



# Harnessing the Potential of Private Sector Engagement in Productive Forests for Green Growth

Policy Brief



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1818 H Street NW  
Washington DC 20433  
Telephone: 202-473-1000  
Internet: [www.worldbank.org](http://www.worldbank.org)

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The report has been written by a team from UNIQUE and Climate Focus, including Timm Tennigkeit, Charlotte Streck, Duncan Gromko, Franziska Haupt, Christian Held, Eva Meier, and Till Pistorius.

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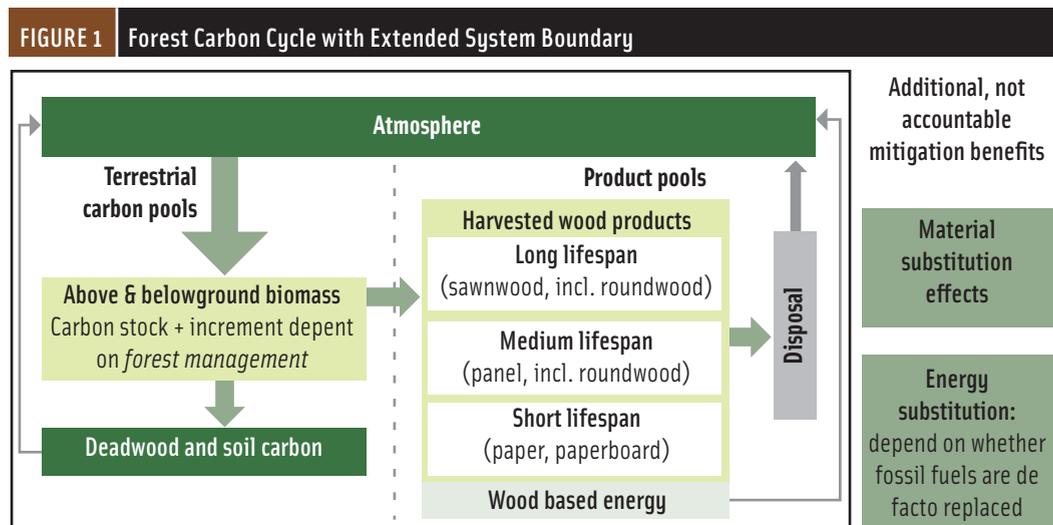
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# 1. Introduction

The forest sector has great potential for contributing to inclusive green growth, as it is labor intensive, provides significant export opportunities, and, if managed sustainably, can help to mitigate climate change.<sup>1</sup> Promoting harvested wood products (HWP) (such as wood for construction or furniture, or biomass for energy) is an important strategy for maximizing the economic, social, and environmental potential of the forest sector.

When trees are harvested and turned into HWP, the woody biomass of the HWP continues to store carbon until the product is burned or decomposes. Depending on the use of the



Source: Adapted from T. Pistorius, Untersuchungen zur Rolle de Waldes und der Forstwirtschaft im Kohlenstoffhau, shalt des Landes Baden-Württemberg, Berichte Freiburger Forstliche Forschung, Heft 73, FVA, Bade-Württemberg, 2007.w

<sup>1</sup> Green growth increases economic output and creates jobs through the sustainable use of natural resources, generating environmental benefits.

HWP, carbon storage can range from immediate release (fuelwood) to release centuries later (construction) (figure 1). By delaying the release of carbon back into the atmosphere, HWP can help to mitigate climate change.

In addition to the direct mitigation effects of carbon stored or conserved in forests, HWP can reduce carbon emissions by acting as a substitute for fossil fuel-intensive materials, such as concrete or metal for construction. Material substitution effects have high potential for mitigation. For example, producing a concrete-based wall emits 15 times more carbon dioxide than producing a wood-based wall (Albrecht 2008).<sup>2</sup> As fuelwood, HWP are also used for energy; however, this analysis does not estimate the mitigation potential of wood-based energy.

In the context of climate finance, promotion of HWP has the benefit of attracting private sector investment and leveraging any public resources spent. Moreover, strengthening the forest sector and promoting the production of wood-based products would allow national governments to achieve other economic and social objectives, such as rural employment.

