all regions

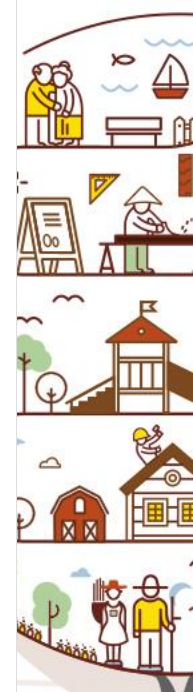
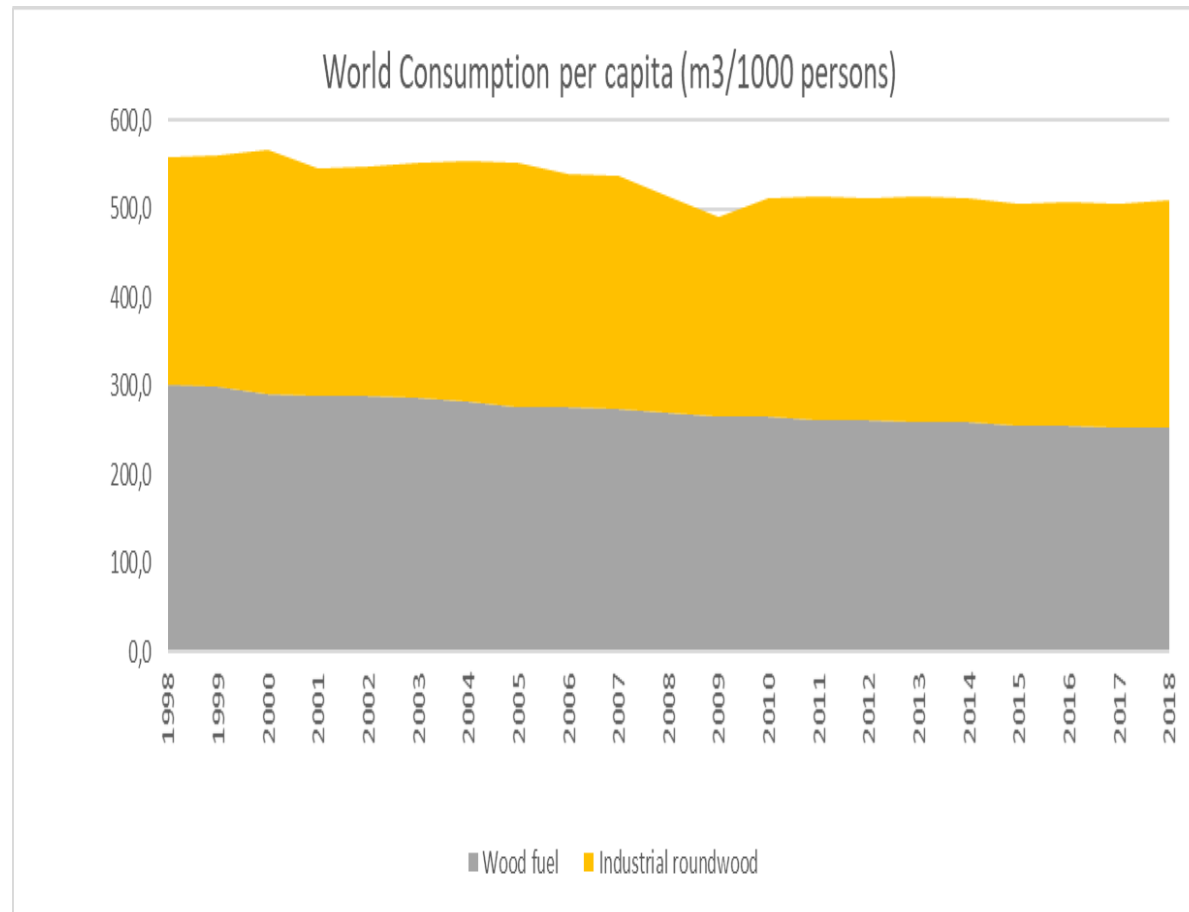
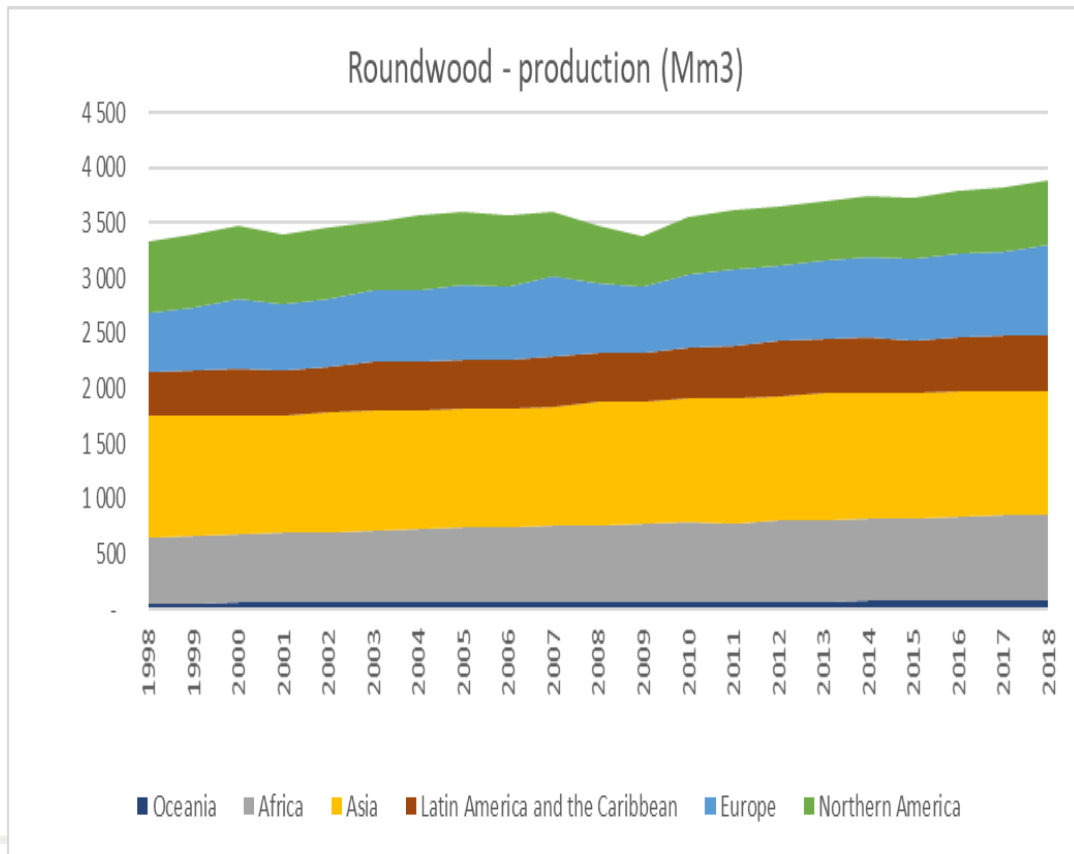


