10 YEARS OF FTA RESEARCH FOR PEOPLE AND THE PLANET

Biomass, Bioenergy and Biomaterials: Engine for sustainable Development

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On behalf of the team for Volume 8, Robin R. Sears, Himlal Baral, Michael Brady....
Approaches to a wood- and forest-based circular bioeconomy

**Production**
- Restoration of forests and trees on degraded landscapes
- Improving the sustainability of productive plantations
- Smallholder farms and agroforestry
- Sustainable forest management

**Use**
- Bioenergy
  - Fuel wood
  - Charcoal
  - Pellets
  - Briquettes
  - Improved traditional wood fuels
  - Efficient combustion technologies
  - Seed oils
- Biomaterial
  - Traditional timber and fiber
  - Engineered products
  - Bamboo
  - Rattan

**Trade**
- Value addition
- Capacity development for empowerment, gender equity
- Market access, fairness, accountability
- Supportive policies
Benefits and impact of sustainable approaches

Global
• Contributes to increasing forest cover
• Restoration of degraded lands
• Reduction of GHG emissions
• Contributes to the circular economy
• Reduces dependence on hi-carbon materials
• Reduces GHG emissions

National
• Improve rural livelihood and food security
• Contribute to meeting national targets (NDCs, SDGs)
• Reduces dependency on fossil fuels
• Decrease demand pressure

Local
• Industrial plantations offer rural employment
• On-farm production provides self-sufficiency and income opportunity
• Contributes to food and nutritional security
• Produced locally yields self-sufficiency
• Simple technology makes it accessible

Cross all levels
• Poverty levels decrease
• Women’s empowerment
• Stimulate innovation, entrepreneur engagement, investment
FTA future: shifting towards a wood-based circular bioeconomy

An emergent quality of systems-level perspectives relates the contribution of forests, trees and wood-based products and value chains to the circular bioeconomy

Two-pronged approach required to reverse trends in deforestation and forest degradation:

- first, truly achieving sustainability in production and use to alleviate pressures on natural ecosystems,
- second, integrating value-adding innovations in forest activities to improve the livelihoods of rural producers

Measures

- Invests in building natural capital and human capacity for sustainability
- Economic and business models must shift from an extractive to a regenerative relationship with nature, which will require massive investments that are holistic, inclusive and well-distributed along the whole value chain
- Shifting the attention from production to the demand side was indicated for a basis to develop systemic dematerialization measures
- Social equity must be at the core of a shift
- the need to resolve persistent underlying problems in the social dimensions of the wood sector, especially in forest-related policy, land and resource tenure, and value chains
- the wood-based bioenergy and biomaterials agendas (wood-based circular bioeconomy) must be aligned with the forest landscape restoration agenda
Conclusions/Key messages

• Research must continue to **identify sustainable pathways** for the development of green economies that meet increasing energy and consumption needs while promoting sustainable and equitable access to energy through renewable energy sources based on biomass.

• Especially to identify **pathways for reducing the ecological footprint of growing biomass** for bioenergy and biomaterials and increasing the financial contribution to producers.

• Focus on developing and strengthening the forest- and wood-based circular bioeconomy through the **Transformative Partnership Platform (TPP)**.