## 2. Key messages for promoting HWP

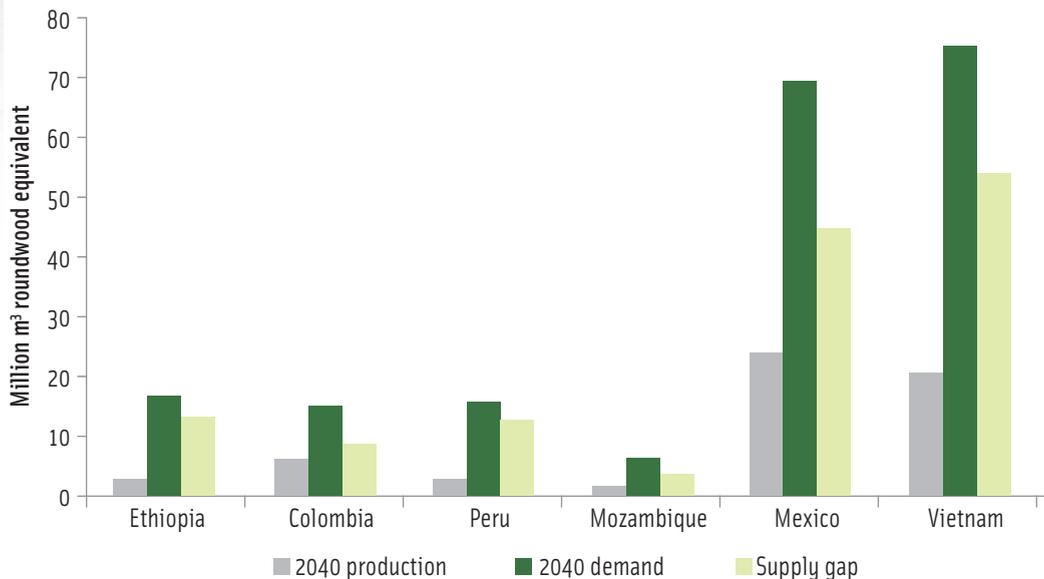
Under current conditions, the supply of HWP is unlikely to keep up with the expected demand (figure 2). Increasing economic and population growth in the study countries will drive greater consumption of HWP. Without making the recommendations suggested in this brief, increasing consumption will result in large HWP supply gaps and continued use of unsustainable alternatives to HWP.

Increasing HWP production to meet this demand would have many social and economic benefits, such as gross domestic product (GDP) growth and employment creation in rural areas. Projected demand for HWP provides the foundation for strong business cases to encourage companies and investors to invest in productive forests and HWP processing industries. Due to expected private sector investment, supporting the use of HWP can contribute to the achievement of Nationally Determined Contribution (NDC) targets, and to the implementation

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<sup>2</sup> Authors' calculations based on the production of a frame structure of 108 square meters.

**FIGURE 2** Projected HWP Supply Gap in 2040 under Current Conditions



Note: HWP = harvested wood products; m = meter.

of REDD+ with relatively small public sector resources.<sup>3</sup> This brief quantifies the benefits of promoting HWP production in Mexico, Colombia, Ethiopia, Mozambique, Vietnam, and Peru, and recommends steps to support HWP.

In addition to boosting job creation and GDP growth, the promotion of HWP is an effective climate change mitigation strategy. HWP production contributes to mitigation in three ways: (i) increased sequestration of carbon in productive forests, (ii) increased carbon sequestered in HWPs through the lifespan of the product, and (iii) substitution of materials (such as concrete or steel) that are carbon intensive to

<sup>3</sup> REDD+ stands for reducing emissions from deforestation and forest degradation, conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks (UNFCCC, Decision 1/CP.16, paragraph 70).

produce. The six study countries combined could sequester more than 150 million tons of carbon dioxide equivalent through HWP promotion.

Promotion of HWP aligns with existing international climate and development goals. The NDCs of many countries include the forest sector and lay out ambitious carbon sequestration objectives, which could be partially met through HWP promotion. Sustainable HWP production can help to reduce pressure on protected forests, contributing to REDD+ objectives. In addition, voluntary country commitments for forest landscape restoration, as a part of the Bonn Challenge, align with HWP production.

Shifting material use in the construction sector away from fossil fuel-based materials, such as brick, concrete, and metals, to HWP is the single most effective means of promoting HWP. Although rural areas are more important for HWP production, growing infrastructure demand in cities will affect demand for HWP and the long-term green growth potential of the forest sector. Consumption of HWP can be increased through the following measures:

- Studying country-specific attitudes toward HWP use, educating consumers about the benefits of HWPs, and building demonstration wood buildings to reduce the stigma around HWP use.
- Educating actors throughout the forestry supply chain, including harvesting, processing, and construction, on how to incorporate HWP into building design.
- Identifying and addressing regulations that make HWP use more expensive or illegal.
- Promoting HWP use in construction projects through procurement policies or building standards.