According to the OECD, global materials use would rise from 89 Gt in 2017 to 167 Gt in 2060. for biomass (including food and feed) it will grow from 22 to 37 Gt, with a bigger increase for wood than for other biomass (OECD 2019)

Source: OECD ENV-Linkages model.

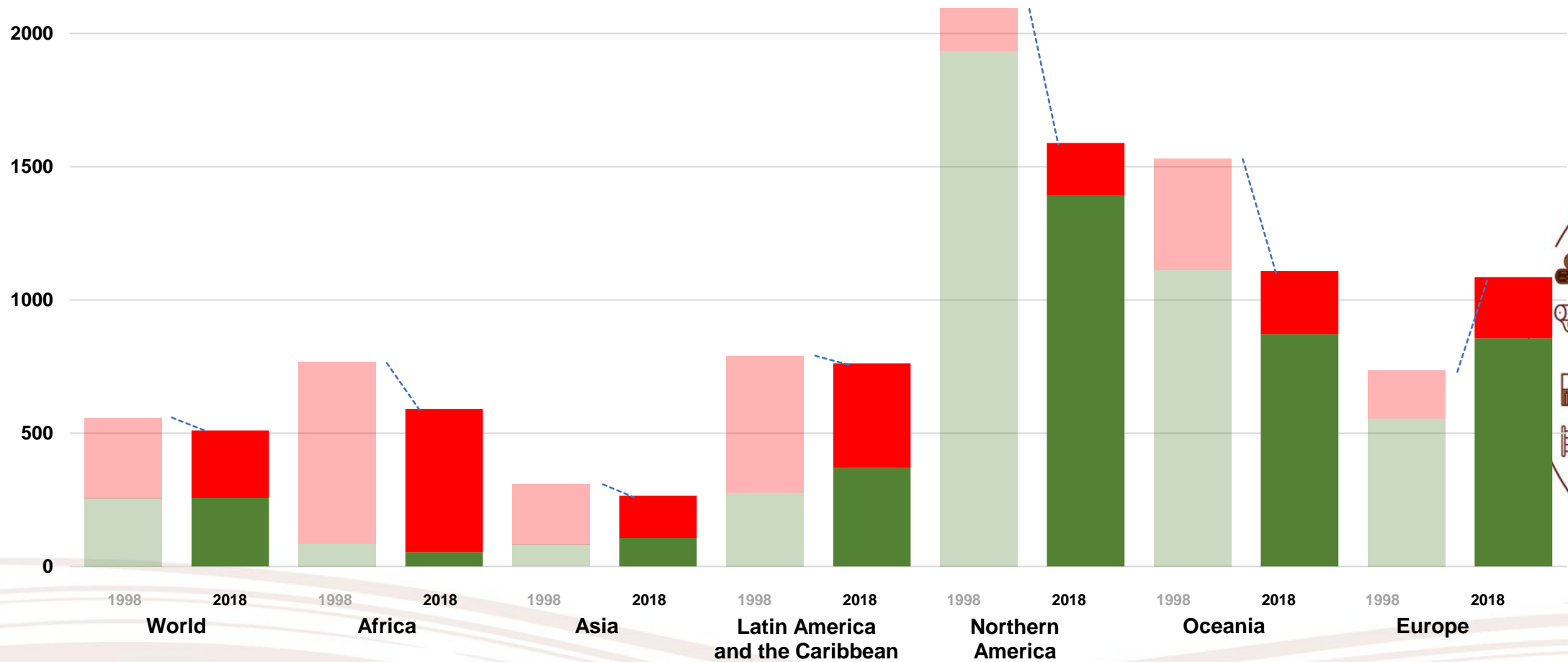


# ... but a “wood paradox” ?



# Wood consumption per capita: 1998 vs 2018

Consumption per capita (m<sup>3</sup>/persons)



Source: FAOStat



# Which entry points for more wood within the bioeconomy ?

## Stimulate demand

**Conventional uses of wood**

**Modern and emerging uses of wood**

**NTFPs and co-product as levers**

## Address production constraints and sustainability together

### Develop raw production sustainably

- Growth of planted forests,
- Better use of natural, secondary, and degraded forests
- Land restoration
- Trees on farms
- “Reservoir” of wood currently used as wood-fuel.

### Innovation WOOD ++

- “upgrade” the use of raw material,
- diversify intermediary and final products / uses
- valorize by-products as a lever for wood

### Cascading uses (R/R/R)

What does that mean for a range of policies and public and private actors?  
forest policy, wood policy, ag policies, technologies, land and investment policies



# Key action areas to grow the bioeconomy and sustainable wood together

1

Develop **technologies for more substitution** options of materials  
**Prioritize and hierarchise uses**

2

Move from **a linear to a circular model**  
**Think together** wood and non-wood products and co-products

3

**Structure** wood and NTFPs value chains and logistics  
Technologies to be locally adapted, equitable, inclusive

4

Leverage **short term available wood production** potentials  
Build a strong **planted forests agenda**

5

Boost the **enabling environment and policies**  
and **research and innovation**





# 1

# New uses and demand through increasing substitution options : engineered wood products

Glulam and CLT can substitute steel and concrete. CLT can be used in many construction applications, including floors, walls and roofs. It can substitute several GHG-intensive construction materials, such as reinforced concrete, steel and masonry.

## Glued Laminated Timber (Glulam)



## Cross-Laminated Timber (CLT)



Dataholz.eu



# 1

## Increasing substitution options: fibers and regenerated celulosic fibers for textiles

Wood pulp has been used for more than a century to manufacture **viscose** for the textile industry. Viscose, acetate and lyocell are the three major types of regenerated cellulose fibre, from wood pulp and other cellulose products or residues. The proportion of viscose in clothing and textiles produced by leading brands varies between 10 percent and 14 percent in Europe (Statista, 2020), which indicates that synthetics and cotton still account for a large market share.

With a bio-geophysical limit to global cotton production – currently, production stands at about 25 million tonnes per year (OECD and FAO, 2020) – as well as consumer-driven demand for natural and environmentally friendly fibres, the production output of wood-based fibre is set to rise rapidly.

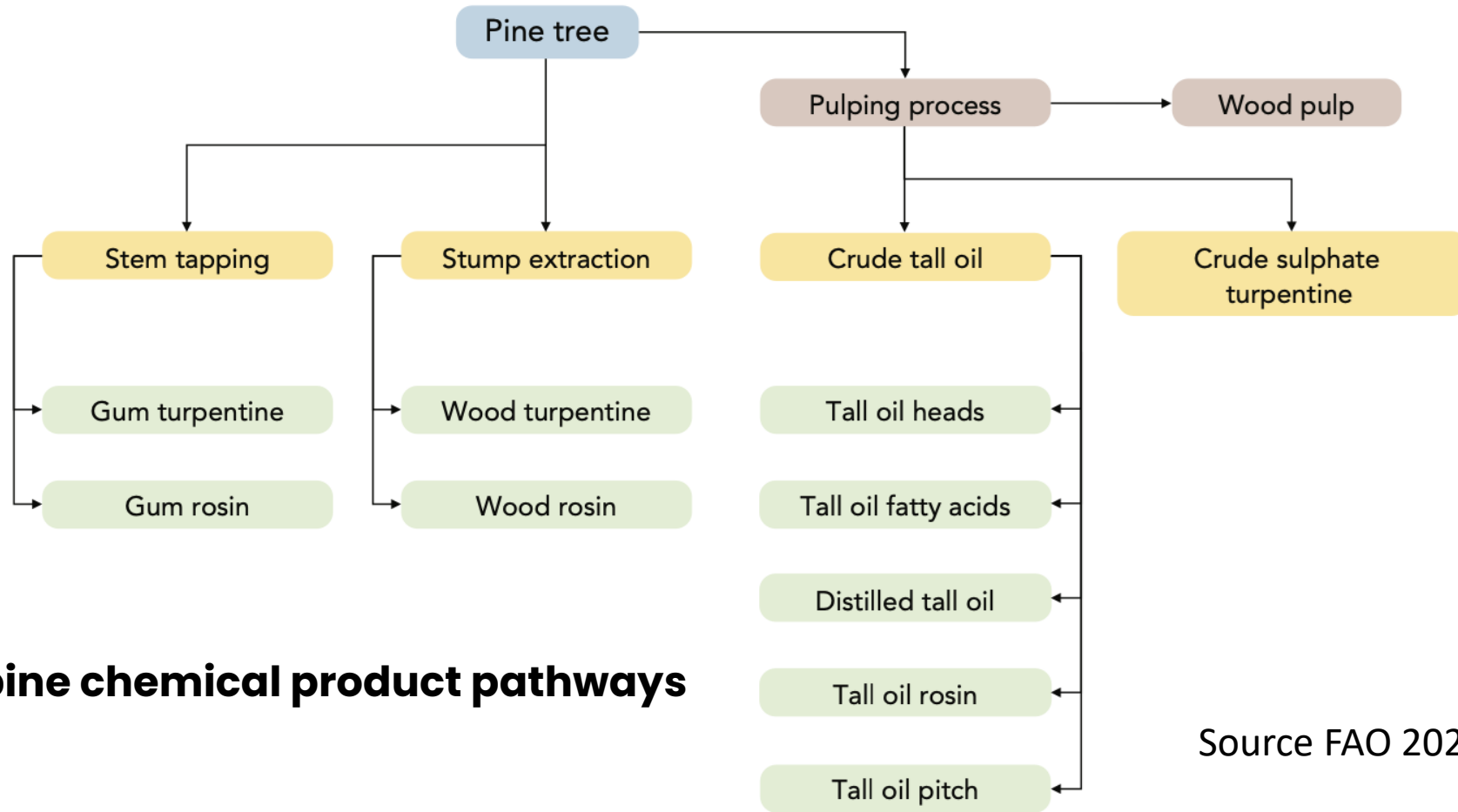
### **Use of recovered fibre in manufacturing**

The market share of recycled celulosic fibres is still very small, representing less than 1 percent of all man-made celulosic fibres in 2019 (Textile Exchange, 2020), but several companies are investing in technologies. (source FAO 2022)



# 1

## Increasing substitution options Resins, a critical NWFP



**Simplified pine chemical product pathways**

Source FAO 2022





# 1

# Increase substitution options for plastics

## Flexible Packaging

*(versatile packaging)*



- Food & beverage
- Personal care
- Pharmaceutical industries
- Cosmetics
- Single-serve meals