Environmental sustainability and low productivity must be addressed for HWP production to reach its potential. If HWP result in deforestation, they will undermine the climate change mitigation benefits described in this brief. Effective management of productive forests is linked to protecting forest conservation areas, by reducing pressure on protected forests. Moreover, low productivity in productive forests hampers the competitiveness and growth of countries' forest sectors. National governments and international development organizations should undertake the following steps to address these issues:

- Strengthen law enforcement, governance, and incentives for the protection and management of forests.
- Improve land tenure security and land use regulations.
- Provide technical assistance to improve the technical and management capacity of the forest and wood processing sectors.
- Improve access to market information through the development of regional dialogues with producers, federations, buyers, processors, and financial intermediaries. This will help to reduce uncertainty around investments in productive forests and processing industries.

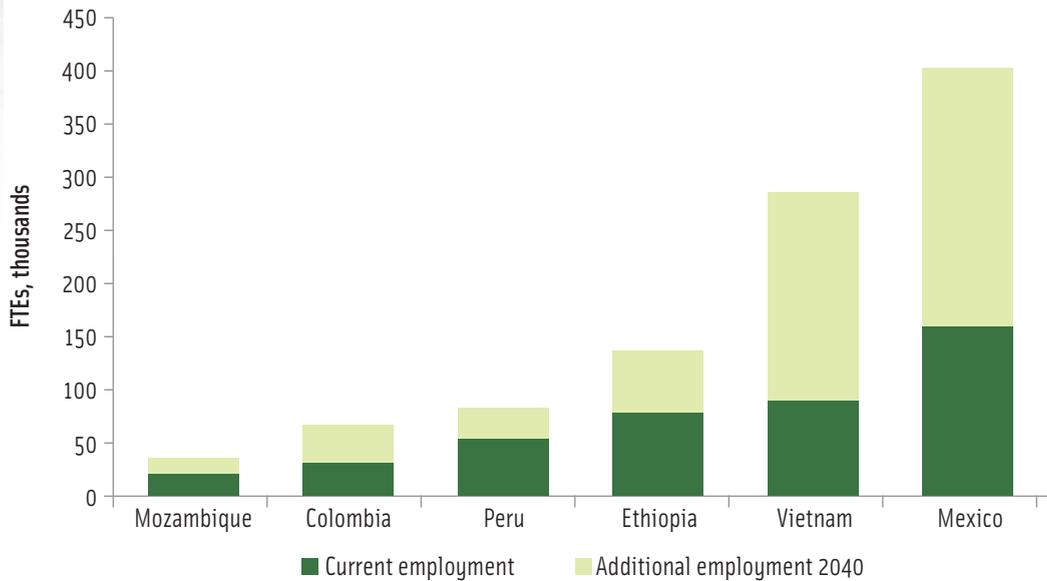
The long-term nature of paybacks from forestry investments means that improving financing for HWP production and processing is particularly important. Although profitable over the long term, an investment in productive forests may take eight or more years to “break even,” making financing institutions key players in the successful promotion of HWP. Access to finance is a key barrier for forestry businesses in the six study countries. International finance institutions can address this problem by:

- Providing dedicated funds for market and feasibility studies, to develop and demonstrate the feasibility of HWP business models. Many forest management and processing companies require business development support to be “bankable” for private investors.
- Increasing the instruments available to forestry enterprises via multilateral development banks, especially equity, guarantees, and subordinated debt.
- De-risking forest sector investments through structured funds, and guaranteeing products that enable local banks to establish or modify existing credit lines to reflect forest sector investment requirements, such as maturity, interest rates, and collateral requirements.

### 3. Green growth potential of HWP

Promoting HWP has many social and economic benefits, such as increasing GDP growth and creating jobs, and is an effective means of promoting inclusive green growth. Figure 3

**FIGURE 3** Employment Benefits of the Green Growth Scenario



Note: FTEs = full-time equivalent workers.

summarizes the job creation potential of meeting domestic HWP demand through increasing local production in the green growth scenario, compared with current employment in the forest sector.