## Rigid Packaging

*(for heavy and strong packaging)*



## Consumer Goods



## Agriculture & Horticulture



Mulch & greenhouse film

## Coatings & Adhesives



Compostable plastic coating

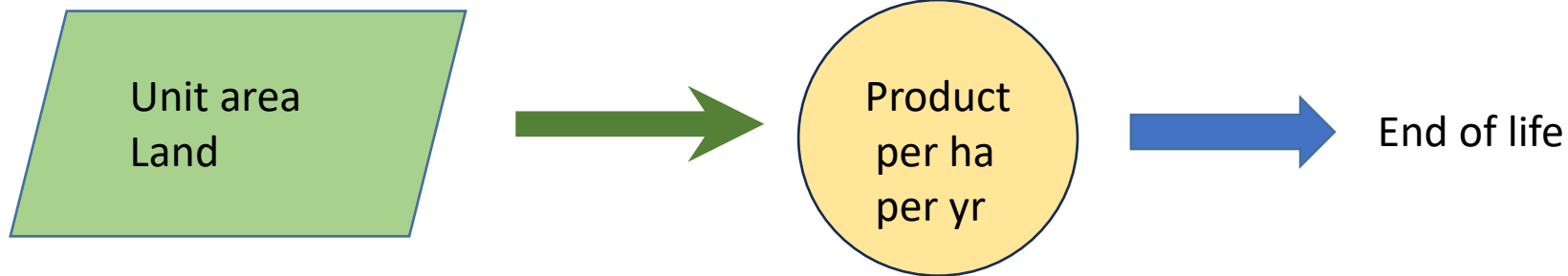




# 2

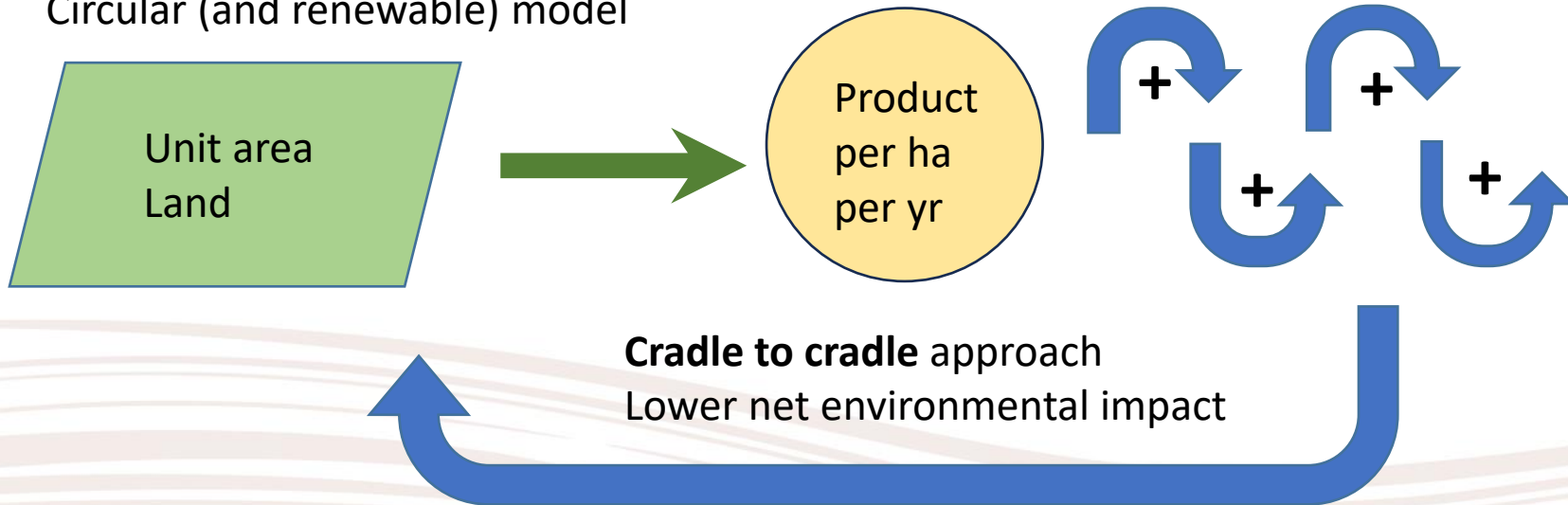
## Shift from a linear model to a circular model for wood

Linear (renewable) model



Linear added value: material, carbon stored, jobs..  
Limited by production / ha

Circular (and renewable) model



Per ha of forest:

- More added value,
- More jobs in the value chains
- More and diverse uses and material over time per ha
- Longer C substitution effect in (several) products



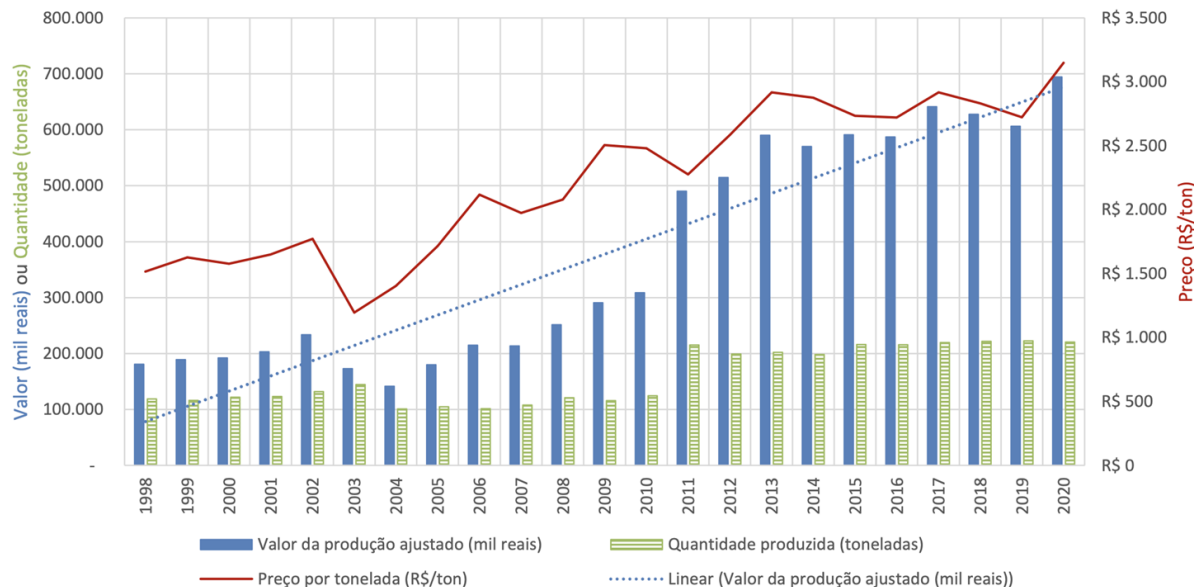
# 2

## Diversify and think wood and NTFPs together



Photo: CIFOR

FIGURA 2 - Série histórica de 1998 a 2020, referente a quantidade produzida, valor de produção (ajustado) e preço (ajustado), por tonelada, do fruto de açaí



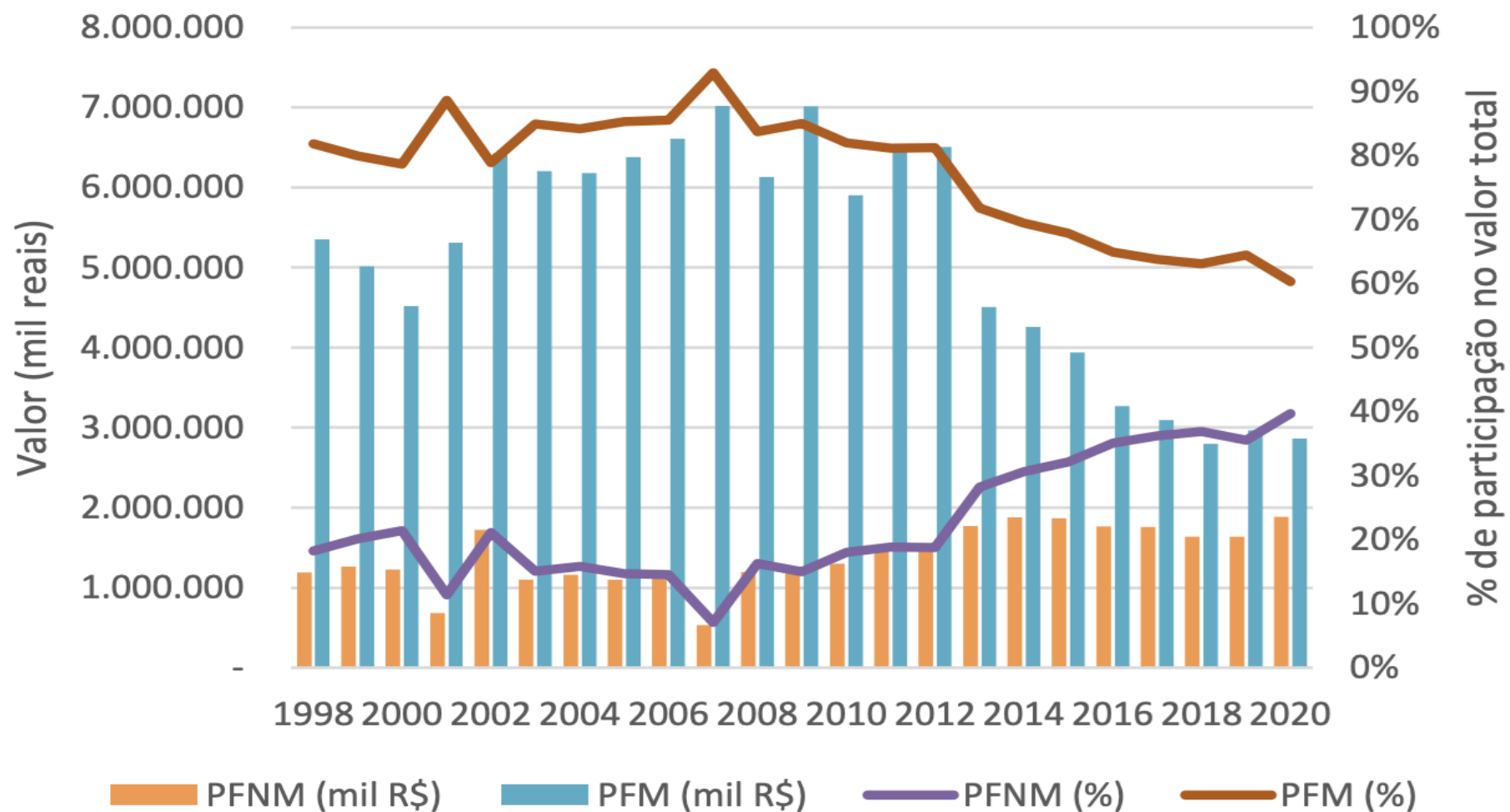
Fonte: PEVS 2020 / IBGE (2021)