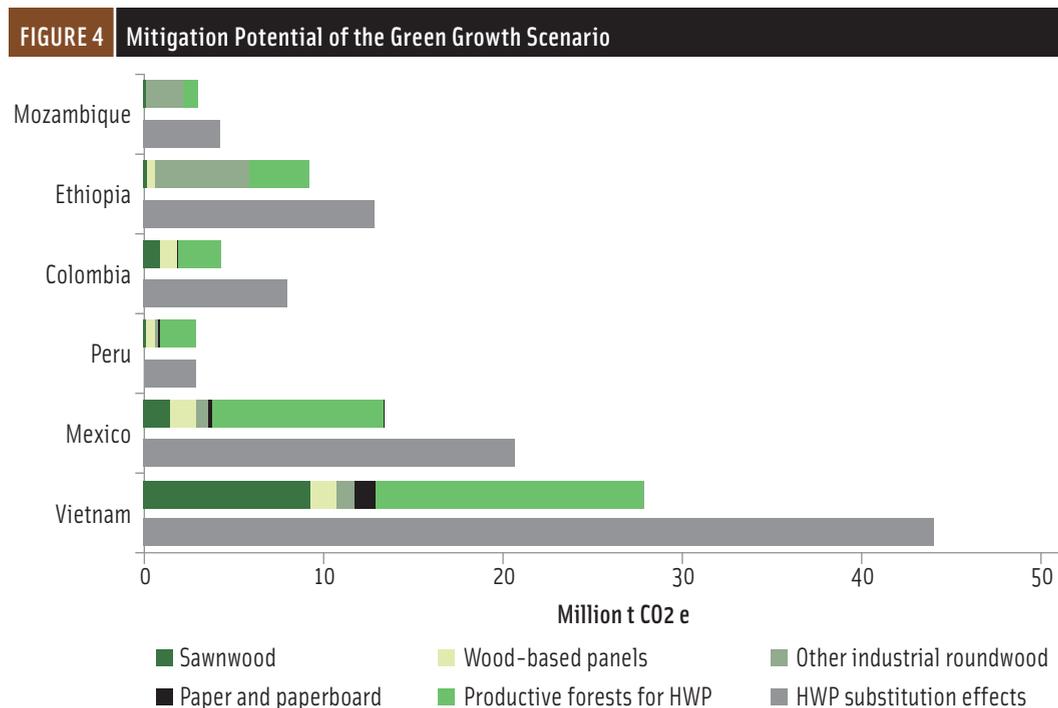
Of the six countries studied, Vietnam and Mexico would experience the greatest increases in forestry value added and employment from forestry. This is primarily due to large expected demand for HWP. Although Mozambique would have the smallest absolute gain in economic benefits, the relative growth of value added and employment from forestry would be significant, taking into account the size of the country's economy.

Depending on each country's specific demand patterns, and the status of industrialization in the value chains, HWP production creates several types of jobs. Smallholder forestry, introduction of reduced-impact logging methods, high value-added processing, energy

efficient charcoal production, and processing for the construction sector are examples of business opportunities that support HWP production and promote job creation. Investment in the sector is a cost-effective means of creating jobs.

Although there are barriers to private sector investment in the forest sector (discussed in section 4), business models for HWP production and processing offer attractive returns for investors. Relatively small public sector investments in the enabling environment would catalyze private sector participation in the sector.

HWP production also mitigates climate change by sequestering carbon dioxide in productive forests and the HWP, and by substituting fossil fuel-intensive materials, such as brick or concrete (figure 4).



Note: HWP = harvested wood products; t CO<sub>2</sub> e = tons of carbon dioxide equivalent.

### Box 1: HWP and REDD+

Most REDD+ plans are focused on activities in the forest (afforestation, reforestation, and sustainable forest management) and few consider the development of supply chains beyond timber production or plan to account for carbon storage in HWP. Although HWP accounting faces technical challenges (for example, related to data availability), the issue has not been discussed in the REDD+ context, and it is unclear if donors are inclined to pay for emissions reductions from this carbon pool.

Substitution of fossil fuel-intensive materials with HWP provides the greatest mitigation benefit in all the countries. Additional sources of sequestration potential differ by country. Productive forests for HWP—the additional area of productive forests—is the second largest source of sequestration in Mexico, Peru, and Colombia. In Vietnam, sawnwood production and productive forests for HWP are the second most important. Ethiopia and Mozambique have much more potential to produce other industrial roundwood. The production of paper and paperboard offers limited mitigation potential, because of the short lifespans of these products.