SFB, 2022



**FIGURA 34** - Série de valor da produção (ajustado) de produtos madeireiros (PFM) e não madeireiros (PFNM), em mil reais, e percentual de participação no valor total de produção



Fonte: PEVS 2020 / IBGE (2021)

SFB, 2022





# 3 Structure value chains and capacitate actors

- Match wood products to uses
- Technologies and supply chains adapted to local species
- Integrate the possibility for reuse and recycling
  - in product design
  - in supply chain design
- Develop sustainable business models
- Logistics
- Capacity building



Source: Sonar





# 4

## More resources : tap on-farm potential

Trees on farms: ex. Bolaina in Peru



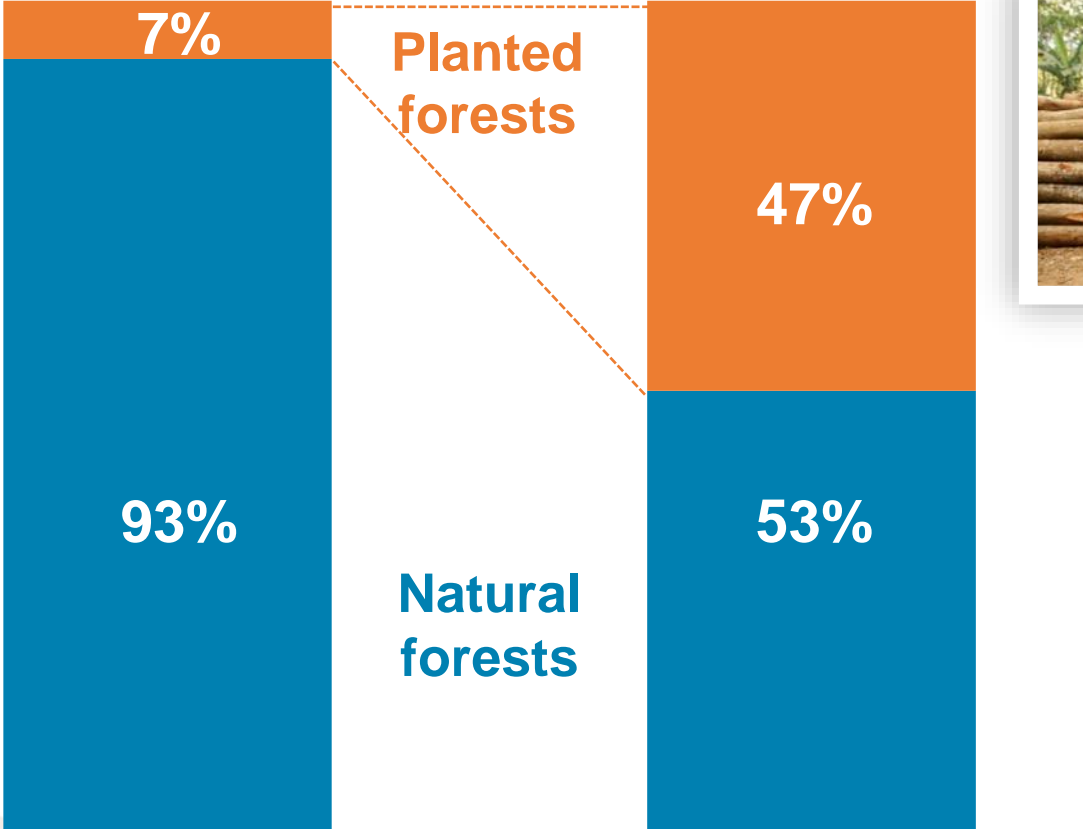
Agroforestry systems





# 4

## Develop planted forests



Area

Roundwood production

Source: FAOStat



Teak plantation, Jepara, Indonesia



(photos Murdani Usman/CIFOR)



# Develop planted forests

**Spatial** : optimized insertion in the landscape, restoration and use of degraded lands

**Improved TGR** : right tree, right purpose, productivity.

**Management efficiency** : inputs, short rotations.

**Risk management** : pests, weather, fires.

**Centered on local actors**  
as producers, but also as transformers





# 5

## Enabling environment for a forest-based bioeconomy

- 1. Land and land-use policies** for the development of production.
  - Forest information service/systems
  - Land zoning, including legal land cover classes
- 2. Attract financial fluxes** in the forest and wood sector, and for innovations and downstream value chains. (different instruments)
3. Promote and **support emerging markets**: communication (SW4SW), public procurement, certification and standards, incentives, waste disposal taxes.
4. Support the **organization of value chains, logistics, recycling**.
5. Support the **creation of “bioeconomy” clusters** for technological innovation, business incubation, R&D, value chain development: : Amazon 4.0, Finish bioeconomy cluster, poles d'excellence..





# More wood for the bioeconomy: What about the role of the CPF?

- **Knowledge-intensive agenda** : key role for research and innovation, including value chain organization, social and institutional.
- **Effective science-policy linkages**: for the design of effective and adapted public policies and instruments.
- **Regional and international collaboration**: regional dialogues, case studies, exchange of experiences, technology transfer...





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and Water Management

**Thank you.**



# Advancing Sustainable Wood Policy and Science for Carbon-neutral and Resilient Economies

Presenter :

Dr. Daniel M. M'Mailutha (PhD)

Chief Executive Officer

Kenya National Farmers' Federation (KENAFF)

Monday, 25 March 2024  
09.30-17.00 CET





# About KENAFF

- ❖ apex umbrella farmers organization in Kenya (founded: 1946; membership: 1,237,000; not-for-profit, non-political & membership-based)
- ❖ core mandate: lobby and advocacy (**The Farmers' Voice/ *Sauti ya Mkulima***)
  - represent; articulate, promote and protect the interests of Kenyan farmers

## Through:

- lobby, advocacy & policy action;
- capacity building for enhanced farmers' agency in policymaking & the market
- knowledge sharing & information dissemination; and
- Bulk procurement of products and services



# The KENAFF Experience

- a) increasing interest in the wood and tree-based value chains in Kenya
- b) growing of the Kenya Forestry Growers Association (KEFGA) & the Farm Forestry Smallholder Producers Association of Kenya (FFSPAK)
- c) heightened interest to diversify value chains also because of climate change
- d) KENAFF Farm Forestry, Afforestation and Biodiversity Conservation Programme (2021—2030)
- e) KENAFF Young and Women Council: in the lead for farm forestry
- f) partnership agreements: ministry of Environment, Forestry & Climate Change; Kenya Forestry Research Institute (KeFRI); Kenya Forestry Service (KFS); ICRAF/CIFOR and Egerton University
- g) farm forestry and forestry projects and engagements with the Forest and Farm Facility of the FAO; International Climate Initiative (IKI); Potsdam Climate Institute (PIK); and Andreas Hermes Akademie (AHA)



# Importance of Sustainable Wood Value Chains

- a) contributes 3.6 % to the country's GDP
- b) sustainable wood value chains contribute to environmental stewardship
- c) employment and wealth-creation opportunities (approximately 1 million—directly & indirectly)
- d) supports livelihoods and fosters socio-economic development in rural Kenya
- e) mitigates risks associated with resource depletion, environmental degradation, and market volatility
- f) contributes to adaptation and resilience-building in the climate change context





# Opportunities

- Regreening Kenya Initiative
- Kenyan president's Agenda for 15 billion trees planted, 2022—2032
- increasing demand for wood products in Kenya
- increasing global demand for green building materials and sustainably sourced wood products
- deficit of approximately 10.3 million cubic metres of wood annually; projected to increase to 34.4 million cubic meters by 2030
- advances in technologies, innovations and management practises for sustainable forestry



# Challenges

- a) legal, regulatory and bureaucratic impediments limiting optimal market participation by smallholder farm forestry producers/FFPOs
- b) sub-optimal access to finance and credit for smallholder farm forestry producers
- c) poorly developed/structured FFPOs
- d) Slow uptake of the tree value chain by smallholder farmers in Kenya







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**Thank you.**