## 4. Findings from the study countries

The forest supply chain in Ethiopia is not well advanced in technology and final HWP use. Raw material production is dominated by state forest enterprises on the one hand, and many smallholders on the other. The low productivity of the forest plantations managed by these groups presents an opportunity to boost the forest sector. In Ethiopia, timber prices are among the highest in Africa; timber demand is rapidly increasing; and site conditions in some regions are attractive for forestry investments. Many factors continue to constrain the growth of HWP production, especially an underdeveloped HWP supply chain, insufficient access to finance, and the lack of land suitable for investment.

Mozambique also has an underdeveloped forest sector and is constrained by technical forestry capacity. Poor infrastructure is another key limiting factor. If these and other issues are addressed, the country has identified large areas that are suitable for productive forests.

Production of HWP could be a great boon for Mozambique, which has the highest rural poverty rate among the countries in this study. Another important consideration is the role of charcoal production in the country, which is a primary driver of deforestation and loss of biodiversity.

The forest supply chain in Colombia is more advanced than those in Ethiopia and Mozambique. In Colombia, the private sector plays an important role throughout the supply chain, from forest production to final consumption of HWP. Sawnwood and wood-based panels have the greatest opportunity for growth. The major bottlenecks in these supply chains are land tenure uncertainty, poor infrastructure, and access to finance for forestry investments.

Productive forestry in Peru is constrained by issues similar to those in Colombia, although the lack of technical expertise is a particularly acute problem in Peru. The country also suffers from the inefficiency of current extraction practices in these forests. Expanding the practice of reduced-impact logging offers the lowest greenhouse gas abatement cost among the business models that were considered.

Communal land management entities in Mexico—known as *ejidos*—present unique challenges as well as opportunities to contribute to HWP production and address poverty concerns. Mexico is also notable for the large area of plantation forestry that would be required to meet domestic demand for paper and paperboard. It is unlikely that plantations for the production of paper and paperboard will achieve the areas estimated, because of the high demand for land in the country. Like Colombia, political violence is a concern for growth of the forest sector in Mexico.

Vietnam likely has the most mature forestry industry of the countries surveyed. To support HWP production, the country should continue the process of privatization of state-owned forestry companies. Vietnam is also notable for the enormous projected gap between supply and demand of HWP in 2040, which suggests great potential to expand HWP production through productive forests.

Based on the analysis in the study, several common HWP production barriers have been identified:

- Land tenure insecurity and complicated land use regulations make it difficult for project developers to identify appropriate areas for productive forests. In some countries, technically suitable land is owned by the state, while in others it is controlled through

community management entities. Some countries are in the process of redefining land use regulations and regulatory agencies, which creates uncertainty for investors.

- Infrastructure is often underdeveloped, increasing the costs of accessing national and international markets.
- Technical forestry management skills are often low and limit the private sector's ability to depend on local experts. Existing plantations seldom have high productivity.
- Access to finance with suitable terms for forestry investments is extremely limited. Some requirements for financing, such as collateral requirements, are prohibitively onerous. Companies are forced to self-finance investments, limiting the growth of the HWP sector.
- Information about market conditions and investment opportunities is often not publicly available, making it difficult for companies to make investment decisions.
- In some countries, the HWP sector is undeveloped throughout the supply chain, creating uncertainty for private sector actors that rely on other parts of the supply chain. Uncertainty around accessing raw material may make it difficult for a sawmill to expand processing capacity, for example.
- In some countries, there are also barriers that are not specific to HWP production. Internal violent conflict and pervasive corruption are two examples that increase the cost of doing business.

In addition to supply-side constraints, limited knowledge of the potential for HWP in modern construction also hampers the growth of the forest sector. In many developing countries, wood is not yet widely used in urban construction. Actors in construction supply chains are often more accustomed to using brick, concrete, or other non-wood materials. However, in high-income countries, such as the United States, Germany, and Switzerland, HWP play a significant role in construction.

The perception of the use of wood in construction is another impediment to HWP growth, as wood construction materials are sometimes perceived as low status or associated with low-income, poor quality housing. Depending on the country, it can be difficult for construction companies to comply with building standards when using HWP, and to access modern HWP through their supply chain.





**WORLD BANK GROUP**

1818 H Street, NW  
Washington, DC 20433  
USA  
Telephone: +1 202 473 1000  
Internet: [www.worldbank.org](http://www.worldbank.org)